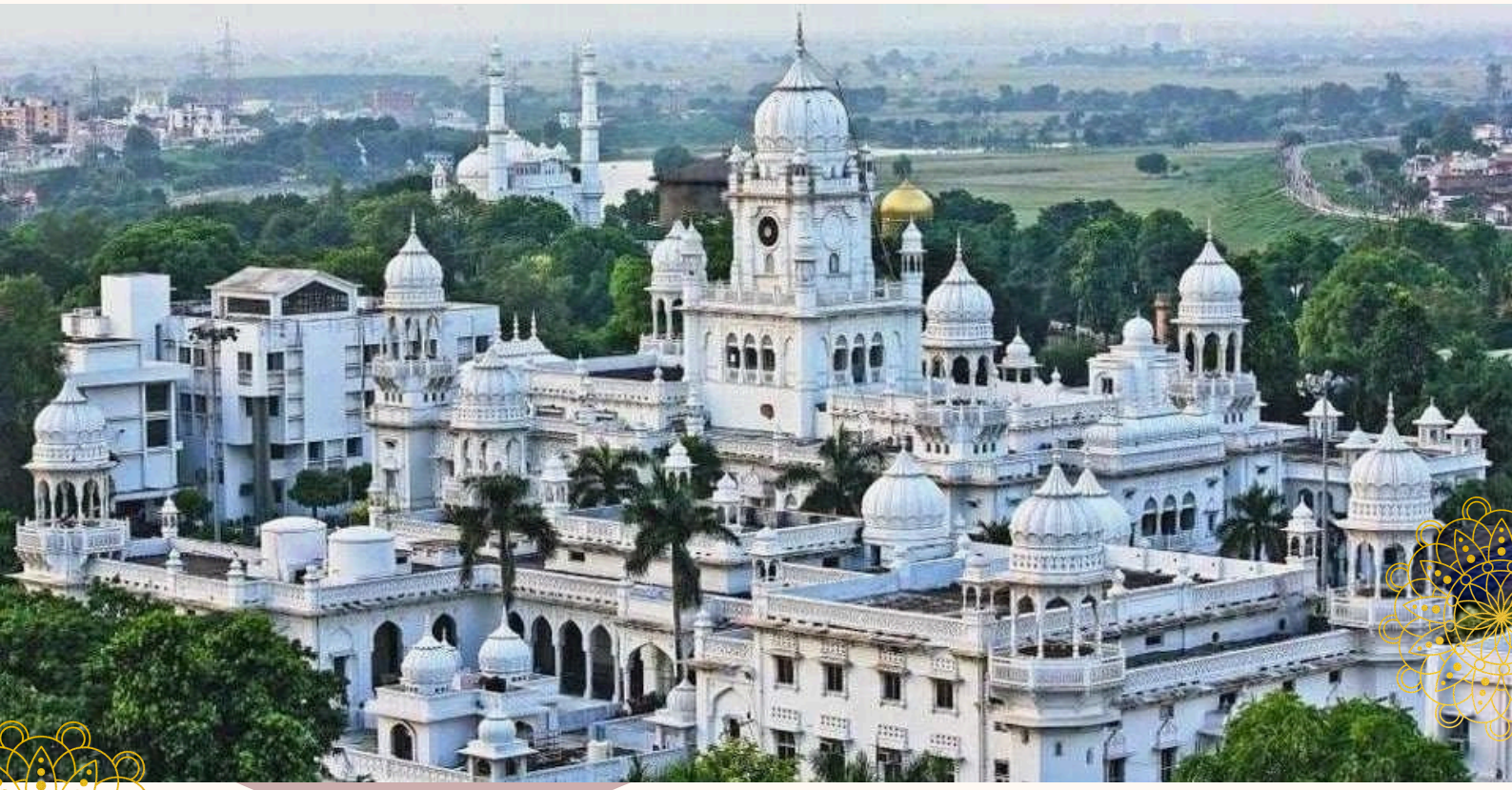
TRAUMA 2024

14th Annual Conference Of
Indian Society for Trauma & Acute Care(ISTAC ®)&
2nd Annual Conference Of UP Chapter ISTAC

8th 9th 10th November 2024



Sowenir

Venue: Atal Bihari Vajpayee Scientific Convention Centre,
KGMU, Lucknow UP, India

Organised By:
Deaprtment Of Trauma Surgery, KGMU , Lucknow UP, India

The Uttar Pradesh Medical Council has awarded:

(9) Credit Hours

TRAUMI 2024

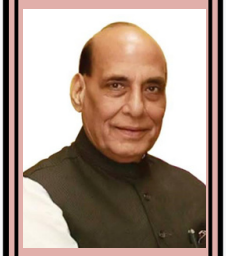
14th Annual Conference Of
Indian Society for Trauma & Acute Care(ISTAC®)&
2nd Annual Conference of UP Chapter ISTAC

Theme: Trauma Care: Road to Recovery & Resilience

Date: 8th-10th November 2024
Venue: Atal Bihari Vajpayee Scientific Convention Centre, KGMU, Lucknow UP, India

Souvenir

Organised By: Department of Trauma Surgery, KGMU, Lucknow UP, India



राजनाथ सिंह
RAJNATH SINGH

रक्षा मंत्री
भारत
DEFENCE MINISTER
INDIA

दिनांक : 24.10.2024

संदेश

मुझे यह जानकर हार्दिक प्रसन्नता हुई है कि **किंग जॉर्ज मेडिकल यूनिवर्सिटी, लखनऊ (उ.प्र.)** के **ट्रॉमा सर्जरी विभाग** द्वारा **दिनांक 08 से 10 नवंबर 2024 तक 14वें वार्षिक सम्मेलन Trauma 2024 और यूपी चैप्टर ISTAC के दूसरे वार्षिक सम्मेलन** का आयोजन किया जा रहा है तथा इस अवसर पर एक स्मारिका भी प्रकाशित की जा रही है।

ट्रॉमा सर्जरी चिकित्सा क्षेत्र में एक ऐसा महत्वपूर्ण विषय है, जो लोगों के जीवन की रक्षा में निर्णायक भूमिका निभाता है। सड़क दुर्घटनाओं, प्राकृतिक आपदाओं और अन्य आपातकालीन स्थितियों में ट्रॉमा सर्जरी से जुड़े समर्पित चिकित्सा विशेषज्ञों की भूमिका अत्यंत महत्वपूर्ण होती है।

मैं किंग जॉर्ज मेडिकल यूनिवर्सिटी के ट्रॉमा सर्जरी विभाग से जुड़े सभी सदस्यों को वार्षिक सम्मेलन के आयोजन की हार्दिक बधाई देता हूं तथा स्मारिका के सफल प्रकाशन की कामना करता हूं।

शुभकामनाओं सहित।

(राजनाथ सिंह)

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Tel. : +91 11 23012286, +91 11 23019030, Fax : +91 11 23015403
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योगी आदित्यनाथ

मुख्य मंत्री
उत्तर प्रदेश

पत्र संख्या- 125/पी0एस0-सी0एम0/2024
लोक भवन,
लखनऊ - 226001

दिनांक :
24 OCT 2024

संदेश

हर्ष का विषय है कि ट्रॉमा सर्जरी विभाग, किंग जॉर्ज चिकित्सा विश्वविद्यालय, लखनऊ द्वारा दिनांक 08 से 10 नवम्बर, 2024 तक लखनऊ में इण्डियन सोसाइटी फॉर ट्रॉमा एण्ड एक्यूट केयर (ISTAC) का 14वां वार्षिक सम्मेलन तथा यू0पी0 चैप्टर ISTAC का द्वितीय वार्षिक सम्मेलन आयोजित किया जा रहा है। इस अवसर पर एक स्मारिका का विमोचन भी किया जाएगा।

ऐसे आयोजन चिकित्सा शिक्षा एवं शोध को नवीन दिशा प्रदान करते हैं। साथ ही, चिकित्सा जगत में आधुनिक तकनीक व उपचार विधि के आदान–प्रदान का माध्यम भी बनते हैं। मुझे विश्वास है कि यह कार्यक्रम समस्त प्रतिभागी चिकित्सकों, एम0बी0बी0एस0 के विद्यार्थियों तथा नर्सिंग स्टाफ को उपचार की नवीन पद्धतियों से परिचित कराने में उपयोगी सिद्ध होगा।

आयोजन की सफलता हेतु मेरी हार्दिक शुभकामनाएं।

(योगी आदित्यनाथ)

दूरभाष : 0522-2289017 / 2289010 / 2289167 फैक्स - 0522-2239234 ईमेल - cmup@nic.in

ब्रजेश पाठक
उप मुख्यमंत्री

चिकित्सा शिक्षा, चिकित्सा एवं स्वास्थ्य,
परिवार कल्याण तथा मातृ एवं शिशु
कल्याण विभाग, उत्तर प्रदेश
कार्यालय कक्ष संख्या–99, 100, मुख्य भवन,
विधान सभा सचिवालय
दूरभाष– 0522–2238088/2213272 (का0)
लखनऊः दिनांक 22.10.2024.

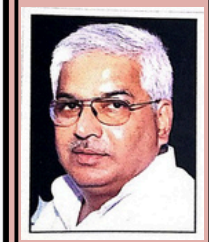
संदेश

मुझे यह जानकर अत्यंत प्रसन्नता हो रही है कि किंग जार्ज चिकित्सा विश्वविद्यालय, लखनऊ के ट्रामा सर्जरी विभाग द्वारा दिनॉक 08 से 10 नवम्बर, 2024 तक 'इण्डियन सोसाइटी ऑफ ट्रामा एण्ड एक्यूट केयर' (ISTAC) के 14वें वार्षिक सम्मेलन का आयोजन किया जा रहा है।

निरन्तर परिवर्तित हो रहे सामाजिक, आर्थिक एवं भौगोलिक परिवेश में आम जनमानस द्वारा अपने जीवन स्तर को उत्कृष्ठ किये जाने के दृष्टिगत अति व्यस्त जीवनशैली के कारण आघातों से ग्रसित मरीजों की संख्या निरन्तर बढ़ती जा रही है। ऐसे मरीजों के समुचित उपचार हेतु आधुनिक चिकित्सा सुविधाओं के साथ ही कुशल एवं निपुण चिकित्सकों की उपलब्धता अत्यन्त ही अपरिहार्य है। साथही आम जनमानस को अपनी जीवनशैली को व्यवस्थित कर इन विपरीत स्थितियों से बचाव हेतु भी जागरूक किया जाना हम सभी का दायित्व हैं ऐसी स्थिति में किंग जार्ज चिकित्सा विश्वविद्यालय के ट्रामा सर्जरी विभाग द्वारा ट्रामा एवं गहन चिकित्सा विषय पर सम्मेलन का आयोजन किया जाना निश्चित ही इस दिशा में एक प्रशंसनीय प्रयास है।

मैं, किंग जार्ज चिकित्सा विश्वविद्यालय के ट्रामा सर्जरी विभाग द्वारा द्वारा आयोजित सम्मेलन की सफलता के लिए हार्दिक शुभकामनाएं देता हूँ।

(ब्रजेश पाठक)



मयंकेश्वर शरण सिंह
राज्यमंत्री

संसदीय कार्य, चिकित्सा शिक्षा,
चिकित्सा स्वास्थ्य, परिवार कल्याण
तथा मातृ एवं शिशु कल्याण विभाग
उ0 प्र0 सरकार

कार्यालय : 18, नवीन भवन, लखनऊ
दूरभाष– 0522–2238285
आवास– 07, राजभवन, लखनऊ।
दूरभाष– 0522–2237794

लखनऊ दिनांक :

मुझे यह जानकर प्रसन्नता हो रही है कि किंग जॉर्ज मेडिकल यूनिवर्सिटी, उत्तर प्रदेश, लखनऊ के ट्रॉमा सर्जरी विभाग द्वारा दिनांक 08 से 10 नवम्बर, 2024 तक अटल बिहारी वाजपेयी सांइटिफिक कन्वेंशन सेण्टर, के0जी0एम0यू0, लखनऊ उत्तर प्रदेश, भारत में ''इण्डियन सोसाइटी ऑफ ट्रॉमा एण्ड एक्यूट केयर (ISTAC) का 14वॉ वार्षिक सम्मेलन और यू0पी0 चैप्टर ISTAC दूसरा वार्षिक सम्मेलन'' आयोजित किया जा रहा है। इस अवसर पर एक स्मारिका का प्रकाशन भी किया जा रहा है।

तेजी से बढ़ती दुर्घटनाओं के कारण प्रति वर्ष पूरे देश में लाखों की संख्या में जनहानि हो रही है, जो पूरे देश के लिए चिन्ता का विषय है। मुझे आशा है कि इस 03 दिवसीय राष्ट्रीय संगोष्ठी में ट्रामा से जुडे विशेषज्ञ गहन विचार–विमर्श करके दुर्घटना के शिकार लोगों की जीवन रक्षा एवं देखभाल हेतु बहुमूल्य सुझाव प्रस्तुत करेंगे, जो लोगों तथा चिकित्सा शिक्षा से जुडे चिकित्सकों के लिए उपयोगी व लाभप्रद सिद्ध होंगे।

संगोष्ठी के आयोजन एवं स्मारिका के प्रकाशन के लिए मेरी हार्दिक शुभकामनायें।

(मयंकेश्वर शरण सिंह)

Partha Sarthi Sen Sharma, IAS
Principal Secretary

D.O. No. :- /P.S./MH&ME/2024

Medical Health, Family Welfare & Medical Education Department, Government of Uttar Pradesh.

Date :

Message

It is matter of great pleasure to know that Department of Trauma Surgery, King George's Medical University is organizing "14th Annual Conference of Indian Society of Trauma and Acute care (ISTAC) & 2nd Annual Conference of UP Chapter ISTAC from 8th-10th November, 2024 at Atal Bihari Vajpayee Scientific Convention Centre, KGMU, Lucknow, UP, India.

2. The rapid acceleration of trauma patients has been observed in the recent past years whether it is due to accident or other causes. The stressed and hectic lifestyle of common man is one of the basic hidden cause of this situation in the present social scenario. The trauma patients require advanced acute medical care with lots of sensitivity. Besides this, the awareness for the healthy life style among the society can play pivotal role to pacify this situation.

3. I am sure that this conference will provide a platform for the participants to discuss and share their experience to bring new dimension to provide best medical care for the traumatic patients.

4. I congratulate all the members of the committee for organizing this conference and wish a grand success to the event.

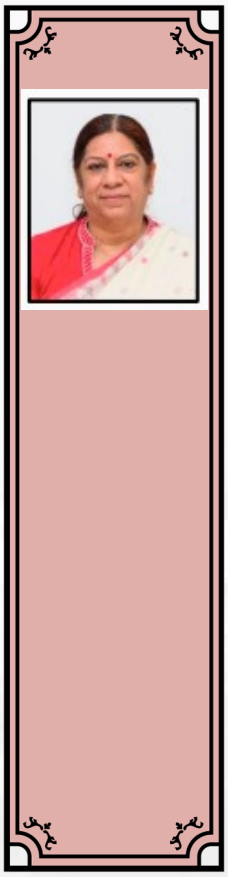
22/10/2024

(Partha Sarthi Sen Sharma)

Room No. 401 / 409, Lal Bahadur Shastri Bhawan (Annexi), U.P. Secretariat, Lucknow-226001
Phone No. : (0522) 2239306, 2215510 & 2239524, E-mail : psecup.health@gmail.com, psmededu@gmail.com

PROF. SONIYA NITYANAND
MD, Ph.D.
VICE CHANCELLOR
प्रो० सोनिया नित्यानंद
एम०डी०, पी०एच०डी०
कुलपति

KING GEORGE'S MEDICAL UNIVERSITY
U.P. LUCKNOW
किंग जार्ज चिकित्सा विश्वविद्यालय, उ०प्र०
लखनऊ



MESSAGE

It is matter of great pleasure to know that Department of Trauma Surgery, King George's Medical University is organizing **"Trauma-2024"**, 14th Annual Conference of Indian Society of Trauma and Acute care (ISTAC) & 2nd Annual Conference of UP Chapter ISTAC from 8th - 10th November, 2024 at Atal Bihari Vajpayee Scientific Convention Centre, KGMU, Lucknow UP, India.

The sharp increase in physical trauma cases, particularly those resulting from road accidents, has become a significant concern in recent years. One of the underlying causes of this rise is the fast-paced and stressful lifestyle that many individuals lead in today's society. Trauma patients, especially those involved in accidents, require specialized acute medical care that demands both precision and sensitivity. Additionally, raising public awareness about healthy lifestyles and responsible behaviour on the road can play a crucial role in mitigating this growing problem. Promoting safety and wellness can help reduce the incidence of such traumatic events.

I am sure that this conference will provide a platform for the participants to discuss and share their experience to bring new dimension to provide best medical care for the traumatic patients.

I congratulate all the members of the committee for organising this conference and wish a grand success to the event.

S. Nityanand

(Prof. Soniya Nityanand)
Vice Chancellor

01 Shahmina Road, Chowk, Lucknow, U.P., India – 226003
Ph: +91-522-2258880; Web: kgmu.org
E-mail: vc@kgmcindia.edu, Twitter: @kgmulucknow
Facebook: kgmuupdate

MESSAGE

It is heartening to note that the King George's Medical University, Lucknow is hosting the prestigious "**TRAUMA 2024**". 14th Annual Conference of Indian Society of Trauma and Acute care (ISTAC) & 2nd Annual Conference of UP Chapter ISTAC from 8th - 10th November, 2024 at Atal Bihari Vajpayee Scientific Convention Centre, KGMU, Lucknow UP, India. **The principal theme of the conference is extremely important i.e. "TRAUMA CARE: ROAD TO RECOVERY ANS RESILIENCE".**

We are aware of the magnitude of the problem of Injury (trauma) in India. Injury is a major public health problem for our nation. Today 88% of Injury volume is confined to low and middle income countries worldwide. In India 3% of our GDP is spent on Trauma Care. Trauma has attained epidemic proportions in emerging economies like India. Developed countries have introduced effectively injury prevention strategies successfully and efficient prehospital evacuation and hospital preparedness for immediate treatment reducing deaths and disabilities due to injury. This has been possible by developing trauma System approach. Injury mortality beyond 24 hours has come down to below 4% in developed societies.

However, in India injury mortality beyond 24 hours remains significantly high at more than 10%. Trauma is the leading cause of death and disabilities in India. Years of productive life lost due to injury exceeds both cancer and heart diseases put together. Similarly disability Adjusted Life years (DALYs) lost exceed both put together cancer and heart diseases.

India is on the path of rapid development by virtue of 5th Largest economy and likely to move to number 3 position by 2032. Since we are targeting for a developed country by 2047, we need to inculcate the safety culture which must go on in parallel to the development of road network across the country. In India, proportion of deaths and accidents in road traffic crashes is very high due to non-observance of the traffic rules by users.

ISTAC was envisaged to propagate injury prevention and improving trauma care across our vast nation. The conference and different hands-on workshops will provide a great academic extravaganza with prominent national and international speakers and domain experts in the field of trauma care delivering landmark orations, key-note speakers apart from sharing their experiences and pearls of wisdom.

Organisers have put in lots hard work in preparing a comprehensive scientific program which hopes to make this conference memorable for every delegate. I congratulate the organising team for the meticulous planning and execution of scientific and cultural extravaganza.

The conference will include pre-conference Workshops on the 08th November 2024 and the main Conference on 09th and 10th of November2024. The conference website is https://trauma2024.com/ for more details. There are four workshops for doctors viz: 1. Cadaveric Emergency Procedures – Fracture Fixation and Torso Emergency procedures, 2. Trauma Radiology & POCUS, 3. Ventilation and Critical Care, 4. Tendon & Vascular Repair. There are Four b pre-conference workshop for Nurses and Paramedics VIZ: Basic First Aid and First Responder Training, 2. Hands – on Training on Initial Assessment and Management of an Injured Patient, 3. Comprehensive Wound Care and Stoma Care Management, 4. Ventilator and Equipment Handling in ICU – A hands -on Approach.

I look forward to welcoming you all in November 2024 in the historical City Capital of Lucknow with multi cuisine dining and historical places to visit besides scientific conference participation. Looking forward to your active participation during the entire conference…

MC Misra
President
ISTAC

MESSAGE

On behalf of the Indian Society for Trauma and Acute Care, I take pride in congratulating the Trauma Surgery department of King George's Medical University Lucknow and the UP Chapter of ISTAC for organising the "14th Annual Conference of Indian Society of Trauma and Acute care (ISTAC) & 2nd Annual Conference of UP Chapter ISTAC from 8th - 10th November, 2024 at Atal Bihari Vajpayee Scientific Convention Centre, KGMU, Lucknow UP, India".

Trauma is attaining almost an epidemic status worldwide. Since trauma affects primarily the young and economically productive population of the community and, thus ultimately, the nation at large, there is an urgent need to address this issue in the context of epidemiology, prevention, critical and timely management, and rehabilitation. The primary objective of this congress is to bring all stakeholders at one platform to create new guidelines and protocols with standardized trauma care to all.

The organising team have drafted an innovative programme that includes sessions on issues relating to advances in trauma management with an aims to deal with a multi-speciality approach to trauma care and rehabilitation.

The theme of this year's conference, Trauma Care: Road to Recovery & Resilience is aptly chosen to discuss all these issues across various specialties. I am confident that the scientific presentations & workshops conducted during the Congress will prove beneficial to the participants in keeping them abreast of the latest developments in the field of trauma care and will result in valuable recommendations linking specialized trauma care with the pre-hospital emergency care of trauma victims.

This year ISTAC has taken an initiative to acknowledge researchers working in the field of trauma. Awards in the category of Young faculty, Resident doctor and Nursing officer will be given based on their original research papers submitted in the conference award category. This will encourage residents, nurses and faculty to showcase their work to trauma fraternity . I once again thank all the speakers and delegates from various fields of expertise working in the domain of trauma and Injury who have come from all over the globe.

I wish you all a fruitful interaction and a pleasant stay during the congress.

Dr. Sushma Sagar
Prof. & Head
Department of Surgical Disciplines &
Division of Trauma Surgery & Critical Care, JPN Apex Trauma Center AIIMS,
New Delhi

MESSAGE

Education is the most powerful weapon which you can use to change the world. An investment in gaining knowledge, skill and attitude pays the best interest in life It Gives me immense pleasure to pen down my thoughts on the occasion of 14th annual conference of Indian Society of Trauma and Acute Care (ISTAC) organized by King George Medical University, UP, Lucknow. KGMU with its great legacy has contributed immensely in the education and training of thousands of graduate and post-graduates who have brought glory and laurels to their Alma mater by the academic and professional excellence.

It was King-Emperor, George V, then Prince of Wales who visited India in 1905 and inspired the idea of establishing a medical college. The first medical session of college was started in October 1911. On 16th September 2002 an Act was passed by the Government of Uttar Pradesh resulting in converting and upgrading it as Chhatrapati Shahuji Maharaj Medical University. On the demand of the general public and more than 40,000 world over Georgians, teachers and students of the University, the Government of Uttar Pradesh in the last week of October 2003 reverted the name of the medical university from C.S.M. Medical University to King George Medical University.

Primary mission of ISTAC is rooted in the belief that every individual deserves access to high-quality trauma care as well as forming a professional forum where the exchange of information, education, and training flourishes encompassing pre-hospital interventions, in-hospital acute care and definitive treatment of trauma victims with special reference to injury prevention. It also aims at competency based medical education in trauma care involving all three domains of learning. Maintaining the ethos of ISTAC and the legacy of KGMU to provide quality education in trauma care, this conference is being organized. This event is the culmination of an enormous collaborative efforts of whole organizing team with sincere dedication and commitment.

On behalf of organizing committee and in the capacity of organizing chairman as well as in the Capacity of President of UP Chapter of ISTAC, I am greatly honored to welcome all Orators, Guest Speakers, Chairpersons, delegates and stalwarts in the field to this academic extravaganza under ambit of Indian Society of Trauma and Acute Care. I am confident that every delegate will learn something new and take back the inspiration to excel in trauma care – thus serving the Nation.

Long Live
ISTAC

The Cooperation would include: Periodic meetings for open presentation and discussion of scientific material concerning subjects of common interests. The Society will work in close cooperation with other groups/organizations involved in education, training and research in the field of Trauma and Disaster Medicine throughout the world.

The Society will work in close cooperation with other groups/organizations involved in education, training and research in the field of Trauma and Disaster Medicine throughout the world.

The Society would undertake training of Medical, Para-medical as well as general public in basic life support, with an aim to enhance the concept of a "Safe Community". The Society will provide a platform for skill based training in the field of Basic and Advanced Life Support for Paramedical and Medical professionals. It will collaborate with national and international organizations to bring into India, internationally accepted courses like the ATLS, BLS/ACLS, PALS, NALS, PHTLS, ITLS, Hospital Disaster Preparedness courses, Courses on NBC preparedness and so on.

Initiation and Cooperation in publication of a journal and/or Newsletter on the subject of Trauma, Acute and Intensive Care.

The Society will actively engage in Injury Surveillance Programs and will try to develop a database (Trauma Registry) on a national basis which will immensely help the nation in the field of developing Trauma Care policies and programs, research and wider goal of Injury prevention.

The Society will actively engage and undertake other projects of scientific interest to seek information, or with goals desired by the organizations that serve the mission of the society.

DR. Vinod Jain
MBBS (Hons), MS,
FRCS (Edinburgh), FISS (Switzerland), FACS (USA), FICS, FIAGES, FIMSA, FMAS (Meritorious), FAIS, FIME, MAMS Professor,
Department of Surgery (Retd.) KGMU,
Lucknow

MESSAGE

It is matter of great pleasure to know that Department of Trauma Surgery, King George's Medical University is organising “14th Annual Conference of Indian Society of Trauma and Acute care (ISTAC) & 2nd Annual Conference of UP Chapter ISTAC from 8th - 10th November, 2024 at Atal Bihari Vajpayee Scientific Convention Centre, KGMU, Lucknow UP, India.

I am feeling greatly privileged to be founder & head of the established department of Trauma Surgery of King George's Medical University, U.P., which is the first of its name all over India. We are a team of highly specialised professionals working together to improve the trauma prevention and trauma management scenario in the institution.

The department of Trauma Surgery is speedily escalating toward achieving its prime objectives of improving institutional and community health care, teaching, training. Our department also maintain an active research group for carrying out collaborative / interdisciplinary researches, to support academic program, awareness program, social outreach program, health camps & adopting village for holistic development and delivering healthcare facilities to their doorstep.

The motivation behind publishing Souvenir is to update the university about various departmental activities, research findings, and other useful articles in the field of trauma prevention and management.

We are making the most of the state of art infrastructure since the establishment of the department on 4th January 2017 toward increasing our clinical practice and skill. We consider ourselves as proud Indian with Zeal to serve our field and the nation at large.

Prof. Sandeep Tiwari
Organising Chairman
HOD trauma surgery
KGMU, Lucknow

MESSAGE

Dear Friends and Colleagues

Greeting from King George's Medical University, Lucknow

It is our great privilege to welcome and invite you all to the 14th Annual Conference of Indian Society of Trauma and Acute care (ISTAC) & 2nd Annual Conference of UP Chapter ISTAC from 8th - 10th November, 2024 at Atal Bihari Vajpayee Scientific Convention Centre, KGMU, Lucknow UP, India in the city of Nawabs.

Our team is working day and night to put up an excellent feed for the academic, social and cultural front. I wish to place on record the tremendous support from staff and management for whole treated support for this conference.

We are working out excellent academic programs which include lectures, free papers, poster presentations and workshops to be delivered by renowned facilities in collaboration with ISTAC.

The Organizing Committee is eager to make Trauma 2024 a memorable event for you and your family and we are looking forward to your active participation and interaction.

Dr. Anita Singh
Organising Secretary
Additional Professor
Department of Trauma Surgery
KGMU, Lucknow

MESSAGE

Warm Greeting from the team Trauma 2024

The Mega event called Trauma 2024, the 14th Annual Conference of Indian Society of Trauma and Acute care (ISTAC) & 2nd Annual Conference of UP Chapter ISTAC from 8th - 10th November, 2024 at Atal Bihari Vajpayee Scientific Convention Centre, KGMU, Lucknow UP, India. Is a great feast of brilliant academics combined with a grand camaraderie.

The organising committee has left no stone unturned to make this conference the most memorable one!

We too at Team Trauma 2024 Souvenir have tried our best to ink in most of the 'happening' topics related to our theme of conference, into this creation in print which would make an interesting read for everyone!

We hope you all would not only enjoy the conference deliberations in our ancient city.

Dr. Yadvendra Dheer
Organising Secretary
Additional Professor
Department of Trauma Surgery
KGMU, Lucknow

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Expert's Write Up

Keynote Address: Prospects of Institutional Leadership for Trauma Care and Welcome Address

Prof. Mahesh C Misra
President ISTAC

Good morning, distinguished faculty, respected colleagues, and dedicated trauma specialists.

It is an honour to stand before you today at the *14th Annual Trauma Conference, 2nd UP Chapter, of the Indian Society of Trauma and Acute Care Surgery (ISTAC),* organised by the department of Trauma Surgery *King George's Medical University* here in Lucknow.

We are gathered here not just as professionals but as stewards of trauma care—a field that is as challenging as it is rewarding, and as demanding as it is transformative. In a world where lives can be saved or lost in a matter of minutes, trauma care represents a unique intersection of urgency, precision, and profound responsibility.

As we stand on the threshold of this new era in trauma care, I am both humbled and exhilarated to address such a distinguished audience at this seminal event—the *2nd UP Chapter* of the *Indian Society for Trauma and Acute Care (ISTAC)*.

We are not here just to share research or exchange ideas. We are here to redefine the very fabric of trauma care in India. We are here because trauma care is not merely a branch of medicine—it is the lifeline of emergency medical response. The work we do today and the innovations we explore will shape not only institutions but the health outcomes of millions across our nation.

ISTAC, from its inception, has been a beacon of progress in trauma care in India. Founded in 2007, by pioneers with a vision to elevate trauma management standards, ISTAC has been instrumental in uniting trauma surgeons, emergency physicians, intensivists, orthopaedicians, neurosurgeons, plastic surgeons, nurses, and other healthcare providers under a shared mission: to save lives and improve outcomes in trauma care. Over the years, ISTAC has grown, evolving into an organization that provides a forum for knowledge sharing, training, and setting best practices.

And what better place to host this gathering than KGMU—an institution that has long stood at the forefront of medical education, research, and patient care in India? The Department of Trauma Surgery & ATLS Site here has pioneered protocols and trained thousands of professionals who have gone on to make meaningful impacts nationwide.

Globally, trauma care has developed into a specialized field with its own set of protocols, procedures, and technologies, adapting to the complexities of modern emergencies. Trauma surgery, originated with the purpose of treating wartime injuries and has since evolved to meet the demands of both urban and rural trauma, mass casualties, and complex injuries.

India's trauma care landscape has seen remarkable growth. Not long ago, trauma care was fragmented and inconsistent. The lack of specialized trauma centers and standardized training meant that many injuries, which could have been managed effectively, turned fatal due to delays or inadequate care. However, in the past two decades, our nation has made great strides. We have established Level 1 Trauma Centers in major cities, improved pre-hospital care, and developed dedicated training programs.

The integration of Advanced Trauma Life Support (ATLS) protocols into trauma training across India has been instrumental. At KGMU, the implementation of these protocols, alongside the continuous advancement of trauma care pathways, has saved countless lives.

But while we celebrate these advances, we must acknowledge that our journey is far from complete. Today, trauma remains the leading cause of death among people under the age of 45 in India. The toll of road traffic accidents, industrial injuries, and other emergencies underscores a fundamental need for strengthening trauma systems, creating a seamless, integrated network that brings life-saving care to the most remote corners of our nation.

Why is institutional leadership so critical to the field of trauma care? Because it is within institutions that meaningful, lasting change takes root and flourishes. Institutions set standards, shape culture, and influence the practices that define our field.

Institutions act as lighthouses in trauma care, guiding medical professionals and setting expectations for excellence, responsiveness, and empathy. They play a unique role in integrating cutting-edge research with practical training, creating a dynamic environment where best practices evolve and adapt to the demands of a rapidly changing world. Here at KGMU, the Department of Trauma Surgery has embraced its role as a leader by establishing rigorous trauma pathways, advocating for the integration of pre-hospital care, and fostering an environment where multidisciplinary teams work seamlessly to address complex trauma cases.

Yet, leadership in trauma care goes beyond organizational duties. It requires a vision for the future—a commitment to building a trauma system that is cohesive, efficient, and adaptable. It calls on us to ask: Are we reaching every patient, regardless of their location or resources? Are we investing in the latest technologies, such as AI-driven triage systems and mobile health networks, to better serve rural communities where access remains a challenge? And, importantly, are we educating a generation of trauma care providers who are equipped not only with skills but with the mindset to lead under pressure and respond with compassion?

This commitment to leadership is about building a legacy that does not just respond to trauma but transforms the way trauma care is delivered. Institutional leadership has the power to inspire and shape the future by continuously pushing boundaries, asking difficult questions, and fostering resilience in the face of both triumphs and challenges.

India has the infrastructure, the talent, and the will to create one of the most effective trauma care systems in the world. However, there are still hurdles. The lack of trauma centres in rural areas, delayed responses in pre-hospital care, and shortages of trained professionals are pressing issues.

We are at a pivotal juncture where we must shift from isolated achievements to a cohesive, nationwide trauma care network. This is the era where institutional leadership and political will can bridge these gaps, by investing in technology, expanding training programs, and advocating for national policies that recognize trauma care as an essential service.

To illustrate the potential of these efforts, let me share some insights. Globally, countries that have implemented structured trauma systems, such as the United States, have witnessed up to a 20% reduction in trauma-related mortality. In India, studies have shown that when patients receive care within the “golden hour,” survival rates increase significantly.

Another fascinating development is the use of AI in trauma triage and assessment. For instance, machine learning algorithms can now predict the severity of injuries based on basic patient information, allowing for more effective allocation of resources. Imagine the difference this could make in India’s rural hospitals, where experienced trauma teams are often in short supply.

As we stand here today at the 14th ISTAC Annual Trauma Conference, I ask each of you—whether you are a senior surgeon, a resident, or a policy advocate—to recognize the critical role you play in this journey. Our institutions are the lifeblood of trauma care, and it is through our collective leadership that we will create a system that saves lives by design, not by chance.

I am happy to know that KGMU Administration has sent a proposal for a new state of the art 500 bedded trauma centre with hybrid OT and all other modern facilities to treat trauma victims.
As you engage in this conference, share ideas, challenge norms, and explore new possibilities, remember that the path forward is a shared one. Together, we can create a future where trauma care is universally accessible, where lives are saved with precision, and where each of our institutions stands as a testament to resilience, hope, and leadership.

Thank you.

Amputation- A New Management Approach

DR. Sushma Sagar
Prof. & Head
Department of Surgical Disciplines and Division of Trauma Surgery & Critical Care, JPN Apex Trauma Center AIIMS, New Delhi

Amputation is a surgical option resorted to in cases where salvage is improbable. It takes a significant toll over patients physically and psychologically. The management protocols have evolved to adopt a holistic and patient centred approach. This includes surgical advancements, interdisciplinary collaboration and a comprehensive rehabilitation to improve patient outcomes. Pain being one of the most important causes of distress to patients, hinders the postoperative rehabilitation also.

Preoperative planning and extensive counselling of the patient helps in the better compliance of the patient. Effective pain management strategies, including pharmacological interventions and nerve blocks, are prioritized to enhance patient comfort and promote active participation in rehabilitation. Intraoperatively newer surgical techniques like targeted muscle reinnervation, regenerative peripheral nerve interface etc have been employed to reduce postoperative pain and phantom limb pain and also to improve prosthetic usage. Osseointegration of prosthesis improves mobility, better prosthetic usage and quality of life of amputees.

Post-operative care needs a comprehensive approach involving a multidisciplinary panel consisting of surgeons, physiotherapists, occupational therapists, and mental health professionals like psychiatrists and psychologists. Patient-centred care, early mobilization and tailored rehabilitation programs are designed to facilitate prosthetic use. Early prosthesis fitting helps in improving mobility and independence. Pharmacological and non-pharmacological methods have been employed in the pain control methods. Usage of TENS and RTMS have shown significant results in the postoperative pain management. Recently application of robots and virtual reality in the postoperative period to improve prosthetic control and pain management.

Furthermore, patient education is crucial; equipping individuals with knowledge about their recovery process, potential challenges, and available support systems fosters empowerment and encourages adherence to rehabilitation protocols.

In conclusion, management of amputees requires a holistic, multidisciplinary approach. The continued research and advancements in this field are required for overall care and improvement of quality of life of amputees.

Call Cry Alarm Alert: Development of an Integrated Trauma Care Command System

Prof. Amit Gupta
MS, FCLS, FACS (USA), FRCS (Glasg.)
Professor, Division of Trauma Surgery and Critical Care, JPN Apex Trauma Centre, AIIMS, New Delhi.

The "Development of Integrated Trauma Care Command System" suggests a system designed to enhance the coordination, communication, and responsiveness in managing trauma care and emergency situations. Let's break down the key aspects using Call, Cry, Alarm, Alert as potential phases or pillars within such a system:

1. Call:

Function: Initiating the response to an emergency.
Components:
A centralized emergency hotline.
Integration with telecommunication systems (e.g., 108 or emergency dispatch lines).
Real-time location services to locate the nearest responder.
Objective: Ensure that every emergency incident is quickly identified and passed to the appropriate services.

2. Cry:

Function: Escalating urgent cases or identifying critical emergencies.
Components:
Automated alerts for severe trauma cases based on predefined parameters (e.g., vital signs).
Trauma registries that prioritize high-risk patients.
AI-based analysis to detect abnormal trends (e.g., sudden influx of patients due to a mass casualty event).
Objective: Distinguish critical incidents requiring immediate attention to avoid delays in care.

3. Alarm:

Function: Mobilizing resources and teams to respond.
Components:
Alerts to trauma teams, ambulances, and specialized facilities.
Resource management tools (tracking equipment, availability of surgical rooms, or blood supply).
Interoperable communication between hospitals, EMS, and law enforcement.
Objective: Ensure resources are ready and optimally utilized for effective trauma management.

4. Alert:

Function: Ongoing monitoring and communication during the emergency response.
Components:
Incident dashboards showing patient status and available resources.
Real-time updates between field responders and trauma centers.
Notifications for secondary responders if the situation escalates (e.g., helicopters, specialized care units).
Objective: Maintain situational awareness and seamless coordination throughout the emergency.

System Integration and Benefits:

An Integrated Trauma Care Command System built around Call, Cry, Alarm, and Alert would enable:

Faster Response Times: With automated dispatch and triage systems.
Reduced Mortality Rates: Through real-time detection and prioritization of critical cases.
Efficient Resource Management: Ensuring the right teams and tools are available.
Enhanced Coordination: Across EMS, hospitals, and other responders.
Continuous Feedback Loop: Supporting data collection for quality improvement in trauma care.

This system aims to streamline every phase of trauma care—from receiving the first call to the final resolution—ensuring a patient-centered approach while minimizing bottlenecks in service delivery

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ATLS Journey so far in India and Lucknow

Prof M C Misra ATLS
ATLS India Chair
Prof Vinod Jain
Founder In-charge – ATLS KGMU, Lucknow
Mr. Suresh C. Sangi
ATLS India, National Coordinator

The process of ATLS Course in India began in 2007, when Dr. Chris Kaufman, International ATLS Chair visited facility at the J P N Apex Trauma Centre, All India Institute of Medical Sciences (AIIMS), New Delhi. A MOU was developed with Indian Society of Trauma And Acute care (ISTAC) to develop an ATLS site in India.

The entity was created thus named “ATLS India” to develop ATLS Program in India. In October/November 2008, a Group of Doctors and Nurse Coordinator from various Federal Govt. Institutions went to the closest country UAE running the ATLS Program. The funding for sending the team of doctors and Nurses was done by the Ministry of Health, Govt. of India. The team undertook backto-back Provider and Instructor Courses in UAE. After returning from UAE, the dates for back-to-back Inaugural ATLS Provider as well as Instructor courses at First ATLS Site i.e. J P N Apex Trauma centre, AIIMS, New Delhi were announced from 16th -25th April 2009.

Subsequently, new and new ATLS Sites are being developed. Currently we have 37 ATLS Sites in India. The latest 37 th ATLS site has been established at SRMS Bareilly, Uttar Pradesh where the Inaugural Course was held from 1 st September to 3 rd September 2024.

ATLS Provider and Instructor Courses data till October 2024

Name of Course	Number of Courses	Number of Participants
ATLS Provider Course	840	14250
ATLS Instructor Course	93	1076

ATLS courses in India are conducted the same way they as they are conducted in the USA. Initial Interactive lectures are replaced by Interactive Discussion (IAD) sessions akin to USA. During IAD, we are mixing local language also for better understanding of subject. The skill stations including that of initial assessment (Practice and Examination) are also strictly structured according to ATLS specifications.

The places where these courses are held are diversified from government to private hospitals so that more and more ATLS providers are prepared for better trauma care. The leadership team that conducts these courses are incredibly involved and most of them cancel their surgical cases/ professional commitments for three days of the ATLS so that they may be present in person for the whole course.

The participants are also from diverse professional backgrounds i.e. from professor level to intern level. The candidates belong to various disciplines like general surgery, anesthesiologists, orthopedics, emergency service and OMFS, non-clinical, para-clinical and so on... Lately after recognizing the need of trauma care education in remote areas of country, ATLS provider courses was also opened for medical graduates from Ayurvedic as well as Homeopathy streams. This is a minor deviation to extend better trauma care rural and remote area.

While ATLS is conducted for mainly interns in the US, in India we see ATLS to introduce trauma as a separate discipline, language and way of thinking. We see ATLS as an important mechanism to streamline trauma care and systematically integrate trauma into the thinking of physicians of all disciplines.

It is particularly relevant to Primary health care officers who are often the first care giver so that after primary survey the patients are taken to the nearest primary care facility with in-transit management. 3 ATLS India is robustly operating in over 37 different sites across the country conducting 80-100 courses per year. All the courses are conducted on a no profit no loss basis without any financial incentive. The Journey of ATLS India thus continues…….

Rapid Response Systems: Integration of Stakeholders in Disasters

Dr. Satish B. Dharap
M.S., D.N.B.
Designation: Professor & Head of Surgery
Topiwala National Medical College &
B.Y.L. Nair Charitable Hospital, Mumbai

Introduction

A disaster can strike anytime, anywhere and may affect anyone! Efficient management of a disaster involves attention to preventive measures, planning and preparedness before it actually strikes, immediate deployment of rescue and relief operations along with the medical aid after the disaster has struck and later, a longer-term programme for rehabilitation and reconstruction. Its success depends not only on the medical response, but also more importantly on societal organisation and planning, coordination among various agencies and teamwork. Although it is impossible to have a perfect planning for a disaster, readiness and preparation do make a difference. Management of cyclonic storm Fani which made landfall in the state of Odisha on May 3, 2019 has demonstrated how planning can minimize loss of lives and has also been praised by the U.N. agencies.

What is a disaster?

The word ‘Disaster’ connotes a situation where local infrastructure is totally disrupted and entire aid has to be provided from outside, like after a major earthquake or a volcanic eruption or a cyclonic storm. United Nations’ International Strategy for Disaster Reduction (UNISDR) defines it as a serious disruption of the functioning of a community or a society causing widespread human, material, economic or environmental losses which exceed the ability of the affected community or society to cope using its own resources. It can be viewed as a mismatch between ‘demand’ for various resources by the affected people and ‘supply’ available. The appropriate response is determined by the degree of this mismatch. In a ‘disaster’ (e.g. earthquake, cyclone, massive floods etc.) entire supply for all the needs has to come from outside.

Phases of disaster management:

Disaster management has been broadly described in four phases:

1) Prevention-Mitigation: These involve measures to prevent occurrence of an undesirable emergency incident and to reduce its impact should it occur. Hazard vulnerability analysis (HVA) helps in identifying susceptibility to a disaster so that preventive measures can be taken. Insurance cover against disasters is also a part of mitigation.

2) Preparedness: Preparation involves planning of processes and procedures to be followed and necessary supplies to be kept ready to handle the emergency event. Capacity building among the medical and paramedical staff is an important aspect of preparedness. The plan is tested by training and organizing mock drills. Every drill and actual event is evaluated to spot deficiencies and appropriate modifications are made to further improve the plan. Thus it is a continuous process. Preparedness at the community level involves construction of shelters, installation of warning devices, creation of back-up services (e.g. power, water etc.) and provision of disaster supplies kits for the victims.

3)Response: Response actions include rescue and relief measures carried out immediately before, during and immediately after a disaster to save lives, alleviate suffering and to reduce economic losses. The emergency services and first responders are activated in the disaster area –fire-fighters, police and ambulance crews. Hospitals and medical and paramedical professionals have an important role to play in immediate response whenever the event causes injuries or threat to lives of victims. At community level, it also involves early restoration of critical infrastructure to sustain life and health.

Three safety zones are created around the incident site – the hot zone is typically unsafe and only trained rescue workers with appropriate protective gear are allowed within this zone to carry out search and rescue operations. The adjacent zone is the warm zone. The victims are evacuated into the holding area located in the warm zone. Outside the warm zone is the cold area in which control station, medical response teams and ambulances are located.

While responding to the incidents due to hazardous material (Hazmats) involving chemical, biological, radiation or nuclear agents (CBRN), special care needs to be exercised as these can contaminate the environment and affect the rescue teams and other citizens. Personal protective equipment (PPE) must be used by the team visiting the warm zone for triage and medical aid. Usually, a designated area is created in the warm zone to ensure decontamination of the casualties afflicted by disaster involving CBRN. Primary (on site) decontamination is carried out by removal of contaminated clothing, spraying and washing.

The victims are sorted out (triage) to identify those with life threatening problems and are prioritized for transfer to the hospital. In CBRN cases, secondary (in hospital) decontamination is carried out by warm water and soap bath or sponging. The medical team should handle the victims only with PPE or if not, only after decontamination.
4)Recovery: In this phase the goal is to restore the community's systems and activities to normal and involves steps to clean debris, rebuilding of facilities and continued care for the displaced human and animal populations. This is mainly the domain of the public health workers but needs to be coordinated with the hospital care givers for rehabilitation of victims with injuries. Psycho-social rehabilitation is needed not only for the victims but also for their families, particularly of the deceased. Also, debriefing and counselling of health care workers involved in managing the mass casualty is highly desirable. Financial aid for reconstruction is also a part of recovery phase.

Disaster Management Planning:

The planning has to be at two levels – community plan and the individual hospital plan. Many non-governmental organizations (NGOs) do contribute to the disaster relief.
Community planning: Typically, it is at the level of government authority and has an important role in all four phases of the disaster.

The Government of India enacted the Disaster Management Act in 2005, which envisages the creation of National Disaster Management Authority (NDMA), headed by the Prime Minister, and State Disaster Management Authorities (SDMAs) headed by the respective Chief Ministers and District Disaster Management Authorities (DDMAs) headed by either the collector or the district magistrate or the deputy commissioner, to implement a holistic and integrated approach to disaster management in India. The National Disaster Response Force (NDRF) along with the Civil Defense, home-guards and fire services constitute a force trained in search, rescue and relief operations and are the first responders. When the disaster is difficult to handle locally or is located in a difficult terrain, armed forces are dispatched to aid in rescue and relief operations.

Hospital planning: Hospitals have a role in preparedness and response phases of the disaster management. Hospitals need to plan not only for a mass casualty situation (external disaster) but also for an incident like fire in the hospital (internal disaster).

Role of other stakeholders: Social and non-government organizations and corporate houses always contribute to disaster relief. They have important roles in pre-disaster phase for creating public awareness about disasters and preventive measures, during a disaster in collecting and distributing relief material and after a disaster in rehabilitation and reconstruction. The role of Corporate Social Responsibility (CSR) in disaster response can be useful from proactive disaster preparedness to immediate relief efforts, long-term recovery, collaboration, community engagement, and sustainable development, CSR initiatives can make a significant difference in building stronger communities and fostering resilience during times of crisis. Media has an additional role in disseminating correct information and in establishing communication.

Integration of Stakeholders:
Effective integration involves working together, collaborative action, shared capacity, and strong relationships. Strategies for effective integration are enhancing leaders' credibility and capability, facilitating community participation in decision-making and in disaster response activities, improving disaster information availability and accessibility, increasing disaster response fund, providing emergency management training for citizens, improving collaborative decision making, improving emergency response functionality and developing/improving disaster risk management plans.

Management of Chest wall Injury & Surgical Fixation of Rib Fractures

Dr. Sanjai Shah
M.S.,D.N.B.(Gold medalist)
F.N.B. (TRAUMA-CARE,MUMBAI)
Course Director & Faculty: ATLS, India

Rib fractures are common Thoracic Skeletal Injuries occurring in about 10 % patients admitted to trauma centre suggesting a severe chest injury. Rib fractures lead to major consequences like severe pain, immobilisation of area of chest wall and hence impaired breathing. Due to this, patient end up developing complications like atelectasis, increased pulmonary infection, sepsis, decreased pulmonary function, respiratory failure and thus prolonged hospitalisation. Studies have shown that there is linear relation of number of ribs fractured with undesired outcomes. Flail chest, a form of chest wall injury in which adjacent ribs are fractured at two or more places leading to a part of chest wall moving independently and paradoxically to the rest of the chest wall. This results in distortion of stability and normal respiratory mechanics of the chest. These patients often require support of Bipap or mechanical ventilation. Mortality rate in patients with flail chest is high (33%). Rib fractures have higher contribution to prolonged disability than what is expected – there is prevalence of chronic pain in 22% and disability in 53 % of patient with rib fractures at 6 months. Traditionally such patients are managed conservatively with multimodal analegesia, mechanical ventilation as per need, encouraging frequent coughing and expectoration, frequent spirometry and adequate chest physiotherapy. With time, availability of better technology for fixation of fractured rib has significantly changed the management to give better clinical outcomes for patients.

The management of patients of multiple Rib fractures and Flail Chest with Surgical Rib fixation leads to decreased pain, decreased oxygen and ventilation requirement, decreased rate of pulmonary infections, early initiation of mobilisation, shorter hospitalization, better pulmonary function preservation and early return to normal routine as compared to the conservative management.

INTRODUCTION

There are 12 pairs of ribs in the body. Ribs 1-7 attach posteriorly to the spine and anteriorly to the sternum while ribs 11 and 12 are floating and mostly mobile. These floating ribs are less susceptible to fracture due to their mobility. Ribs 1-3 are also less susceptible to fracture as a result of anatomical protection from the scapula, clavicle, and soft tissue. However, fractures to these ribs are associated with mediastinal injury, damage to the ascending aorta, and overall increased mortality. Most common blunt thoracic injuries result in fractures to ribs 4-10. Severe rib fractures can be associated with intrathoracic injuries and intraabdominal injuries depending on the location and distribution of fractures. Physical exam findings in patients with severe rib fractures typically show ecchymoses over the fracture site, focal tenderness, pain with inspiration, and bony crepitus. Many patients will also report clicking sensations and movement with deep inspiration.

Flail chest injuries are patients with segmental fractures of more than 3 ribs consecutively resulting in paradoxical movement with respiration, i.e. moving inwards while inspiration and outwards during expiration. Standard plain chest radiography is always obtained in the initial evaluation of chest trauma. Plain radiographs can visualize some but not all rib fractures and as a result often underestimate the true number of fractures. Two-dimensional computed tomography (CT) scans are more sensitive in picking up rib fractures and 3D CT scans are also beneficial in defining the characteristics of the fracture as well as for operative planning.

Conservative management of severe rib fractures is centred on proper pain control and pulmonary care. Patients with these injuries tend to decrease their inspiratory effort and minimize chest wall motion due to severe pain. The goals of pain control include increasing the patient's tolerance for deep breathing and coughing in order to clear pulmonary secretions. Many protocols utilize a scheduled administration of intravenous paracetamol, acetaminophen coupled with a demand-only opioid. Regional anesthesia through epidural infusion, muscle plane blocks and intercostal nerve blocks can be beneficial but are largely underutilized for rib fractures.

Pulmonary care and support are aimed at preventing intubation. Common care includes volume expansion through incentive spirometry, encouraging deep breathing, and coughing. Each of these volume expanding techniques is aimed at reducing atelectasis, or collapsing of the alveolar sacs, which commonly occurs in rib fracture patients and is associated with an increased risk of pneumonia and hypoxia. Increasing the vital capacity by 10% has been shown to be associated with a 36% reduction in the development of pulmonary complications in patients with multiple rib fractures.

Often times this volume expanding measures are limited by chest wall pain, thus adequate pain control is essential in order to optimize pulmonary status. Many times patients do not improve with pulmonary care targeted at volume expansion. One requires to initiate non-invasive positive pressure ventilation as a last effort to avoid intubation, although progression to mechanical ventilation is not that uncommon. Research shows that 59% of flail chest patients required mechanical ventilation after initial pulmonary care and pain control measures. The requirement for intubation in these patients can range from poor pain control, inadequate respiratory therapy, or underlying pulmonary pathology such as pulmonary contusion. Other conservative measures aim to limit the movement of the severe rib fractures through various stabilization techniques that contribute to pain control. Surgical rib fixation for severe rib fractures varies in timing, approach, and materials utilized.

Earlier surgical interventions are preferred in these patients as a means to prevent progression to mechanical ventilation. The approach depends on the location and number of rib fractures. The patient's site of pain, the degree of rib displacement, presence of a flail segment, and the number of surgical incisions dictates the positioning of the patient and how many ribs will be fixated. In addition, ribs 4 through 9 are responsible for a majority of chest wall movement and are thus preferred for fixation. The materials used in the surgery are Titanium 2.4 mm plates and screws of 10 mm to 14 mm size which are locking screws. These plates are either pre contoured to fit the curvature of the ribs or can be contoured intra operatively by surgeon manually using instruments. This approach requires the use of bicortical screws to secure the plate preferably 3 screws on either side of fracture after proper reduction.

REVIEW OF LITERATURE:

Flail chest and traumatic rib fractures are common injuries but difficult to study in a randomized controlled trial due to the presence of other injuries. As a result, there are very few trials that directly compare the outcomes from two forms of therapy. The three randomized controlled trials discussed below directly compare surgical rib fixation with varied interpretations of conservative management in patients with flail chest. One study evaluates the use of surgical rib fixation in cases with non-flail chest patients that have rib fractures not fully healed. Other non-randomized controlled trials were reviewed to provide more insight into the indications and techniques of surgical rib fixation.

Despite the high prevalence of these injuries in trauma patients, treatment options are both controversial and limited in number.

Even with the frequency of these injuries there are few international guidelines or clinical indications for when surgical fixation can be properly implemented. Reasons for this include insufficient understanding of specific surgical options, limited clinical research, as well as disciplinary boundaries for which specialties should treat these patients. More research is currently being conducted on this topic which will contribute to a better understanding of the potential of surgical fixation in patients with multiple and severe rib fractures. The purpose of this article is to summarize and analyze the existing evidence and draw on personal experience in treating rib fractures to determine the most effective approach for these patients.

Treatment Options:

The management of rib fractures can be divided into two broad categories. First one is Non operative management including medical management with Bipap or Invasive ventilation with physiotherapy &pain management and other is Surgical management where patient undergoes Rib fixation with plates and screws.

Pain management:

Pain control is another reason for surgical rib fixation in patients with severe rib fractures. In addition to pulmonary contusions, pain is also considered one of the most significant ill effects of a flail chest injury. Pain in these injuries greatly reduces respiratory compliance. For example, the pain from severe rib fractures limits the ability to cough or clear secretions from lungs and thus, potentially increases the risk of atelectasis and pneumonia. Treatment of pain usually consists of NSAIDs, intercostal nerve block, patient-controlled analgesia, different muscle plane blocks and lastly an epidural analgesia. Surgical rib fixation has been shown to substantially decrease patients' pain. In fact, pain reduction is now a major indicator for the surgery. A meta-analysis from 2012 found that surgical rib fixation greatly alleviated post-operative pain as well as improved quality of life and long-term respiratory status in patients with multiple non-flail rib fractures. Other studies have found a reduction in chronic pain after long-term follow up in patients with rib fixation procedures. Surgery isn't always indicated immediately after the injury and these patients should be medically optimized prior to surgical intervention to ensure the best outcome.

There are limitations of evaluating pain in patients and making clinical decisions based on pain alone. Because pain is subjective, accurately translating and comparing pain scales or outcomes formed from reports of pain can be difficult to replicate across different studies. Further standardization of pain scales and objective evaluations of pain is required to fully evaluate the effectiveness of these procedures. In addition, not all studies have found an improvement in pain management with surgical fixation. In addition, the rib fixation procedure also induces its own pain. The benefits of potential pain relief versus the pain induction from the procedure need to be considered when deciding if the procedure is the best option.

Surgical Fixation

Goal is to find a balance between surgical damage and the benefit associated with fixation. Multiple factors affect the success of the surgery including the location, site of the fractures, patient's individual potential for response to surgery, and surgical materials. Lateral fractures tend to be more painful, followed by dorsal and then anterior fractures. Lower and lateral ribs have the largest range of motion and thus the pain effect is most noticeable, making these rib fractures more amenable to surgery. The degree of the fracture also needs to be considered; fracture displacement of greater than one rib cortical diameter tends to induce severe pain and the American Association for Surgery of Trauma recommends fixation for these injuries. Specific ribs are better candidates than others for fixation. Ribs 1-3 are deeper, less mobile and difficult to expose which makes them not suitable for rib fixation. In addition, there is significant risk in exposing these with regards to damaging the neurovascular bundle. Ribs 11 and 12 are floating and located near the liver and spleen and thus are not great candidates for fixation. Ribs 4 to 10 are considered ideal for surgical fixation because they are largely responsible for the stability of the thorax. Surgical fixation of displaced posterior fractures on ribs 5-9 is highly recommended due to the potential of a fractured fragment piercing and dissecting the aorta or IVC.

As with many procedures, the age of the patient significantly contributes to surgical candidacy and potential for improvement. The long-held view was that surgery was too high risk for patients older than 65. However, the authors of this article believe that elderly patients may receive more benefit from surgical fixation of rib fractures then younger patients. The pain from multiple rib fractures causes respiratory insufficiency so rib fixation would significantly alleviate pain and improve respiratory status in these elderly patients. According to a study from 2012, multiple rib fractures were associated with a greater mortality in patients over 65 with blunt chest wall trauma. In Another study from 2017, patients older than 65 who had suffered multiple rib fractures and divided them into a surgical and non-surgical group. The study found a significant reduction in mortality, improved respiratory function, and accelerated return to daily activities in the elderly patients treated with surgical fixation. Thus, elderly patients may benefit more than younger patients after surgical fixation for multiple rib fractures.

Surgical approach and materials utilized also have an impact on the success of the procedure. Surgeons need to be selective in which fractures they choose to fixate. Plating each fracture will reduce the movement of the chest wall and result in more post-surgical discomfort and pulmonary complications. As a result, only select fractures should be fixed to optimize stabilization of the chest wall and achieve pain control. The materials are usually titanium plates and screws, intramedullary device, stainless steel wires, Judet plates,. Absorbable materials are also available and tend to be more elastic, durable, and do not require a second operation for removal.

Choosing the right materials depends on patient characteristics and goals of the operation and affordability. The ideal materials should have the following characteristics: good histocompatibility, no rejection reaction, plasticity, the ability to be shaped according to the anatomical shape of the ribs, sufficient strength, and biomechanical elasticity that can meet the elasticity and compliance requirements of the thorax itself. In the long run, absorbable internal fixation materials are the main direction for future development:

Indications for Surgical Fixation of Rib Fractures:

1. Chest injury with multiple rib fractures – 3 ribs or more with age more than 55 years,
2. Flail chest or significantly displaced rib fractures > 2cm.
3. Patients were diagnosed by radiological evidence of multiple rib fractures who required thoracotomy for other indication like massive hemothorax or persistent air leak, clotted hemothorax etc.
4. Patients with multiple rib fracture and required Bipap or ventilator in ICU Or failure to wean off.
5. Intractable pain despite multimodal pain management

Current Evidence:

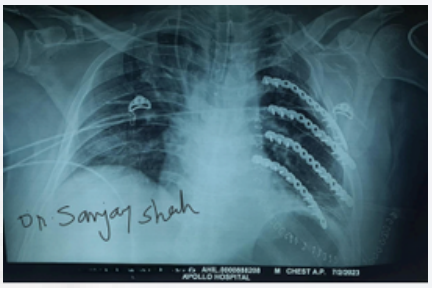
- Flail chest(≥3 consecutive segmental rib fractures) (Level 2b, Grade B)
- Multiple severely displaced bicortical rib fractures (Level 4, Grade C)
- Multiple rib fractures who fail NOM (Level 5, Grade D)
- Pulmonary contusion is not an absolute contraindication but SSRF shall be considered on individual case base (Level 5, Grade D)
- TBI is not an absolute contraindication but SSRF shall be considered on individual case base (Level 5, Grade D)
- Patients for SSRF should undergo HRCT with 3D bone recon. (Level 2c, Grade B)
- Rib fracture of 1,2,11,12 & fracture with 2.5 cm of transverse process shouldn't be fixed (Level 5, Grade D)

Surgical Approach:

Depending on site of multiple rib fractures and numbers of ribs required to fix, one can choose anterior, lateral or posterior approach for exposure. Patient can be kept in supine for anterior, lateral for lateral & posterior approach. Incision line can be horizontal preferably but one can have oblique or vertical for underlying fractured ribs. HRCT with 3D reconstruction preoperatively for each patient undergoing for SSRF is must for preoperative planning and exposure decision.

HRCT with 3 D recon showing multiple displaced posterior and lateral rib fractures causing flail chest injury

Intraoperative image of lateral rib fractures and after fixation.



Post operative image of x ray chest after Left Posterior ribs fracture fixation

Quality of Life

Quality of life should be a very important consideration in deciding whether to pursue surgical fixation of rib fractures or not. These injuries tend to have substantial impacts on long-term quality of life, including the ability to return to work, able to independently walk, run or going up and down on staircase as well as chest wall deformities. A retrospective study from Australia found that patients who suffered multiple severe rib fractures and were only medically managed had a significant reduction in quality of life. Only 50% of the patients were able to return to work within six months after their injury. Other studies have found a faster return to work with surgical fixation compared to medically managed patients.

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Designing Effective Local Protocols for Massive Transfusion

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Massive transfusion is defined as

- replacement of >1 blood volume in 24 hours, or
- >50% of blood volume in 4 hours (adult blood volume is approximately 70 mL/kg), or
- in children: transfusion of >40 mL/kg (blood volume in children over 1 month old is approximately 80 mL/kg)

A Massive Transfusion Protocol should be used in critically bleeding patients anticipated to require massive transfusion

GOALS IN MANAGEMENT OF MASSIVE TRANSFUSION

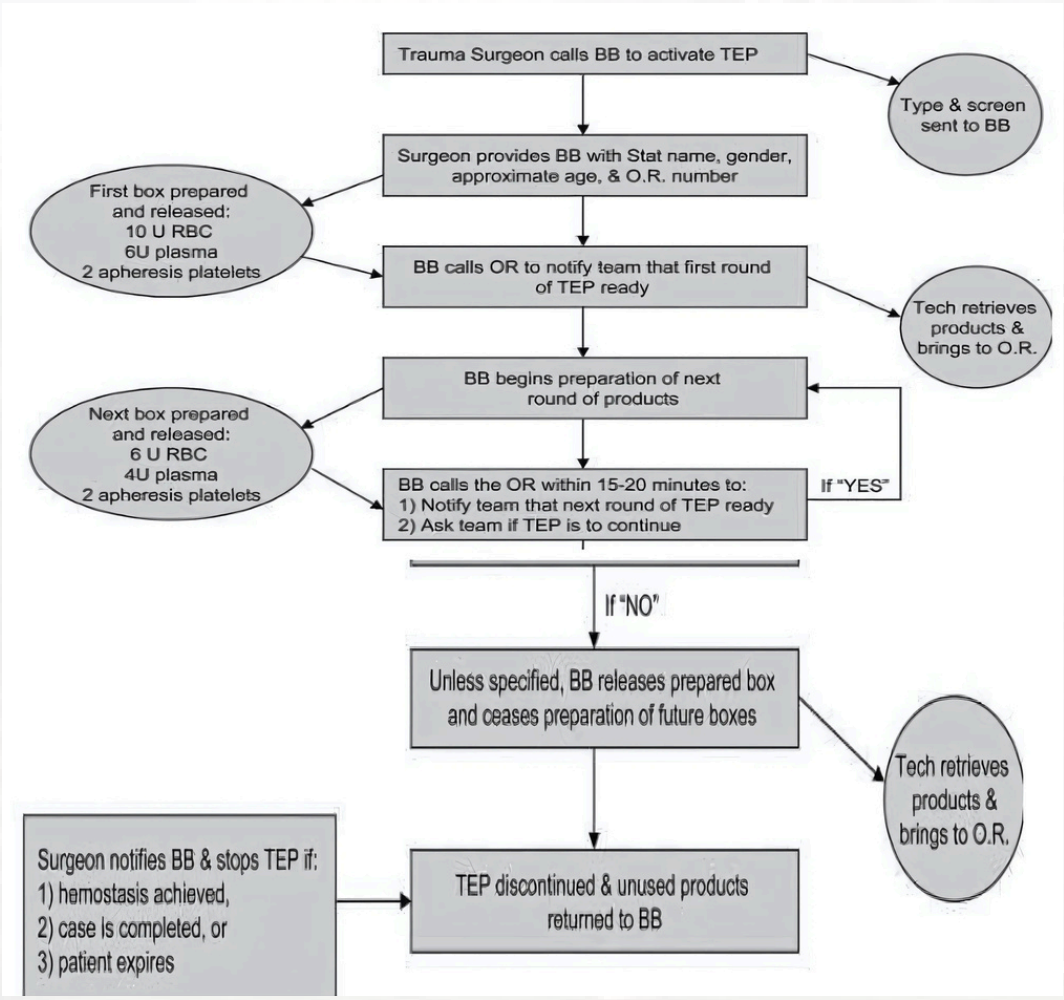
- early recognition of blood loss
- maintenance of tissue perfusion and oxygenation by restoration of blood volume and haemoglobin (Hb)
- arrest of bleeding in combination with use of early surgical or radiological intervention, and
- judicious use of blood component therapy to correct coagulopathy

THERAPY INDICATIONS IN MASSIVE TRANSFUSION

- Check these parameters early and frequently (e.g. every 30-60 minutes while massive transfusion is ongoing)

Parameters
Values to aim for
Temperature
>35 °C
Acid-base status
pH >7.2, base excess <–6, lactate <4 mmol/L
Ionised calcium (Ca)

>1.1 mmol/L
Haemoglobin (Hb)
This should not be used alone as transfusion trigger; and, should be interpreted in context with haemodynamic status, organ & tissue perfusion.
Platelet (Plt)
≥ 50 x 10^9 /L (>100 x 10^9 if head injury/ intracranial haemorrhage)
PT/APTT
≤ 1.5x of normal
Fibrinogen
≥ 1.0 g/L
MASSIVE TRANSFUSION PROTOCOL TEMPLATE



PROBLEMS WITH MASSIVE TRANSFUSION

Risks and complications of large volume resuscitation with blood products

volume overload (careful monitoring of filling pressures, response to volume, diuresis etc)

over-transfusion (monitor Hb regularly, titrate according to needs)

hypothermia (monitor temp, use fluid warmers and other measures to reduce heat loss)

dilutional coagulopathy of clotting factors and platelets (regular and early monitoring of coagulation, involvement of haematology for replacement therapy)

Transfusion related acute lung injury (consider use of filters, leukodepletion)

excessive citrate causing metabolic alkalosis and hypocalcaemia (monitor pH and ionised calcium, replace calcium as necessary)

hyperkalaemia (use of younger blood, monitor regularly, may require specific therapy)

disease transmission (use of products only on a needed basis only, standard blood banking precautions etc)

If uncross-matched / O neg blood

- Haemolytic disease of newborn if RhD mismatch
- Difficulty with cross-matching future blood product
- Difficulty with matching solid organs

Logistical issues

- distractions resulting in not controlling source of haemorrhage, and
- risks of hurried cross-checking and incompatibility (allocation of sufficient resources and personnel, standard programs in place to facilitate process and anticipate needs)
- other problems including loss of identity, crossmatching issues, loss of baseline haematological information etc)

Usual transfusion reactions and problems

- TRALI / TACO
- Acute / delayed haemolytic transfusion reaction
- Non-febrile haemolytic transfusion reaction
- Bacterial / viral infection
- Anaphylaxis if IgA deficient
- GVHD
- Storage lesion effects

Military Civil Collaboration:
A Holistic Arena for Trauma Care

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Introduction

Military civil collaboration (MCC) in trauma care represents a synergistic approach that combines resources, expertise, and methodologies from both military and civilian sectors. This collaboration is essential for enhancing trauma care systems, especially in times of crisis or disaster.

The Importance of Collaboration

1. Resource Optimization: Military and civilian facilities can share resources, including medical personnel, equipment, and infrastructure, thereby improving the overall capacity to handle trauma cases.

2. Diverse Expertise: Military medical personnel often have experience in high-pressure environments, while civilian practitioners may have expertise in long-term care and rehabilitation. This blend enhances trauma care effectiveness.

3. Rapid Response: Military units are trained for rapid deployment and can provide immediate assistance in disaster situations, complementing civilian emergency services.

Framework for Collaboration

1. Joint Training Programs: Regular training sessions that involve both military and civilian medical staff can ensure readiness and familiarize teams with each other's protocols.

2. Integrated Command Structures: Establishing unified command centers during emergencies allows for coordinated efforts and efficient resource allocation.

3. Data Sharing and Research: Collaborating on trauma research can lead to better treatment protocols and outcomes. Shared data can inform public health strategies and emergency preparedness.

Challenges and Solutions

1. Cultural Differences: Bridging the gap between military and civilian cultures requires mutual respect and understanding. Joint training and exercises can help foster this relationship.

2. Legal and Ethical Considerations: Clear agreements and guidelines must be established to navigate the legal complexities of operating in civilian environments.

3. Sustainability: Long-term partnerships should be cultivated through ongoing dialogue, training, and shared goals to ensure the collaboration remains effective and adaptive.

Conclusion

Military civil collaboration in trauma care presents a holistic approach that enhances preparedness and response capabilities. By leveraging the strengths of both sectors, communities can significantly improve trauma care outcomes, ultimately saving lives and reducing the impact of crises.

Trauma Induced Coagulopathy

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Major trauma (MT) is one of the leading causes of mortality and morbidity globally and the leading cause of death in people younger than 40 years. Annually, traumatic injuries cause approximately 6 million deaths globally. Conventionally, trauma is defined as severe when the patient's injury severity score (ISS) exceeds 15. ISS is an assessment system that assigns a number based on the severity and location of the different injuries caused by trauma.

Post-traumatic hemorrhage is the most frequent cause of death in victims of severe trauma, in about 40% of cases. This is caused by two main mechanisms, but they can intertwine and present simultaneously.

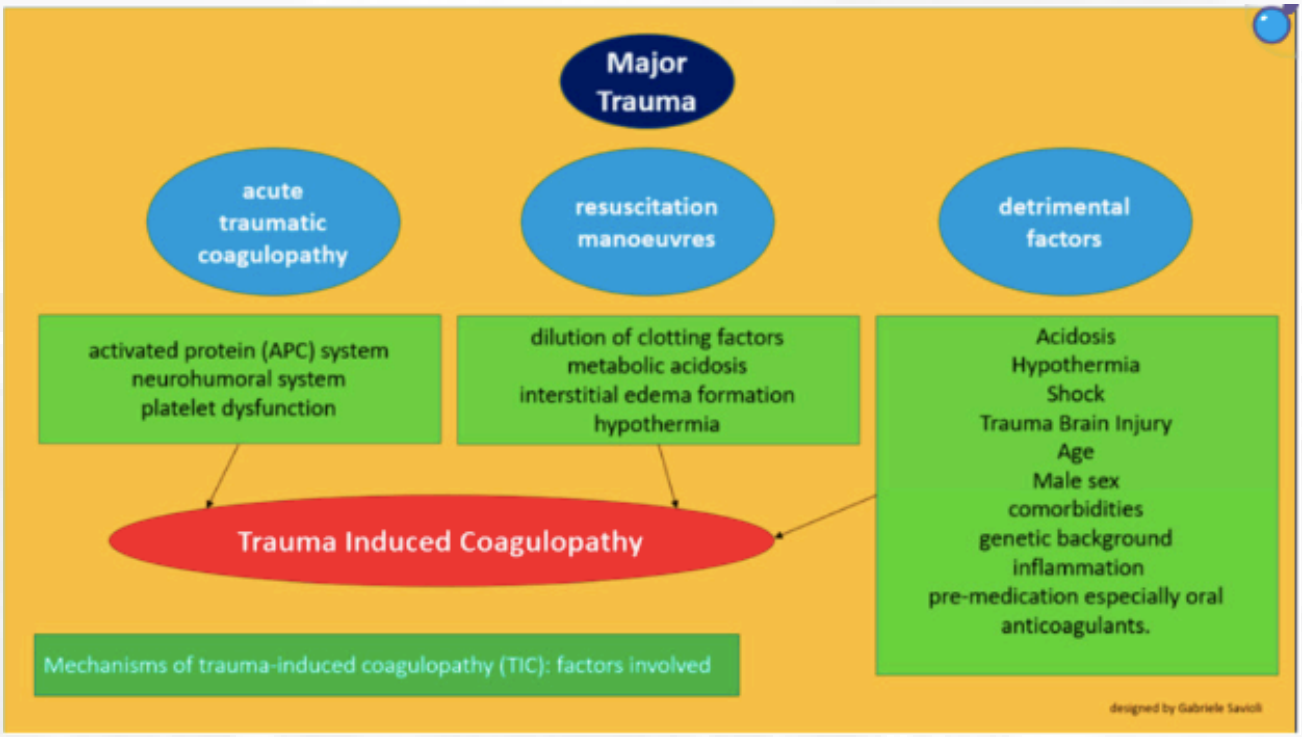
The first mechanism is bleeding caused via direct injury of blood vessels, which involves hemorrhage that is dependent on physiological or anatomic factors. These include the hemodynamic state of the patient, in particular SBP, the arterial or venous nature of the affected vessel, and the caliber of the vessel. In cases of injury of large-caliber arterial vessels, we can witness profuse hemorrhage with shock in an extremely short period, even before the arrival of the rescue crew.

Meanwhile, the second mechanism is secondary bleeding from the development of trauma-induced coagulopathy (TIC), which involves secondary bleeding from a widespread microvascular hemorrhage that is not localized to the site of the trauma.

TIC can be defined as a condition of endogenous hypercoagulation observed in the immediate post-traumatic period, that is, within 1 h of trauma. It is characterized by widespread microvascular hemorrhage opposed to events localized exclusively to the site of trauma.

Approximately 30% of patients with MT develop TIC upon arrival to the emergency department (ED). Although it was once believed that TIC begins hours or even days after the traumatic event, it is currently clear that it begins at the moment of trauma. Approximately 40% of trauma deaths result from bleeding, and 10% of these events appear avoidable

For years, it was considered that TIC was solely attributable to the dilution of clotting factors caused by substantial fluid administration or massive transfusion, which further complicated the development of acidemia and hypothermia, which, together with TIC, contribute to the formation of the “lethal triad” and thus further aggravate the clinical picture. With the increasingly greater body of research on the pathophysiological mechanisms of TIC, we can schematically (Figure 2) claim that TIC consists of the following variables:



The early identification of coagulopathy in patients with trauma is important, as this can lead to better management and overall improvement in outcomes. The most commonly used tests are traditional clotting tests (aPTT and PT), along with the platelet count and fibrin monitoring. Originally, TIC was defined as an increase in clotting plasma variables such as the aPTT, PT, and international normalized ratio. Emerging evidence suggests that whole-blood viscoelastic tests, such as thromboelastography or rotational thromboelastometry, may better identify coagulopathy and the stage, type, and location of TIC.

High ISSs are associated with increases in the severity of TIC and risk of poor outcomes.Viscoelastic tests have also been revealed to prevent inappropriate hemotransfusion and hemostatic infusion of blood derivatives to non-coagulopathic patients . In addition, the severity of TIC may vary with ongoing treatment, and viscoelastic tests are able to record these changes. Current hematochemical tests (PT, aPTT, fibrinogen, platelets), despite having the advantage of being universally available, require a long time for analysis. In addition, PT and aPTT are only useful for analysis in the early stages of clot formation, and they do not provide a complete view of actual pro-coagulant and anticoagulant activity, in particular on platelets, as well as hyper fibrinolytic activity.

International guidelines state that the management of bleeding trauma should follow the principle that the normalization of coagulation parameters improves outcome. It is reasonable to suspect TIC to affect severely injured patients, and therefore a “best guess” treatment should be initiated; during resuscitation a goal-driven approach is considered optimal.

Surgical management of liver and Splenic Trauma

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Abstract

INTRODUCTION
The liver and spleen are the most commonly injured abdominal organ. Majority of hepatic injuries are minor category and heal spontaneously with nonoperative management, which consists of closed observation and fallow up, the adjunctive use of arteriography and embolization.

However, approximately 14 percent of patients with hepatic injury will require surgical intervention [1].

The posterior portion (Segment VII & VIII) of the right lobe is most common site of hepatic injury in blunt trauma, spleen also injured fallowing blunt trauma abdomen.

Isolated liver injury found in less then fifty percent of abdominal trauma, in 45 % cases it is associated with splenic injury and rib fracture in 33 % of cases.

Liver injury is second most common injured organ in penetrating abdominal trauma after bowel. Motor Vehicle Crash is the most common injury mechanism which produces liver and spleen injury.

Classification of Liver and Spleen Trauma

The spleen is an extremely vascular organ and consequently splenic rupture can lead to large intraperitoneal hemorrhage, rapidly leading to fatal hemorrhagic shock.
Traumatic injuries of the spleen are either penetrating or blunt management in recent years has become largely nonoperative.

Table 3 WSES Spleen Trauma Classification for adult and pediatric patients

	WSES class	Mechanism of injury	AAST	Hemodynamic status[a, b]	CT scan	First-line treatment in adults	First-line treatment in pediatric
Minor	WSES I	Blunt/penetrating	I-II	Stable	Yes + local exploration in SW[d]	NOM[c] + serial clinical/laboratory/ radiological evaluation Consider angiography/ angioembolization	NOM[c] + serial clinical/laboratory/ radiological evaluation Consider angiography/ angioembolization
Moderate	WSES II	Blunt/penetrating	III	Stable			
	WSES III	Blunt/penetrating	IV-V	Stable		NOM[c] All angiography/angioembolization + serial clinical/laboratory/ radiological evaluation	
Severe	WSES IV	Blunt/penetrating	I-V	Unstable	No	OM	OM

WSES liver trauma classification

	WSES	AAST	Hemodynamic
Minor	WSES grade I	I–II	Stable
Moderate	WSES grade II	III	Stable
Severe	WSES grade III	IV–V	Stable
	WSES grade IV	I–VI	Unstable

Liver trauma: WSES 2020 guidelines

Indication of Surgical management for Liver and spleen Injury

1. Hemodynamically unstable and non-responder patients (WSES IV) (GoR 2A)
2. Persistent arterial bleeding require multiple transfusions to maintain hemodynamic stability (GoR 2A)
3. Signs to peritonism / Evolving peritonism on serial abdominal examinations(SAE) (GoR 2A)
4. Failed Angioembolization with haemorrhage
5. Associated Bowel Injury

What is Haemodynamic unstability ?

Hemodynamic instability is considered as the condition in which SBP < 90 mmHg, altered level of consciousness, admission BE > -5 mmol/L or Transfusion requirement of at least > 4 units within first 8hr, and transient or non-responder to resuscitation.

SURGICAL MANAGEMENT

When surgery is required, a systematic approach is used to arrest bleeding while conserve the hepatic parenchyma, hepatic resection is reserved only for severe injuries. The use of damage control techniques during the initial laparotomy is the preferred approach, specifically perihepatic packing, reduces the extent of subsequent surgical procedures.

The management of solid organ injuries (Liver and spleen) has become progressively less operative over the past two decades. The need for prior operative management of liver and spleen injury are determined by the patient's clinical condition, not the extent or grade of injury (3).

According to the 2022 World Society of Emergency Surgery consensus (WSES 2022) document, splenic artery embolization is currently recommended as the primary intervention in hemodynamically stable patients presenting with arterial blush on CT scans, irrespective of injury severity.[6]

The main goal of surgery is to arrest haemorrhage while preserving liver tissue, in which 4 Ps of Surgical Management are used and effective for many decades and debridement of liver tissue is preferred over hepatic resection .

Angioembolization is a useful tool in case of persistent arterial bleeding after non-hemostatic or damage control procedures (GoR 2A).

Resuscitative endovascular balloon occlusion of the aorta (i.e., REBOA) may be used in hemodynamically unstable patients as a bridge to other more definitive procedures for hemorrhage control (GoR 2B).

Post operative Polyvalent vaccination should be given In most of the time to splenectomised patient and even in delayed planned splenectomy it is given before surgery to prevent Overwhelming post spleenectomy infection (OPSI).

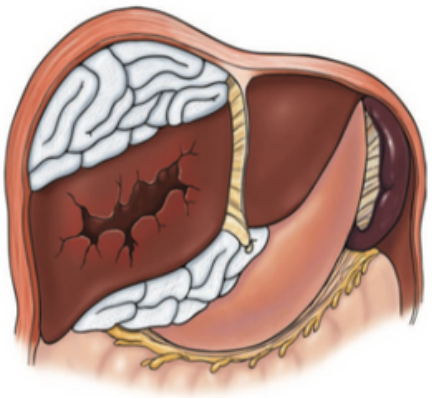


Fig: Perihepatic Packing

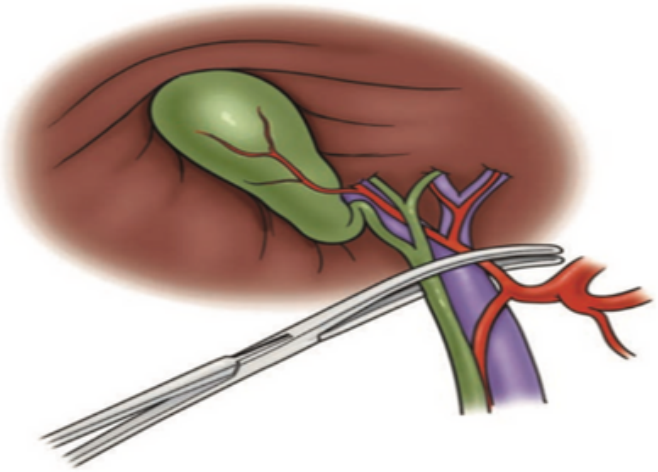
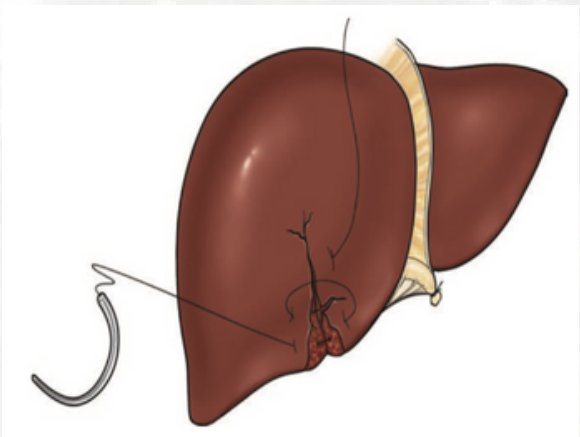


FIGURE 43 The Pringle Maneuver
Using a noncrushing (vascular) clamp, the entire porta hepatis can be occluded to decrease bleeding from an injured liver. This is a temporary occlusion of the portal vein, hepatic artery, and common bile duct. It is accomplished by palpating the foramen of Winslow and precisely placing the clamp on only the desired structures.



Packing: Laparotomy pads are used to pack all four quadrants of the liver. This allows the anesthesiologist to catch up with resuscitation.

Suture ligation: A bleeding vessel is identified and directly sutured using absorbable suture.

Omentum patch: A patch of omentum can be used to fill the gap created by a laceration.

Pringle maneuver: A noncrushing clamp is applied through the foramen of Winslow to control bleeding.

Perihepatic packing: This technique is used during the initial laparotomy to reduce the extent of subsequent surgical procedures. Resuscitative endovascular balloon occlusion of the aorta (REBOA): This may be used in hemodynamically unstable patients.

Angioembolization(AG/AE):(GoR 2A) used in hemodynamic stable patients

- Persistent arterial bleeding
- Delayed haemarrhage
- Hepatic Artery Pseudoaneurysm

Hepatic artery Ligation

Debridement/Hepatic resection: Major hepatic resections should be avoided at first and only considered in subsequent operations, in a resectional debridement fashion in cases of large areas of devitalized liver tissue done by experienced surgeons (GoR 2B)
Liver transplant

What is the approach/ Technique of Surgery?

Surgery is reserved for only Severe Liver trauma (WSES IV ,AAST I-V – Unstable)patients.

Damage Control Surgery (DCS):(GoR 2A) is the preferred approach for the management of case over the single stage definitive surgery ,hepatic artery ligation needs to be done for bleeding hepatic artery.

Angioembolization(AG/AE) are preferred approach now a days if facility are available in trauma centre using endovascular technique.

Role of Laparoscopy: (GoR 2B) is currently used as bridge procedure in haemodynamic stable case to diagnose the site of haemorrhage, nature of collection in delayed cases in peritoneal cavity and lavage and guided drainage,it is also used to minimize the invasiveness of surgical intervention and tailor the procedure to the lesion. Grade IV and V injuries in stable patients can also be managed NOM

Conclusion

DCS is preferred over definite procedures for the management of liver injury. The management of spleen trauma must be multidisciplinary and must keep into consideration the physiological and anatomical derangement together with the immunological effects. Patients with hemodynamic stable and absence of other abdominal organ injuries requiring surgery should undergo an initial attempt of NOM irrespective of injury grade.

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Conflict of Intrest : None

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The Bile Crisis:
Understanding the Challenges of Cholangitis

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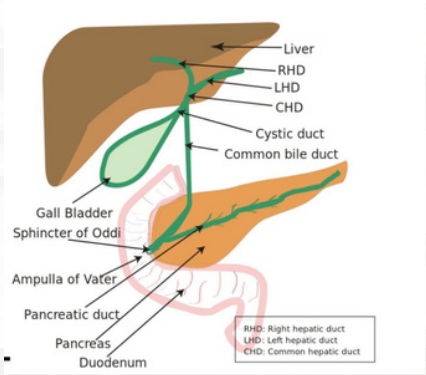
Introduction to Bile and Its Functions- Bile is a digestive fluid produced by the liver. It aids in the digestion and absorption of fats. Bile also helps eliminate waste products from the body. Composed of bile salts, cholesterol, bilirubin, and electrolytes. Proper bile flow is essential for maintaining digestive health. Disruptions can lead to serious liver and digestive issues. Understanding bile's role is crucial for diagnosing related conditions. Cholangitis is an inflammatory condition affecting the bile ducts. It can be classified into acute and chronic forms.



Anatomy of the Biliary System-
The biliary system consists of the liver, gallbladder, and bile ducts. The liver produces bile, which aids in fat digestion. Bile is stored in the gallbladder until needed for digestion. The bile ducts transport bile from the liver to the small intestine. Any obstruction in this system can lead to cholangitis. The common bile duct is particularly susceptible to blockages. Understanding this anatomy helps in diagnosing and treating cholangitis. Imaging studies often focus on visualizing these structures. A healthy biliary system is essential for proper digestion.

Causes of Cholangitis-

- Acute Causes:
  - Gallstones: The most common cause; stones can block bile flow.
  - Tumors: Malignancies can obstruct bile ducts, leading to inflammation.
  - Infections: Bacterial infections can arise from stagnant bile.
- Chronic Causes:
  - Autoimmune Diseases: Conditions like primary sclerosing cholangitis (PSC) affect bile ducts.
  - Long-term Inflammation: Chronic irritation from various sources can lead to cholangitis.
  - Congenital Anomalies: Structural issues present at birth may predispose individuals

Pathophysiology of Cholangitis- Cholangitis begins with an obstruction in the biliary tree. This obstruction increases intra-biliary pressure, leading to bile stasis. Stagnant bile becomes a breeding ground for bacteria, causing infection. The inflammatory response further damages the ductal epithelium. Cytokines and other mediators are released during inflammation. This cascade may lead to systemic symptoms like fever and chills. If untreated, it can progress to sepsis or liver failure. Understanding this process aids in developing targeted treatments.

Symptoms of Acute Cholangitis

- Fever: Often presents as a high-grade fever due to infection.
- Jaundice: Yellowing of the skin and eyes due to bilirubin buildup.
- Abdominal Pain: Typically located in the right upper quadrant (RUQ).
- Nausea/Vomiting: Common accompanying symptoms due to digestive upset.
- Chills: Often experienced alongside fever as part of systemic infection response.
- Altered Mental Status: Can occur in severe cases due to sepsis or dehydration.
- Fatigue: General malaise and weakness are frequently reported by patients.
-

Symptoms of Chronic Cholangitis

- Fatigue: Persistent tiredness that may not correlate with activity levels.
- Pruritus (Itching): Caused by bile salt accumulation in the bloodstream.
- Jaundice: May develop gradually as liver function declines over time.
- Weight Loss: Unintentional weight loss may occur due to malabsorption issues.
- Abdominal Discomfort: Chronic pain or discomfort in the RUQ may be present but less severe than acute cases.

Diagnosis of Cholangitis-

Clinical Presentation: Initial assessment based on symptoms like fever and jaundice.

Laboratory Findings-

- Elevated Alkaline Phosphatase Levels: Indicative of cholestasis or biliary obstruction.
- Elevated Bilirubin Levels:
  - Direct bilirubin levels increase due to impaired excretion by obstructed ducts.
- Leukocytosis:
  - Increased white blood cell count often reflects infection or inflammation.
- Blood Cultures:
  - May reveal bacteria such as E. coli or Klebsiella in cases of bacterial cholangitis.
- Liver Function Tests (LFTs):
  - Assess overall liver health; abnormalities suggest underlying pathology.

Imaging Techniques-

- Ultrasound:
  - First-line imaging; useful for detecting gallstones and biliary dilation.
- CT Scan:
  - Provides detailed cross-sectional images; helpful for identifying tumors or abscesses.
  - MRCP (Magnetic Resonance Cholangiopancreatography):
  - Non-invasive technique that visualizes biliary tree without contrast dye.
- ERCP (Endoscopic Retrograde Cholangiopancreatography):
  - Combines diagnostic imaging with therapeutic interventions like stone removal.
- X-rays:
  - Rarely used but may show calcified stones in some cases.
- Each imaging modality has specific indications based on clinical presentation and suspected complications.

Complications of Cholangitis-

- Biliary Septicemia:
  - Life-threatening condition resulting from bacteria entering the bloodstream.
- Liver Abscesses:
  - Infection can lead to localized collections of pus within the liver tissue.
- Pancreatitis:
  - Inflammation of the pancreas can occur if there's concurrent obstruction at the ampulla of Vater.
- Chronic Liver Disease:
  - Recurrent episodes can lead to scarring and cirrhosis over time.
- Timely intervention is crucial to prevent these serious complications from developing.

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Treatment Overview- Immediate management strategies focus on stabilizing the patient's condition. Antibiotic therapy should be initiated promptly upon suspicion of infection. Biliary drainage procedures are essential for relieving obstructions caused by stones or strictures. Supportive care includes fluid resuscitation and pain management strategies. Surgical intervention may be necessary in severe cases or if complications arise. Long-term follow-up is important for managing chronic conditions associated with cholangitis.

Antibiotic Therapy- Initial empirical therapy typically includes broad-spectrum antibiotics targeting common pathogens like E.coli and Klebsiella spp. Commonly used antibiotics include fluoroquinolones (e.g., ciprofloxacin) and carbapenems (e.g., meropenem). Antibiotic choice may be adjusted based on culture results if available. Duration of therapy usually lasts between 7–14 days depending on clinical response and severity of infection. Monitoring for signs of improvement or adverse reactions during treatment is essential. Early initiation significantly improves outcomes, especially in acute cases with sepsis risk.

Supportive Care- Fluid resuscitation is critical, especially if patients present with dehydration or septic shock symptoms. Electrolyte imbalances should be monitored closely; replacement therapy may be required based on lab findings. Pain management strategies include analgesics tailored to individual patient needs; opioids may be necessary in severe cases. Nutritional support should be considered if patients experience prolonged nausea/vomiting affecting oral intake. Monitoring vital signs regularly helps assess patient stability during treatment interventions.

Prognosis for Acute Cholangitis- Early recognition and treatment significantly improve prognosis for acute cholangitis patients. Mortality rates can be high without timely intervention; studies suggest rates up to 50% in severe cases untreated promptly. Complications such as septic shock are major contributors to poor outcomes. Patients who receive appropriate antibiotics and biliary drainage have favorable long-term outcomes. Risk factors like age, comorbidities, and severity at presentation influence prognosis. Regular follow-up care post-treatment ensures ongoing monitoring for potential recurrence. Management of Chronic Cholangitis- Management focuses on alleviating symptoms while addressing underlying causes. Regular monitoring through blood tests helps assess liver function over time. Medications like ursodeoxycholic acid may slow disease progression in specific conditions like PBC. Lifestyle modifications including dietary changes can improve quality of life.

Patients should be educated about warning signs indicating potential complications requiring immediate attention. Multidisciplinary care involving gastroenterologists, surgeons, nutritionists enhance overall management strategies.

Future Directions in Research- Future research will focus on personalized medicine approaches in cholangitis management. Investigating the microbiome's role in biliary health could lead to novel therapies. Studies will explore the long-term effects of various treatment modalities on patient quality of life. Research into biomarkers may facilitate earlier diagnosis and targeted therapies for cholangitis.

Conclusion- Cholangitis presents significant challenges that require timely diagnosis and intervention. Understanding its causes, symptoms, and treatments is crucial for healthcare providers. Early detection plays a pivotal role in improving patient outcomes and reducing complications. A multidisciplinary approach enhances management strategies tailored to individual needs. Ongoing research is essential for advancing knowledge and developing innovative treatments. Patient education empowers individuals to take an active role in their health management. Lifestyle modifications can significantly impact disease progression and quality of life. Collaboration among healthcare professionals fosters a comprehensive care environment for patients with cholangitis. Continued awareness and advocacy are necessary for addressing this condition effectively within healthcare systems globally. Together, we can work towards better understanding, prevention, and treatment of cholangitis.

Peripheral Vascular Trauma

Dr. Harshit Agarwal
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Vascular trauma remains a major challenge to the trauma surgeons practicing worldwide and is a major cause of limb loss and life loss. They account for about 1-2% of all trauma related injuries but account for about 20% of trauma related mortality. Further, peripheral vascular injuries predominate amongst vascular trauma accounting for 70-80% of all vascular trauma. This associated high mortality and morbidity levels are majorly due to delayed presentation, less experience of clinicians and delayed diagnosis.

The management of vascular trauma has oscillated between ligation and repair over the years. During the very initial years ligation was the norm. However, various great surgeons like Guthrie, Carrel and Murphy practiced and propagated arterial repair. But it was not until the Korean war that arterial repair was adopted as the treatment of choice. The history of arterial injuries cannot be completed without the mention of a landmark article by DeBakey and Simeone titled “Battle Injuries of the Arteries in World War II”. The article reviewed 2471 cases of arterial injury with only 81 undergoing repairs. They concluded that ligation was most common and repair was unlikely to be utilised in the future conflicts. However, there have been various landmark achievements in vascular injuries-

1. Development of triangulation technique of vascular repair by Guthrie and Carrel
2. Utilisation of Heparin to reduce thrombosis rates- Gordon Murray
3. Discovery of penicillin to reduce the infections
4. Recognition of blood transfusion
5. Availability of diagnostic modalities like angiography, duplex scans etc
6. Introduction of endovascular techniques in vascular trauma

Vascular injuries may be caused by penetrating or blunt mode of injury. In western world, penetrating injuries predominate while in India blunt injuries are higher in number.

Further, most common injured vessel is of lower limb in western world, while it is upper limb in India. Vascular injuries may be classified as Arterial or Venous. They may be also classified based on the type of injury like spasm, thrombus, laceration, artrio-venous fistula etc. For management of peripheral vascular injuries “Rule of 3” can be followed:

1. 3 clinical parameters to be evaluated during assessment:
    a. Haemodynamic status: This remains one of the most important clinical evaluation signs. Any patient who is Haemodynamically unstable due to PVI should directly go to Operation Room. Only haemodynamically stable patients proceed ahead for imaging.

1. Soft signs and hard signs: These signs are time tested and are an important part during initial evaluation of PVIs. However, they are more sensitive in penetrating injuries. While in blunt injuries, there sensitivity is less.

1. Ankle Brachial Index (ABI) or Arterial Pressure Index (API): Peripheral arterial injury in penetrating injuries can be excluded if ABI/API of >0.9. However, in blunt injuries additional imaging may be required even though physical examination and ABI may be normal.
2.

The above-mentioned clinical parameters can exclude arterial injury when used in combination. However, a normal ABI or negative Color doppler cannot independently exclude arterial injury.

1. 3 imaging modalities:
    a. Colour Doppler: It is often the 1st investigation/screening investigation for PVIs in cases with soft signs. It has high specificity. However, it is time taking and operator dependent. However, it had a major drawback in being unable to differentiate between acute and chronic conditions.

CT angiography (CTA): It is now considered as gold standard investigation for PVIs. The advantages being non-invasive and provides a road map for surgical intervention. The direct signs of PVIs on CTA include Occlusion, Thrombosis, intimal flap, spasm, external compression, Pseudoaneurysm, active contrast extravasation, and Arterio-venous fistula. Indirect signs include perivascular hematoma, a projectile tract near a neurovascular bundle, and shrapnel in a distance of <5mm from the vessel.

However, one of the major disadvantages of CTA is that it is non-therapeutic and not useful in cases with multiple foreign bodies in situ.

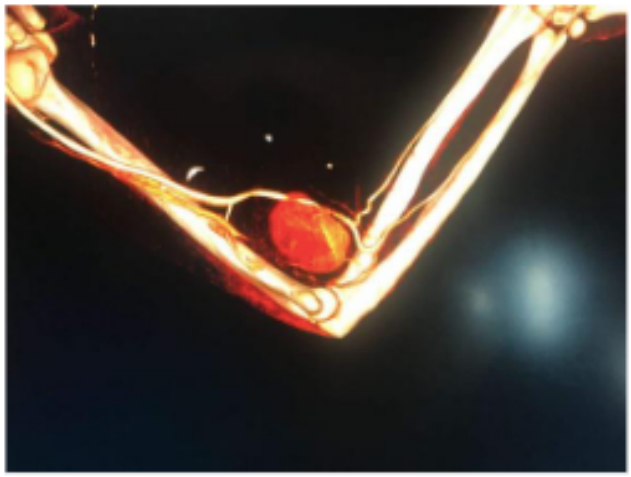


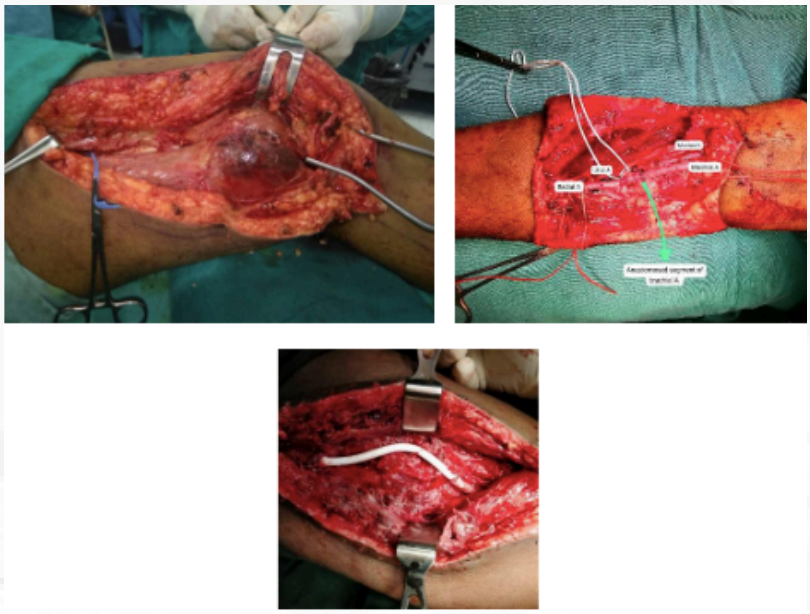
Figure: a) pseudoaneursym b) Vascular cut off

1. Conventional angiography: This was once considered a gold standard for PVIs. However, its role is now limited in cases of pellet injury where CTA shows multiple artifacts. Furthermore, it is advantageous in cases where therapeutic endovascular intervention is required. Recently, its role has shown a resurgence with the introduction of “Hybrid-Operation Room” where it is utilised for both diagnostic and therapeutic uses.

1. 3 management modalities:
    a. Non-operative management: This approach is used in case of PVIs to smaller vessels like branch vessels, in single forearm vessel injury (radial artery or ulnar artery) and in single tibial vessel injury. This strategy is primarily used in blunt injuries and rarely in penetrating injuries.

Endovascular management: Endovascular management is an upcoming modality. It is mainly used for treatment of pseudoaneurysms (thrombin instillation or embolization) and/or Arterio-venous fistulas (stenting can be done). Its use is still limited in PVIs as they are easy to access surgically.

1. Operative management: The primary approaches include simple ligation, primary repair and interposition graft placement. Simple ligation is not recommended for arterial injuries while it can be done for venous injuries in cases where repair is not possible. In haemodynamically unstable patients with arterial injuries, intravascular shunt may be placed as a time buying option.



Intra-operative pictures: a) Pseudoaneursym b) Primary repair c) synthetic interposition graft

To conclude, vascular trauma is limb and life-threatening injury. Every effort should be made for early identification and management of vascular trauma. A combination of clinical examination and radiological investigations helps to reach to a diagnosis.

Beyond Physical healing:
The Journey to Psychological Recovery

Dr. Sujit Kumar Kar
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KGMU, Lucknow

The journey of psychological recovery is just as important as physical healing for patients with trauma. Experiencing trauma can have profound and far-reaching effects, impacting not only the body but also the mind. While physical injuries are often visible and can be treated with medical or surgical intervention; however, psychological wounds may remain hidden, requiring a more nuanced approach to healing. Prioritizing psychological recovery is crucial for trauma survivors to achieve a holistic and lasting sense of well-being. Trauma affects the brain in several complex ways, often altering emotional, mental, and behavioral responses. Many individuals with physical trauma may develop psychiatric disorders like: post-traumatic stress disorder (PTSD), anxiety, depression, or other mental health challenges (Richardson et al., 2021; Versluijs et al., 2022; Wiseman et al., 2013). The psychological response to trauma varies from individual to individual, and some may struggle to control their emotional responses, frequently re-experiencing the trauma through flashbacks, nightmares, or intense distress.

Individuals with multiple physical traumas, being a victim of violence and those suffered functional impairment due to injury, often experience significant psychological distress and poor quality of life (Aarø et al., 2023). A study reports that nearly one third of the conscious patients with physical trauma, experience post-traumatic stress disorder (Skogstad et al., 2014). Therefore, psychological recovery is not simply about "getting over it" or "moving on". It involves processing the traumatic event, making sense of it, and gradually rebuilding a sense of safety, control, and trust in oneself and the world.

Psychological recovery starts with understanding and acceptance, a process often supported by therapies like cognitive behavioral therapy (CBT), eye movement desensitization and reprocessing (EMDR), and trauma-focused therapy.

These therapies help individuals in processing traumatic memories, altering negative biases in thinking, and developing healthy coping strategies. A primary goal in therapy is to reframe the trauma—not by erasing it, but by diminishing its emotional and psychological distressing impacts. This process can gradually help restore a person's sense of identity, which trauma may have shaken, allowing them to rebuild confidence in their ability to deal with the common challenges of life.

Another important aspect of psychological recovery is rebuilding social connections. Trauma can lead individuals to withdraw from friends, family, and their community, often due to feelings of shame, guilt, or fear. However, a stronger support network is invaluable for providing comfort, encouragement, and practical help during recovery. Community and peer support groups are particularly beneficial, as they connect individuals with others who have faced similar challenges. This shared understanding can foster a sense of belonging and alleviate the isolation that many trauma survivors experience.

Self-training practices such as mindfulness, exercise, journaling, and creative outlets are essential for psychological recovery. Mindfulness encourages trauma survivors to focus on the present moment, helping them develop awareness and control over their thoughts and emotions. Physical activity releases endorphins, which can alleviate some of the stress and anxiety commonly associated with trauma. Creative activities, like art or music therapy, provide a non-verbal outlet for expressing emotions that may be too difficult to articulate.
It's important to note that psychological recovery is not a linear process. Progress often comes with setbacks, and healing can take years, requiring patients to revisit and reprocess their trauma at different stages in their lives. With the right support, however, trauma survivors can experience profound personal growth. Many individuals find that they become more resilient, compassionate, and self-aware after healing from trauma. Therefore, the journey to psychological recovery is about more than returning to a pre-trauma state; it is about forging a renewed sense of purpose, connection, and inner strength.

Ultimately, psychological recovery involves reaching the premorbid level of functioning—not by erasing the scars of trauma but by embracing a path toward resilience and growth. This process reshapes one's self-concept and helps develop a healthy emotional framework to face future challenges. Beyond physical healing, the journey to psychological recovery is transformative, allowing individuals to rediscover and cultivate a sense of peace, purpose, and well-being in their lives.

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Abstracts

“A Case of Complex Duodeno-Pancreatic Trauma: Why Radical Surgery is Not Always the Answer”,

Dr Harsh Vardhan Baranwal

Duodeno-pancreatic trauma presents significant management challenges, often requiring radical surgery due to high complication risks. This case report details the successful conservative management of a complex duodeno-pancreatic injury in a 41-year-old male who sustained multiple injuries from a road traffic accident. Imaging revealed Grade III pancreatic and right renal injuries, leading to an exploratory laparotomy. Surgical findings included a perforated duodenum and transected pancreatic neck, which were managed through primary repair of the duodenum, approximation of the pancreatic neck, and creation of a gastrojejunostomy. Postoperatively, the patient had an uneventful recovery and was discharged with drains that eventually showed decreased output, leading to their removal. This case highlights the effectiveness of tailored, less invasive surgical strategies in managing complex duodenopancreatic trauma, suggesting that conservative approaches can optimize outcomes while minimizing complications. Individualized patient care plans based on injury severity and overall clinical condition are essential for achieving favorable results

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A rare case of omental gangrene –

Hitesh Taleja Aims

Objectives: Omental gangrene is a rare cause of acute abdomen that can mimic conditions like appendicitis. This report emphasizes the need to consider it in diagnoses, highlights the role of laparoscopy, and showcases its effectiveness in treatment. Methods: A 29-year-old male presented with acute right lower quadrant pain, nausea, and vomiting. Initial imaging suggested appendicitis. During a laparoscopic appendectomy, a 10 cm segment of gangrenous greater omentum was discovered. Results: Histopathology confirmed omental gangrene with extensive infarction and inflammation. The patient recovered well postoperatively without complications. Conclusion: Omental gangrene should be included in differential diagnoses for acute abdomen, especially when imaging is unclear. Laparoscopy effectively identifies and manages this condition, reinforcing the importance of early surgical evaluation and minimally invasive techniques.

TITLE: BLOWOUT FRACTURES OF THE ORBIT

Bhattacharya. S, Khanna.

A. Orbital fractures are categorized into blowout fractures and those without blowout. Blowout fractures can be pure or impure, often causing eyelid edema, orbital emphysema, vertical diplopia, enophthalmos, and infraorbital nerve hypoesthesia. Diagnosis is confirmed via coronal CT and forced duction testing. Surgical treatment typically involves open reduction and internal fixation using mini plates and screws, with grafts or titanium mesh for fractures with bone loss. Complications like facial asymmetry, diplopia, and ocular muscle imbalance are often preventable. Associated injuries to the eye, ranging from corneal lacerations to globe rupture, require prompt ophthalmological management to avoid long-term issues

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Title: Agricultural Farm-Related Head Injuries in Rural India: A Comprehensive Case Series
Deepak Kumar

This case series explores agricultural farm-related head injuries in a rural context, focusing on four distinct cases: winnowing fan blades, bull gore, agricultural boring machines, and tractor ploughers. Introduction: Agricultural work in India carries significant head injury risks. This study examines the management complexities in rural healthcare.

Methods: Data were collected from AIIMS Patna's trauma surgery department, analyzing patient demographics, injury details, GCS scores, surgical interventions, and outcomes.

Results:

1. Winnowing Fan Blade: GCS E2V2M5; treated with debridement; discharged after 30 days, GCS E4V5M6.
2. Bull Gore Injury: GCS E3V4M5; treated with enucleation; discharged on day 15, GCS E4V5M6.
3. Boring Machine Injury: GCS E3V3M5; treated with debridement; discharged on day 20, GCS E4V5M6.
4. Tractor Plougher Injury: GCS E1VTM5; treated with debridement; discharged on day 20, GCS E4V5M6.

Discussion: Highlights the need for prompt intervention and improved rural healthcare infrastructure. Conclusion: Tailored management is essential for optimizing outcomes in agricultural head injuries, stressing the need for enhanced rural healthcare strategies.

Title: Psychiatric profile of patients admitted with violent self-harm at a tertiary care level 1 apex trauma center over a period of 5 years

Authors: Nishtha Chawla1 , Nida Mir2 , Pratyusha Priyadarshini2 , Junaid Alam2 , Dinesh Kumar Bagaria2 , Narendra Choudhary2 , Abhinav Kumar2 , Subodh Kumar2 , Amit Gupta2 , Biplap Mishra2 , Sushma Sagar2 I

ntroduction: Violent self-harm essentially includes attempts other than ingestion of poison/ overdose. This study aimed to assess and describe the pattern and profile of patients admitted with self-harm at tertiary care level 1 apex trauma centre Methods: We reviewed records from January 2018 to April 2023, of all in-patients admitted for selfharm via methods such as cuts, stabs, falls, or self-inflicted injuries. Data was collected from hospital records. Results: out of 104 self-harm patients, predominantly male (89%) with an average age of 33.2, common injuries included neck cuts and stab wounds. Most received psychiatric referrals, primarily for impulsive self-harm and depression, with three patients dying during hospitalization. Conclusion: the high prevalence of psychiatric illness among trauma patients with violent self-harm highlights a critical gap, as about one-third did not receive psychiatric referrals due to trauma care prioritization. This underscores the need for integrating mental health services in trauma centers to enhance patient outcomes.

A Case of Gastric Perforation following blunt Abdominal trauma

Prthyanka. M

Blunt abdominal trauma can lead to rare hollow viscus injuries, which complicate timely diagnosis. This report presents an 18-year-old male who was admitted after a road traffic accident, initially diagnosed with a left femur fracture and no free fluid on ultrasound. Eight hours later, he developed abdominal pain, and subsequent imaging revealed pneumoperitoneum and a suspected perforation of the stomach. An exploratory laparotomy identified a 3 cm gangrenous patch on the stomach, which was treated with primary closure and a feeding jejunostomy. Postoperatively, the patient had an uneventful recovery, except for a superficial infection. He later underwent external fixation for his femur fracture and was discharged. The case highlights that hollow viscus injuries can result from direct compression and emphasizes the importance of timely assessment to reduce morbidity, with prognosis influenced by various factors.

Keywords: Blunt abdominal trauma, hollow viscus perforation, gangrenous patch.

Damage Control Stenting

Dr. Mohit Goyal

Introduction

Blunt thoracic aortic injuries (BTAIs) are an uncommon traumatic injury that if not treated promptly, can result in death. We present the case of a BTAI with patient presenting with complete heart block with pseudoaneurysm of descending thoracic aorta (gd 3 aortic injury) which ruptured (converted to gd 4 aortic injury). Patient was managed with TEVAR and discharged without any complications.

Materials and methods (Presentation of case)

A 15-year-old boy was injured in a road traffic accident, initially treated for a right-sided tension pneumothorax and later diagnosed with Grade 3 aortic and liver injuries. Transferred to JPNATC, he developed complete heart block, managed with a temporary pacemaker. After a ruptured pseudoaneurysm, he underwent TEVAR and VATS and was discharged without complications.

Results

A young teenage boy with polytrauma with significant blunt trauma chest with tension pneumothorax, complete heart block, gd 3 aortic injury turning to gd 4 aortic injury and blunt trauma abdomen with gd 3 liver injury with hemoperitoneum was successfully managed with a team approach involving multiple departments with minimally invasive technique (TEVAR followed by VATS) and was discharged without any significant complications.

Conclusion

Blunt thoracic aortic injuries are life threatening and require urgent intervention. TEVAR is associated with better outcomes. Even if the pseudoaneurysm ruptures. TEVAR is still an option for repair of blunt thoracic aortic as open repair still carries an increased risk of morbidity and mortality.

Navigating the complexity: A rare case report of concurrent Common bile duct and pancreatic injury.

Vikram VS

Traumatic pancreatic and CBD injury are the two injuries which are rare and carry significant morbidity and complications post trauma. If present together, they pose a great challenge to a trauma surgeon, be it the operative planning or peri-operative management. Considering the limitations there will be need to devise the plan on patient to patient basis. We report a case of concurrent pancreatic and CBD injury presenting secondary to a road traffic injury. He initially underwent diagnostic laparoscopy for the suspected duodenal injury, but intra-op it was found to be normal. Peritoneal lavage and drain placement was done. Subsequently patient's Morrison's drain started to have bilious output, and on MRCP he was diagnosed to have distal CBD injury. After failed ERCP, he underwent exploratory laparotomy, abdomen was found to be hostile due to pancreatitis changes with dense adhesions in sub-hepatic area with frozen Calot's. Necrosectomy in pancreatic head region was done. Anastomotic plan was deferred due to possible risk of erosion by pancreatic juices. After subsidence of pancreatitis features with normalized drain amylase level, he was reexplored and Roux-en-Y cholecystojejunostomy was done as bypass procedure. But, cystic duct could not be cannulated and distal CBD could not be reached due to dense adhesions. So, subsequently after 1 week plugging of CBD was successfully done through Percutaneous Transhepatic Biliary Drainage (PTBD). Patient was discharged without any further complications and is found to be doing well in subsequent follow-up visits. Traumatic pancreatitis carries mortality of up to 25% with morbidity of up to 66% and traumatic CBD morbidity varies up to 26%. With the challenges of distorted anatomy due to blunt injury and with morbidity factors, management will always be an uphill task. This case highlights the challenges faced and the tailored surgical strategy required to manage the complex traumatic pancreatico-biliary injuries.

Challenges in Managing Penetrating Neck Trauma: A Case Report of Esophageal Injury and Leak

Dr. Yogesh Srivastava1 , Dr. Pranabh Kushwaha2 , Dr. Amritanshu Saurabh2 , Dr. Shirish Kumar2

Introduction: Penetrating neck trauma poses significant challenges due to vital structures, particularly cervical esophageal injuries, which require timely diagnosis and surgical repair to prevent morbidity. **Case Presentation:** A 26-year-old female presented with a penetrating neck injury, showing signs of an esophageal injury confirmed by MRI. Surgical exploration revealed two cervical esophageal rents, which were repaired with a muscle flap and drain placement. The patient initially recovered but developed an esophageal leak on postoperative day 8, confirmed by CT esophagogram. Management included drainage and wound lavage, leading to complete healing by day 20.

Conclusion: This case highlights the complexities of managing cervical esophageal trauma and the importance of early detection, prompt surgical intervention, and diligent postoperative care to ensure positive outcomes.

Bridging the gap between trauma and coping: Role of Clinical Psychologist in post trauma care

Suzana John

Introduction: Traumatic incident (here considered as physical or external trauma) can leave a person suffering and fighting with many post traumatic physical and mental issues. The difficulty in adjusting back to the new normal is huge and cannot be overlooked. The list is long for post recovery difficulties including, physical problems, frequent visit to the hospitals concerning health issues, problems with performing well at job, facing people and especially in handling one's own mental health, emotions and behavioral changes as well. Previous studies have focused constantly on the need for psychological intervention at trauma centers for both the trauma survivors as well as their families, who handle the vicarious trauma at large. But due to lack of time and the urgency to save lives, these issues that develop as an after effect of the traumatic event are often neglected. The lack of trained professionals to handle the post traumatic psychological effects also equally contributes to the negligence in care, further making the individual ineligible to cope with upcoming challenges and demands posed by the traumatic experience. This equally leaves both sides of the situation being in dire need to be addressed. Both the professionals to take a step forward for better care and the expecting survivors to help them cope better together with their families to be taken in view. In the recent research by Nitisha Chawala and Rakesh Chadda at a trauma center in India, the need for a whole team for psychological rehabilitation has been stressed which include clinical psychologist, psychiatric social worker and psychiatric nurse. Keywords: trauma, clinical psychologist, post trauma care.

Bowel evisceration – A case report

Yuvraj kumar

Background and aims : Bowel evisceration is uncommon after blunt trauma to abdomen . It requires emergency laprotomy and exploration . Here we report a young male who suffered blunt abdominal injury due to road traffic accident leading to bowel evisceration and had to undergo emergency exploratory laprotomy .

Case report: In a high speed motor vehicle accident, a 20year old male sustained direct injury to abdomen which resulted in evisceration of bowel came to the casualty after few hours.This case helps to plan the multidisciplinary approach towards blunt injury with eviscerated bowel till rehabilitation .

Result :After all resuscitative measures as per ATLS guidelines, patient was taken for emergency laparotomy for damage control. Ileostomy was created for this patient and after 10 days in the surgical intensive unit ,patient was shifted to surgical ward. 2 months later patient was operated for ileostomy closure , after which after post operative day 13, there was anastomotic leakage for which patient was re explored and ileostomy was re created. He was then discharged in a satisfactory condition and is been called after 4 months for iileostomy closure.

Conclusion: Patient with high velocity trauma have high mortality and morbidity rate. Blunt injury with eviscerated bowel requires promt damage control procedures. A multidisciplinary approach is manditory throughout the period of treatment until rehabilitation

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DETERMINANTS OF NON OPERATIVE MANAGEMENT IN TORSO FIRE ARM INJURY PATIENTS PRESENTING TO LEVEL I TRAUMA CENTRE.

Muskan Dugar, Shubham Kumar Gupta, Vivek Katiyar, Sumit Sharma, Satyanam Kumar Bhartiya,, Shashi Prakash Mishra

Introduction: This study explores the potential for non-operative management (NOM) of penetrating abdominal injuries from firearms (FAI), aiming to assess its incidence, success and failure rates, and the factors influencing successful NOM compared to immediate laparotomy. Methodology: A prospective cohort study at a trauma center in Varanasi included 228 patients aged over 18 with FAI from January 2021 to June 2024. Data on demographics, clinical parameters, and outcomes were analyzed, with statistical significance set at $p < 0.05$. Results: Of 228 patients, 176 (77.2%) underwent immediate laparotomy (IL), while 52 (22.8%) were initially managed non-operatively (NOM). Successful NOM occurred in 40 patients (17.5%), with 12 requiring delayed laparotomy. Significant predictors for successful NOM included lower Injury Severity Score (ISS), hemodynamic stability, absence of peritonitis, and specific biochemical markers ($p < 0.001$). The IL group had higher ICU needs, longer hospital stays, more complications, and greater mortality compared to the NOM group.

Conclusion: NOM for FAI is a viable strategy that can reduce unnecessary surgeries without significantly increasing complications or mortality. The decision for NOM should consider the injury's location and various clinical parameters.

Title- "Initial Irrigation and Suction reduces incidence of retained haemothorax: Results from a randomized controlled study from an apex trauma center in India"

Author- Dr Debmoy Ghatak*, Dr Amit Gupta, Dr Sushma Sagar, Dr Subodh Kumar, Dr Biplab Mishra, Dr Pratyusha Priyadarshini, Dr Dinesh Bagaria, Dr Narendra Chaudhury, Dr Abhinav Kumar, Dr Junaid Alam

Background: Retained hemothorax (RH) in traumatic chest injuries often requires secondary interventions. This study assesses the effect of initial irrigation and suction on reducing secondary intervention rates in early-presenting traumatic hemothorax cases. Methods: A two-arm, randomized control trial involved 90 hemodynamically stable patients with traumatic hemothorax, divided into irrigation (n=45) and control (n=45) groups. Initial irrigation and suction were performed in the emergency department. Results: The cohort was mostly young males (average age 41.02 years) with blunt trauma (88%). Initial irrigation significantly reduced RH rates (6.7% vs 24.4%, $p<0.05$) and days with intercostal drainage (4.6 vs 6.62 days, $p<0.05$). The irrigation group also had fewer ICU stays (22.2% vs 44.4%, $p<0.05$) and fewer ICD complications, with lower but not statistically significant operative intervention rates (6.7% vs 20%). Initial ICD output (cutoff 200 ml) and CT thickness (cutoff 18 mm) were linked to RH development, with high negative predictive value (94%). Conclusion: Initial irrigation and suction reduce RH rates and ICD duration, potentially improving patient care. Identifying cutoff values for ICD output and CT thickness may help select patients who would benefit from these interventions.

Title: Comprehensive Emergency Care and Recovery in a Case of Self-Inflicted Tracheal Transection: A Multidisciplinary Approach

Introduction Self-inflicted cut-throat injuries, though rare, are life-threatening emergencies often linked to psychiatric disorders. These injuries present complex challenges in airway management and surgical repair due to the extent of damage, particularly in cases of tracheal transection.

Case Presentation A 45-year-old male with a history of major depressive disorder attempted suicide by slashing his throat with a sword, resulting in complete tracheal transection. The patient arrived at the emergency department in severe respiratory distress, with significant hemorrhage. Immediate resuscitation was initiated with fluid therapy and oxygen support. Traditional intubation methods failed due to the nature of the injury, and airway stabilization was achieved using pediatric fiberoptic bronchoscopy. Following this, the patient underwent emergency surgery where a successful end-to-end tracheal anastomosis and T-tube placement were performed. No immediate surgical complications were noted. Postoperatively, the patient was managed in the intensive care unit (ICU) with ventilator support. His psychiatric condition was addressed through ongoing medication and counseling. The patient was gradually weaned off ventilator support, and no major complications, such as sepsis or tracheal stenosis, were observed. After one month of intensive care and psychiatric intervention, the patient was discharged in a stable condition with follow-up arrangements for both physical and mental health. Discussion Self-inflicted cut-throat injuries, linked to psychiatric disorders and socioeconomic factors, pose challenges in airway management and surgical repair. This case of complete tracheal transection highlights the critical role of pediatric fiberoptic bronchoscopy in airway stabilization, followed by successful surgical repair and intensive postoperative care. The patient recovered with ongoing psychiatric support. Conclusion The successful management of self-inflicted cut-throat injuries requires prompt and effective airway control, meticulous surgical repair, and comprehensive postoperative care. Multidisciplinary collaboration between emergency physicians, surgeons, anesthesiologists, and psychiatrists is essential to ensure both physical and mental recovery in patients with psychiatric comorbidities.

Role of maxillofacial surgeon in early diagnosis of eye injuries in trauma patient

Garima khandelwal

The present study highlights the association of eye injuries with maxillofacial trauma and the role of maxillofacial surgeons in early diagnosis of eye injuries. A retrospective chart was prepared to evaluate the corelation of eye injuries with maxillofacial trauma. The chart included basic demographic data like age and sex, mechanism of injury, facial fractures, associated eye injuries, associated other injuries, and management of facial fractures. Data were analyzed and a p-value of <0.05 was considered statistically significant. The study sample consisted of 151 patients. The most associated maxillofacial fracture with eye injuries is an orbital floor with lateral wall and medial wall fractures (29.13%), followed by zygomatic maxillary complex fractures (ZMC) (21.2%). Commonly seen eye injuries are open-globe injuries (43.3%) and closed-globe injuries (19.8%). This chart review thus concludes that eye injuries are commonly seen in association with maxillofacial trauma including orbital and ZMC fractures. Thus maxillofacial surgeons plays a crucial role in early diagnosis of eye injuries. A complete examination of the eye leads to an early diagnosis of grievous injuries and prompt management, albeit at the expense of potential delays in managing maxillofacial fractures in certain instances.

Title- All roads to find a cover : Paradigm shift in trauma

Dr Drishti Batra*, Dr Debmoy Ghatak, Dr Chigurupati Veda Samhitha, Dr Sushma Sagar, Dr Narendra Chaudhury Dr Dinesh Bagaria, Dr Pratyusha Priyadarshini, Dr Abhinav Kumar, Dr Junaid Alam Dr Subodh Kumar, Dr Biplab Mishra, Dr Amit Gupta

Background: Soft-tissue injuries are a major cause of morbidity in polytrauma patients, and conventional autografts may not be viable due to poor condition or sepsis. Skin substitutes can provide early coverage for extensive wounds, particularly in small children. Methods: This case series included 75 patients treated with various skin substitutes, including allografts (42 patients), cadaveric grafts, STSG from relatives, and dermal templates like collagen-elastin templates (5), Biodegradable Temporizing Matrix (24), and Dermal Regeneration Template (17). Some patients required combinations for complete coverage. Results: Skin substitutes improved the wound bed for subsequent autografts, reducing the need for flap coverage and donor site morbidity. They were especially beneficial for small children with limited donor areas. Conclusion: The choice of wound coverage in polytrauma patients depends on physiological condition and wound bed quality. Skin substitutes are crucial in managing large soft tissue defects, preventing desiccation and potential amputations by providing timely coverage.

Background:
Massive transfusion (MT) is often required in trauma patients, especially following road traffic incidents (RTIs). Existing scoring systems based on older definitions of MT may not apply universally. Our study aimed to identify transfusion triggers for MT among trauma patients.
Materials and Methods: This retrospective cohort study included major trauma patients (ISS ≥16) admitted to our Level 1 trauma centre over 2 years. MT was defined as receiving >10 units of PRBCs within 24 hours, 3-6 PRBCs in 1-6 hours, or ≥4 blood components within 2 hours. Cut-off values for MT were derived from pre-existing scores - SBP<90, HR>120, positive FAST in > 1 quadrant, PCV < 30, BD ≥6, Lactate > 5, pH < 7.25. Clinically significant parameters from univariate analysis underwent stepwise binary logistic regression to develop the final predictive model.
Results: The study included 688 major trauma patients,36 in the MT group and 652 in the non-MT group. The median ISS was 25 (IQR: 16–50). HR was higher (107.5 ± 34.4 vs 97.6 ± 21.4, p = 0.005) and SBP was lower (99.2 ± 31.3 vs 119 ± 26.4, p = 0.001) in MT group. A Positive FAST was more common (p = 0.032), PCV was lower (27.7 ± 12.1 vs 37.5 ± 6.7, p < 0.001), lactate levels were higher (4.82 ± 2.63 vs 3.80 ± 3.5, p = 0.015), pH was lower (7.2 ± 0.09 vs 7.2 ± 0.09, p = 0.047), and base deficit (BD) was higher (7.9 ± 4.1 vs 5.27 ± 4.46) in the MT group. Logistic regression identified SBP (OR 4.6), HR (OR 3.6), and BD (OR 2.6) as predictors of MT.
Conclusion: Our study shows that common clinical indicators may not be universal, and each centre must develop tailored models based on their patient population.

From Trauma to Recovery: Management of Colonic Perforation Following Jet Air Insufflation SASHRIKA. R

Background and Aims: This case study addresses the rare but severe complications of traumatic colonic injuries from jet air insufflation, demonstrating effective management through emergency surgery and comprehensive postoperative care. Materials and Methods: A 30-year-old male factory worker presented with colonic perforation after jet air insufflation. He underwent emergency exploratory laparotomy, involving resection and anastomosis of the sigmoid and transverse colon, double-barrel stoma formation, and pelvic drain placement. Results: Surgical findings included a 4x4 cm perforation in the sigmoid colon. Postoperative recovery in the SICU was successful, with stoma function restored by day 2. The patient received ongoing care, including mobilization and stoma education, and was discharged with oral medication. Conclusion: Prompt surgical intervention and thorough postoperative care were crucial for positive outcomes in this traumatic colonic injury case, highlighting the importance of integrated care in trauma management.

T**ITLE- HAND INJUIRES IN COMBAT CONFLICT ZONES AIMS & OBJECTIVES-**

Hitesh Talija

This retrospective study aims to analyze the nature, mechanisms, management, and outcomes of hand injuries sustained in a combat conflict zone. The objectives are to classify the injuries into combat-related (mine blasts, gunshots) and non-combat-related (blunt trauma, crush injuries, lacerations, amputations, burns, degloving injuries), assess injury patterns, and evaluate surgical interventions for tendon, bone, and soft tissue repairs and their outcomes. METHODS & RESULTSA review of 88 hand injury cases at the 92 Base Hospital from January 2023 to March 2024 found 20% combat-related injuries and 80% non-combat-related. Surgical treatments included skin grafts (10%) and flaps (60%), with 70% of fractures treated using K-wire fixation. Flexor tendon repairs achieved a 70% total active motion score, while extensor repairs reached 75%. K-wire fixation allowed 80% of patients to regain near-normal grip strength, and 85% of soft tissue repairs resulted in satisfactory recovery. CONCLUSION- hand injuries in combat zones exhibit diverse trauma patterns, with both combat and non-combat causes. Timely surgical management and appropriate reconstruction techniques leads to satisfactory functional outcomes. Reinforced protective gloves, strict safety protocols, and hazard awareness training are recommended to reduce hand injuries in these environments.

Title: Pediatric Atlantoaxial Dislocation: A Prospective Observational Study on Clinical and Radiological Outcomes

Shubhajeet Roy1, Mehul Saxena2

Introduction: Paediatric atlantoaxial dislocation (AAD) is rare but can cause severe spinal cord issues. This study examines five children treated with C1-C2 pedicle screw fixation. Methods: Five patients aged 5 to 11 years were included, with varying neurological deficits. Imaging and different surgical techniques were employed, including wiring, grafting, and DCER. Results: All patients achieved bony fusion by the follow-up (average 24 months), with notable neurological improvements, especially in the DCER patient. Complications were minimal; one had torticollis. Discussion: C1-C2 pedicle screw fixation, while less common in children, provides good stability. The study confirms its effectiveness despite a small sample size and limited follow-up.

DIAGNOSTIC ROLE OF LAPAROSCOPY IN PENETRATING ABDOMINAL TRAUMA IN HEMODYNAMICALLY STABLE PATIENTS A PROSPECTIVE STUDY

Arpita Shukla

Introduction: Penetrating abdominal trauma is a prevalent concern in North India, particularly from low-energy mechanisms such as stab wounds. These cases often present with hemodynamic stability, allowing for alternative management strategies that do not immediately resort to laparotomy. This study explores the efficacy of diagnostic laparoscopy (DL) as a novel approach in the assessment and management of penetrating abdominal injuries. Patients and Methods: We conducted a prospective study involving 25 patients diagnosed with penetrating abdominal trauma from July 2023 to August 2024. Results: The analysis found that the most common injuries were mesentery (35%), small intestine (25%), and colon (16%). While 76% of patients required conversion to laparotomy, 24% benefited from diagnostic laparoscopy, preventing unnecessary surgeries. Those who had DL experienced 5-7 days shorter hospital stays, fewer surgical site infections, and reduced ICU admissions. Conclusion: Diagnostic laparoscopy (DL) significantly improves the management of penetrating abdominal trauma by reducing surgical trauma, accelerating recovery, and lowering postoperative complications compared to open laparotomy. This study emphasizes DL's effectiveness in enhancing diagnostic accuracy, improving patient outcomes, and decreasing non-therapeutic laparotomies and extended hospital stays.

A case series of penetrating neck injuries at a level 1 trauma centre

Harendra Kumar

I**ntroduction:** Penetrating neck injuries make up 5-10% of all trauma cases but constitute a large mortality rate. Hence it is important to know its management protocols and algorithms as rapid action can drastically reduce morbidity and mortality.

Aims and Objectives: To discuss the case series and outcomes of penetrating neck injuries at a level 1 trauma centre, focussing on the interventions performed and patient outcomes. Materials and Methods A retrospective case series was done at a level 1 trauma centre in Bihar, India from March 2023 to August 2023. After ethical clearance, data was collected from the hospital medical records. All patients that suffered from penetrating neck injuries were studied and their demographics, interventions and outcomes followed-up.

Results- A total of 8 patients were studied in the period of 6 months. Out of 8 patients, 6 were primary cases and 2 were referred from peripheral centres. All were males between the ages 20 and 60 years. Out of 8 patients, 5 had vascular injuries, 3 had airway injuries and all had muscular injuries. All patients underwent operative intervention in view of the same. All 8 patients survived and were discharged in stable condition.

Conclusion-Penetrating neck injuries can have improved outcomes only with rapid action and hybrid multiple speciality intervention.

Title: Complex Duodenal Trauma Managed with Pyloric Exclusion and Jejunal Patch: A Case Report

Vibhuti Uniyal

Duodenal injuries are rare and complex, often leading to complications like leakage. This case details a 42-year-old male with multiple duodenal perforations from a high-velocity accident. After primary repair, a jejunal serosal patch was applied, and pyloric exclusion was performed to divert gastric contents. The patient had an uncomplicated recovery, starting enteral feeding by POD4 and was discharged on day 41, demonstrating the effectiveness of these techniques in managing complex duodenal trauma

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"**Unveiling Hidden Wounds: A Journey Through the Layers of Abdominal Trauma in a Pediatric Case" – A case report DR SIDDHARTH SAHIL**

Trauma surgeons face challenges in distinguishing between negative laparotomy and missed abdominal injuries, particularly in pediatric cases. This report details a rare instance of rectal perforation in a 7-yearold boy misdiagnosed as appendicitis. The patient presented with a 2-day history of abdominal pain and distension, with imaging indicating pneumoperitoneum. Initial laparotomy revealed pus and a suspected sealed appendix, leading to an appendectomy. However, on postoperative day 3, recurring pain and fecal output from a pelvic drain prompted further investigation. The mother eventually revealed a fall onto an iron rod, necessitating a re-exploratory laparotomy that identified the rectal perforation. The injury was repaired, and a colostomy was performed. Postoperative management included addressing complications such as an infected suture line. The patient ultimately recovered and was discharged. This case emphasizes the critical importance of thorough history-taking, the need for considering rectal injuries in trauma assessments, and the value of prompt surgical intervention for successful outcomes

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Title: Unveiling the Rarity: Delayed Presentation of Post-Traumatic Right-Sided Diaphragmatic Hernia

Abhishek Kumar

Traumatic diaphragmatic hernias pose diagnostic challenges due to their rarity and delayed onset of symptoms. We present a case of a 35-year-old male who, three years after a stab injury, experienced persistent right-sided chest pain, leading to the diagnosis of a right-sided diaphragmatic hernia. Imaging, particularly CT, revealed intrathoracic liver herniation through a diaphragmatic defect. Surgical intervention via exploratory laparotomy with mesh reinforcement resulted in a successful recovery. This case highlights the importance of recognizing delayed presentations of traumatic diaphragmatic hernias and the necessity of timely surgical intervention for better patient outcomes.

Managing a Patient with Multiple Solid Organ Injuries: A Case Report Highlighting Challenges and Resource Limitations

Dr. Aseshta Sharma1 , Dr. Pranabh Kushwaha2 , Dr. Rounak Mehrotra2

Introduction: Managing multiple solid organ injuries in trauma patients, especially in resourcelimited centers, is challenging. Non-operative management has emerged as a vital strategy for hemodynamically stable patients. This case report details the nonoperative approach taken for a 16-year-old female with high-grade solid organ injuries from a road traffic accident, highlighting the reasoning behind opting for conservative treatment over surgical intervention. Case Presentation: 16-year-old female suffered hypovolemic shock after being run over by a truck while riding a bicycle. Imaging revealed multiple solid organ injuries, including Grade 4 left renal, Grade 3 pancreatic, Grade 2 splenic, and Grade 1 liver injuries, along with lung contusions and pelvic fractures. The patient was managed non-operatively with fluid resuscitation, blood transfusions, and close monitoring due to the risk of increased morbidity from higher-grade injuries. Her condition stabilized, and she was referred to a trauma center for further management of the pancreatic injury. Conclusion: This case points out the importance of timely resuscitation of trauma patients and non-operative management in patients with multiple high-grade solid organ injuries. This approach underscores the need for careful clinical judgment and individualized patient care in trauma management, especially in resource-limited settings.

The Influence of Prehospital Care Parameters on the Outcome of Adult Trauma Patients Admitted to a Tertiary Care Hospital in North-Western India

Aftab Hossain

Introduction: Research on prehospital care for trauma in non-urban India is limited, despite its importance for patient outcomes. This study evaluates the impact of prehospital care on mortality and hospital stays for adult trauma patients at a tertiary care hospital in northwestern India. Methods: A three-month prospective observational study included adult trauma patients arriving within 48 hours of injury. Data on demographics, time to hospital arrival, transport method, and prehospital care were collected, with follow-ups until discharge or a maximum of 30 days. Results: Of 100 patients, only 4% received prehospital care. Most were referred from other facilities due to limited resources. Mortality was 0% among those receiving prehospital care versus 7.3% for those who did not ($p>0.05$). No significant difference in hospital stay was observed. Conclusion: The current Indian trauma system prioritizes “Scoop and Run,” highlighting a need for better prehospital care. Enhancements in training, community education, and bystander interventions are essential for improving survival and recovery for trauma patients in non-urban areas.

Occam’s razor or Hickam’s dictum: A rare case of Acinetobacter baumannii Ventriculitis overlapping with Uremic Encephalopathy in a Polytrauma patient

Sadiya Yousuf, Najeeb CA, Salini Parmez, Azad Sait,Mohammed Iqubal, Radhakrishnan Nair, Chandu, Kaushik Theerth, Thomas Pudukadan, Deepa Nair, Athish K

Introduction: Acinetobacter baumannii, especially carbapenem-resistant strains (CRAB), presents significant management challenges in trauma patients, particularly with CNS infections linked to external ventricular drains. Case Report: A 24-year-old male with severe injuries from a motorcycle accident developed crush syndrome and AKI post-surgery. He presented with altered sensorium and fever, leading to the discovery of hydrocephalus. An external ventricular drain was placed, yielding CSF positive for CRAB. He was treated with intraventricular and intravenous colistin, resulting in improved symptoms and sterile CSF after 12 days. A VP shunt was later placed, and he recovered. Conclusion: This case highlights the successful management of CRAB ventriculitis through combined colistin therapy and critical care, emphasizing the complexities of diagnosing CNS infections in trauma patients. 4o mini

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Peripheral Perfusion Index as a Predictor of Shock in Trauma

Joses Dany James

Introduction: The perfusion index (PI) measures peripheral circulation and indicates changes in cardiac output. It is useful in critical care for assessing shock and guiding trauma care. This study evaluates PI's predictive ability for shock in severely injured patients, using Shock Index (SI) as a reference. Methods: A prospective observational study at CMC Vellore included 120 trauma patients aged 16 and above, triaged as Priority 1. PI was measured upon emergency arrival, alongside vital signs. Patients were categorized based on a Shock Index of 0.7. Results: Of the 120 patients, 80 were in shock. A PI cut-off of ≤0.37 showed 85% sensitivity, while ≤0.16 approached 100% sensitivity for detecting shock. Conclusion: PI is a promising tool for identifying shock in trauma patients. Further studies are needed to confirm cut-off values and assess its practical application in field settings.

PIERCED PERIL: SURGICAL EXPERIENCES WITH IMPALED KNIFE PATIENTS

Raajeshwaran M A, Drishti Batra, Shankarnath S, Vikram V S, Dinesh Bagaria, Junaid Alam, Amit Gupta, Sushma Sagar.

INTRODUCTION: Impaled injuries are emergencies requiring surgical expertise. Such injuries create distinct challenges pertaining to each anatomical region. METHODS AND RESULTS: We report eight cases of patients with impaled knives in different body parts, requiring controlled retrieval in surgery. Three had thoracic injuries, four had abdominal injuries, and one had a neck injury. One patient died during surgery, while the others were successfully treated. Stable patients underwent careful planning and imaging to visualize the knife's position and any affected structures before retrieval. CONCLUSION: Impalement injuries require tailormade protocol for every individual patient, based on the region of injury. This case series emphasizes on improving patient care in impalement injury patients

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Delayed Rupture of Subclavian Artery due Fracture of Right 1st Rib- A Case Report
Rupesh Pakrasi

Introduction: First rib fractures from high-energy trauma can cause serious vascular injuries, particularly to the subclavian artery. We report a 45-year-old male who developed acute chest pain and dyspnea four months post-fracture. Despite emergency surgery, he died from refractory shock due to delayed subclavian artery rupture, a rare complication requiring prompt recognition and intervention. Materials and Methods: The case details the patient's presentation and management via emergency thoracotomy. Conclusion: This case highlights the risk of delayed vascular complications from first rib fractures and the need for high clinical suspicion and rapid intervention to improve outcomes. Increased awareness and research are essential for managing such injuries effectively.

Torso Tractotomy – A Viable Approach to Thoracic Impalement Injury
Rupesh Pakrasi

Introduction: Impalement injuries are considered one of the most severe forms of penetrating injuries. Individuals with penetrating injuries who reach hospital in time have a chance at survival. In the following case we approach the patient via torso tractotomy which has rarely been discussed in literature. Material and Methods: In the following case report, we describe the presentation of the patient and approach via torso tractotomy incision after which the outcome and recovery of the patient has been described. Result: We present the successful use of the Tractotomy approach in a case of impalement injury to the right thorax treated with removal of metallic rod along with repair of right lung laceration with repair of muscles and soft tissue over back and right hemithorax. Conclusion: Tractotomy is a viable approach to treat thoracic impalement injuries as per literature and can be considered as a standard approach in case of similar injuries in the future.

Presentation of Impalement Injuries Following High-Velocity Trauma: A Case Series
Abhishek Kumar

Impalement injuries, though uncommon, involve complex trauma due to the penetration of foreign objects into the body, often resulting from high-velocity incidents or falls. This case series presents six surgically managed impalement injuries treated at AIIMS, Patna. Each case highlights the challenges of managing both blunt and penetrating trauma, requiring careful removal of the foreign body and individualized surgical interventions. Methods: Six cases were selected based on surgical management of impalement injuries. Data were gathered from trauma surgery at AIIMS, Patna. Results: The injuries ranged from abdominal and thoracic impalements to extremity injuries. Surgical intervention involved careful removal of the impaling object and repair of damaged structures, with all patients discharged within 5–14 days post-operatively. Conclusion: Impalement injuries demand prompt, multidisciplinary management. Early intervention, combined with individualized surgical approaches, is key to achieving favorable outcomes, as demonstrated by the successful recovery of all patients in this series.

Silent but Serious: A Case of Colonic Perforation Masquerading as a Persistent Retrorectus Abscess Post Blunt Abdominal Trauma

Dr. Ajay Kumar Gond1 , Dr. Pranabh Kushwaha2 , Dr. Shirish Kumar2 , Dr. Amritanshu Saurabh2

Introduction: Blunt abdominal trauma can lead to serious but rare complications like retrorectus abscesses and hollow viscus perforations, which may not be immediately apparent, complicating diagnosis. CaseReport: A 21-year-old male presented with fever and abdominal pain 10 days after a fall. Initial imaging suggested pelvic abscess and possible bowel perforation. Laparoscopy revealed dense adhesions and a 2x2 cm abdominal wall defect with pus, leading to laparotomy and drainage of 600 ml of pus. Initially stable, the patient later developed persistent discharge from the drain site. A repeat CT scan revealed a loculated abscess. Re-exploration identified a previously missed colonic perforation, which was managed conservatively, resulting in recovery. Conclusion: This case highlights the need for thorough history-taking and vigilance in monitoring patients after blunt abdominal trauma, as delayed complications can arise from seemingly minor injuries. Early detection and management are essential for better patient outcomes.

Outcome analysis of diagnostic laparoscopy in patients with blunt trauma abdomen with FAST+ve with no solid organ injury on CECT: An observational prospective study

Dr Vikash Kumar Yadav1, Dr Narendra Kumar2, Prof. Samir Misra2, Prof. Sandeep Tiwari2

Introduction: Blunt abdominal trauma (BAT) significantly contributes to morbidity and mortality. The early identification of serious intra-abdominal injuries is challenging due to the potential asymptomatic nature of the injuries during initial assessments. Diagnostic tools like FAST and CECT are commonly used but have limitations, especially in detecting hollow visceral organ injuries [1]. Methodology: Patients with blunt abdominal trauma underwent initial resuscitation (ATLS protocol) followed by history taking and FAST scan. A positive FAST or CT scan showing air in the abdomen (pneumoperitoneum) or solid organ injury requiring surgery prompted immediate laparotomy. Patients with negative CT scans for solid organ injury underwent diagnostic laparoscopy to definitively assess for potential internal injuries. Results: Diagnostic laparoscopy demonstrated high sensitivity (90-100%) for detecting intraabdominal injuries
[2].- The approach reduced the incidence of non-therapeutic laparotomies, shortened hospital stays, and decreased morbidity[3]. Conclusion: Diagnostic laparoscopy is a valuable tool in the management of blunt abdominal trauma. It provides accurate diagnosis, reduces unnecessary surgeries, and improves patient outcomes. An optimized treatment algorithm for these patients is proposed.

TITLE: "Optimizing Outcomes in Surgical Rib Fixation: A Comprehensive Review of Our 5 yr Clinical Experience"

Dr. Santhosh B

Background: Rib fractures are common in thoracic trauma, and surgical rib fixation (SRF) may improve outcomes by reducing mortality and complications. The effectiveness of SRF compared to non-operative management (NOM) remains unclear. Objectives: This study aimed to compare clinical outcomes, including mortality, between patients with traumatic rib fractures treated with SRF and those managed with NOM. Methods: A retrospective cohort study analyzed patients with rib fractures, dividing them into SRF and NOM groups. Sociodemographic data, clinical data, injury severity, and hospital outcomes were compared using statistical tests. Results: The study included 52 patients (26 in each group). No significant differences were found in age, blood pressure, or heart rate. Patients undergoing SRF had higher New Injury Severity Scores (NISS), more displaced fractures, and a greater likelihood of TICU admission. The NOM group required more mechanical ventilation and had longer TICU and hospital stays. Mortality was lower in the SRF group (11.5%) compared to the NOM group (19.2%), but the difference was not statistically significant. Conclusion: SRF leads to shorter TICU and hospital stays and lower mortality in patients with higher injury severity. More research is needed to understand SRF benefits in specific patient subgroups.

TITLE: SERRATUS ANTERIOR PLANE BLOCK COMPARED WITH IV OPIOIDS FOR PAIN MANAGEMENT IN RIB FRACTURES OF ADULT POPULATION IN EMERGENCY DEPARTMENT

KRISHNAKUMAR R S

INTRODUCTION: The cornerstone of the management of patients with multiple rib fractures includes aggressive management of chest wall pain. By using myo-fascial type of regional anaesthesia, pain relief is often satisfactory and immediate, with a minimal side effect profile. Hence selected one of the myo-fascial plane block to assess efficacy of analgesia in rib fracture pain. OBJECTIVES: To compare the effectiveness and adverse events profile of Serratus anterior plane myo fascial block (SAPB) and intravenous analgesia (opioids) in rib fracture pain management. To compare the effectiveness of SAPB and local anaesthesia techniques for pre procedural analgesia in Intercostal drainage placement. MATERIALS & METHODOLOGY: Observational Cohort study. Sample size calculated by the equation, n = [2×(Zα+Zβ) 2 ×pq]/d2 , sample size is calculated as having 61 in each groups. Patients will be allotted to case group and control group in an alternative basis. Control patients would receive routine treatment and IV analgesia with opioids as determined by the treating physician. The primary outcome would be the comparison of the longitudinal pain score profiles at rest between groups. RESULTS: Statistically significant reduction in mean pain score noted in patients received block as the treatment when compared to IV opioids during rest and with respiratory movements. Myo-fascial block also provided analgesic effect for ICD insertion. Favourable side effect profile was also noticed in block group. CONCLUSION: Ultrasound guided serratus anterior plane myo fascial block technique, is an effective method of regional analgesia for multiple rib fracture pain and intercostal drain insertion in the emergency department with effective reduction in pain and favourable side effect profile.

The impact of low pressure negative pleural suction versus underwater seal drainage in patient of thoracic trauma: A randomized controlled trial"

Dr. Shahnawaz Ahmad

Background: Thoracic trauma affects 60% of polytrauma cases with a 20-25% mortality rate, often requiring intercostal drainage (ICD). Prolonged ICD use increases morbidity. This study assessed lowpressure negative pleural suction's effect on reducing ICD duration in thoracic trauma patients. Methodology: A randomized controlled trial at a Level-I Trauma Centre assigned thoracic trauma patients with ICD to either low-pressure suction (-20 cm H2O) or standard underwater seal drainage (n=51 per group), focusing on ICD duration and hospitalization length.

Results: The low-pressure suction group had a shorter ICD duration (4.1 vs. 6.8 days), fewer retained hemothorax cases (3.21 vs. 6.8), and reduced re-interventions (2.35 vs. 6.32). No significant differences were found in hospitalization length or complication rates.

Conclusion: Low-pressure negative pleural suction effectively shortened ICD duration and reduced complications, though its impact on hospital stays requires further investigation.

"**Shattered but Survived: A Tale of Two Kidney Segments with aberrant vascularity", A Case Report Harsh V Baranwal, Himanshu Panwar, SK Bhartiya, SP Mishra, Sumit Sharma, Vivek Katiyar**

Introduction: Renal trauma, occurring in 1-5% of trauma cases, can be serious, especially high-grade injuries (Grade IV-V), which require a mix of conservative and interventional management. Case Report: A 21-year-old male with severe abdominal pain from a road traffic accident was found to have a shattered right kidney with perinephric collection. After stabilization, imaging confirmed the injury, leading to a right percutaneous nephrostomy (PCN) that drained increasing amounts of fluid. The patient underwent five hemodialysis sessions for acute kidney injury and was treated conservatively with antibiotics and serial imaging. After stabilization, a double J stent was placed for urinary diversion, and the patient was discharged in stable condition with follow-up plans.

Discussion: This case highlights the effective non-operative management of high-grade renal trauma in stable patients, emphasizing the importance of multidisciplinary care and close monitoring.

Conclusion: Individualized conservative treatment strategies can lead to successful recovery and renal function preservation in high-grade renal trauma, underscoring the need for careful patient selection and monitoring.

"**Unveiling Hidden Wounds: A Journey Through the Layers of Abdominal Trauma in a Pediatric Case" – A case report**

DR SIDDHARTH SAHIL

Trauma surgeons face challenges in distinguishing between negative laparotomy and missed abdominal injuries, particularly in pediatric cases. This report details a rare instance of rectal perforation in a 7-yearold boy misdiagnosed as appendicitis. The patient presented with a 2-day history of abdominal pain and distension, with imaging indicating pneumoperitoneum. Initial laparotomy revealed pus and a suspected sealed appendix, leading to an appendectomy. However, on postoperative day 3, recurring pain and fecal output from a pelvic drain prompted further investigation. The mother eventually revealed a fall onto an iron rod, necessitating a re-exploratory laparotomy that identified the rectal perforation. The injury was repaired, and a colostomy was performed. Postoperative management included addressing complications such as an infected suture line. The patient ultimately recovered and was discharged. This case emphasizes the critical importance of thorough history-taking, the need for considering rectal injuries in trauma assessments, and the value of prompt surgical intervention for successful outcomes

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Abstract: Penetrating Injuries to the Common Carotid Artery: A Case Report

Shankarnath S

Penetrating injuries to the carotid artery (CA) are rare but life-threatening, often from stab or gunshot wounds, posing risks of rapid blood loss and cerebral ischemia. This report discusses two cases: a 22-year-old male with a knife stab and a 17-year-old male with a gunshot wound. Methods: Both patients received airway control and volume resuscitation, followed by imaging and immediate surgical or interventional radiology interventions. Results: Case 1 (Knife Injury): Imaging revealed a filling defect in the right internal carotid artery. Successful ICA stenting and MCA thrombolysis improved the patient's neurological status, allowing discharge.Case 2 (Gunshot Injury): Imaging showed a pseudoaneurysm of the left common carotid artery. The patient underwent elective surgery with uneventful postoperative recovery. Conclusion: Prompt identification and intervention are crucial for minimizing morbidity and mortality in CA injuries. Knife injuries typically allow for direct repair, while gunshot wounds complicate treatment due to extensive damage. Early resuscitation and tailored management are vital for better outcomes.

Sugarcane Penetrating Injury to Eye Causing Contralateral Optic Neuropathy and Monocular Blindness: A Case Report

Dr. Shahnawaz Ahmad

A 41-year-old truck driver experienced a rare penetrating eye injury from a sugarcane fragment during a road accident, resulting in significant complications. The sugarcane lodged in the right eye orbit, extending into the ethmoid sinus and reaching the left optic canal. Despite immediate medical intervention, the patient suffered irreversible vision loss in the left eye due to optic nerve damage. Imaging studies confirmed the foreign body's trajectory, and surgical removal was performed successfully. However, the case emphasizes the critical nature of early diagnosis and intervention in penetrating orbital trauma, highlighting that even successful extraction of the foreign body may not prevent long-term complications like vision loss. This scenario underscores the need for thorough evaluation and prompt action to optimize outcomes in such injuries.

Surviving the Impact: Advanced Trauma Care in a Multi-Limb Injury Case – A case report

DR AASHISH PUROHIT

This case study focuses on a 26-year-old male truck driver who sustained severe injuries in a road traffic accident (RTA). The initial FAST scan indicated mild free fluid, leading to immediate interventions, including a right below-knee amputation and fixation of limb fractures. Post-operative ICU monitoring revealed increased free fluid, necessitating an exploratory laparotomy that identified and addressed ileal perforations. Following these interventions, the patient stabilized and gradually recovered, eventually transitioning to oral feeds. The case emphasizes the critical role of timely surgical intervention, rapid decision-making, and advanced trauma care techniques in achieving positive outcomes in complex trauma cases resulting from RTAs.

TITLE: SYNERGISTIC INFECTIONS

Dr. S. Bhattacharya

Synergistic infections are a progressive, rapidly spreading infection located in the deep fascia with secondary thrombosis of micro-circulation and necrosis of the subcutaneous tissue and skin and rarely muscles and aponeurosis too. It has a quiet beginning with edema and erythema but pain out of proportion to findings. Purplish discoloration & blistering follows with 'dishwater' colored fluid drainage, crepitus and tracking of erythema or tenderness. Rapid progression of disease can only be avoided by high index of suspicion for an early diagnosis. Proper wound management, Antibiotics and supportive therapy remain the tripod of management. These patients with compromised immune status need an early debridement. Negative pressure wound therapy and hyperbaric oxygen therapy may help to tide over the crisis. Treating septic shock, monitoring nutrition and pain management are vital for treating these patients.

The Comprehensive Management and Outcomes of Extremity Vascular Injuries: Insights from a Level One Trauma Centre

Vishnu Tejo Muddu

Background: Traumatic vascular injuries can lead to significant limb loss despite low mortality; effective management is crucial. Objective: Evaluate management strategies and outcomes for extremity vascular injuries at our trauma centre. Methods: Retrospective analysis of 103 cases from February 2023 to January 2024, assessing demographics, injury mechanisms, and outcomes.

Results: Demographics: Average age 23, mostly male (90.64%).

Causes: Primarily road traffic accidents (65.04%).

Injuries: Most commonly the popliteal artery (33.98%).

Management: Vascular repair in 62.13%; post-repair mortality 3.1%.

Discussion: Late presentations increased complications and amputations, highlighting the need for improved early detection.Conclusion: Timely intervention is essential for better outcomes in extremity vascular injuries. Addressing delays in presentation is crucial

The influence of prehospital care parameters on the outcome of adult trauma patients admitted in a tertiary care hospital in north-western India

Aishwarya Jain

Introduction: Few studies have examined prehospital care for trauma patients in India, particularly in non-urban areas. This study aims to gather prehospital care and epidemiological data on adult trauma patients and analyze its correlation with mortality and hospital stay length in a tertiary care hospital in north-western India. Methods: A three-month prospective observational study included adult trauma patients admitted to the emergency department within 48 hours of injury. Data on demographics, time to arrival, transport used, and prehospital care received were collected. Patients were followed up in the ward or ICU until discharge, death, or a maximum of 30 days post-admission. Results: In the study of 100 patients, only 4% received prehospital care, with 65 referred from primary/secondary facilities due to resource shortages. Mortality was 0% for those with prehospital care versus 7.3% for those without, while mean hospital stays were not significantly different. Conclusion: India's prehospital care remains underdeveloped, emphasizing "Scoop and Run" over "Stay and Play," likely due to inadequate training and resources. To improve trauma care, it's essential to implement interventions like bystander training, ambulance personnel education, and community awareness.

The tightrope walk : Balancing Anticoagulation and neurological integrity”

DR MANALI DESMUKH

Introduction: Traumatic brain injury (TBI) poses challenges in managing complications like venous thromboembolism (VTE). Balancing VTE prevention with minimizing neurological deterioration is crucial, especially in immobilized patients needing surgery. Materials and Methods: A 32-year-old male presented to ER after a road traffic accident, sustaining a head and left lower limb injury with a history of loss of consciousness, a Glasgow Coma Scale (GCS) of E4V5M6 and was hemodynamically stable. Initial NCCT brain imaging revealed contusions in the left frontoparietal region, and X-ray confirmed a left midshaft femur fracture. On post-trauma day 2, the patient was cleared for orthopedic surgical intervention and received pharmacologic anticoagulation. On day 4, patient was shifted to OR for planned orthopaedic procedure. However, the surgery was deferred due to significant decline in neurological status, with repeat CT showing worsening contusions and intraventricular hemorrhage, necessitating a return to neurosurgical management. Results: This case illustrates how safety measures, such as chemical VTE prophylaxis, can become a risk factor for neurological deterioration in TBI patients, particularly those who are immobilized and undergoing surgical procedures. Conclusion: There are no universally accepted guidelines for postoperative anticoagulation in TBI patients. Management should be individualized, weighing the risks of thromboembolism against potential neurological decline. Further studies are needed to develop standardized protocols for VTE prophylaxis in this high-risk population.

Title: Prevalence of Deep Vein Thrombosis in Surgically and Conservatively Treated Patients of Acute Injuries Around Knee

Shubhajeet Roy1, Mayank Mahendra2, Devendra Sharma2

Introduction: This study investigates the occurrence of deep vein thrombosis (DVT) in patients hospitalized for acute knee injuries, particularly following trauma. Methods: Two patient groups were analyzed: Group A included those undergoing surgeries for knee injuries, while Group B comprised conservatively treated patients. Patients with bleeding disorders, known hypercoagulable states, pre-existing DVT, or those undergoing certain arthroscopic surgeries were excluded. DVT assessment was performed using Doppler ultrasound. Results: A total of 148 patients (114 in Group A, 34 in Group B) were studied. DVT or pulmonary embolism (VTE) developed in 32 patients, with a significantly higher rate in Group B (64.71%) compared to Group A (8.77%) ($p < 0.0001$). Proximal DVT was observed in 71% of cases. Among those with diabetes, 37.5% had DVT ($p = 0.02$). Post-operative INR values were significantly higher in VTE patients compared to those without VTE ($p < 0.0001$). Six patients died, two of whom were due to DVT. Conclusion: The study highlights a high prevalence of DVT and pulmonary embolism, emphasizing the need for vigilant screening and prophylaxis, particularly in conservatively treated patients. Diabetes mellitus was identified as a significant risk factor for VTE.

Title: Long-Term Renal Function After Severe Trauma: A Pilot Study Analysis

Authors: Mehul Saxena*, Yadvendra Dheer, Shubhajeet Roy, Utkarsh Singh, Satyawati Deswal, Aastha Upadhyay, Samir Misra, Sandeep Tiwari, Md Kaif Khan, Mohammed Ahsan

Introduction: Renal trauma accounts for 1% of all trauma cases, yet research on its long-term impact on renal function is limited. This study examines the long-term outcomes of Grade 3 and above renal injuries, using the AAST classification. Materials and Methods: The study included patients with Grade 3 and above renal injuries from at least six months prior, excluding those who underwent nephrectomy or had comorbidities like diabetes or hypertension. Evaluations included serum urea, creatinine levels, and DMSA and DTPA scans. Results: A total of 36 patients (27 male, 9 female) were studied, with a mean age of 20.50 years. Nine patients each had Grade 3, 4, and 5 injuries. The affected kidney's split function was 31.83%, with dye uptake at 35.71%. Multivariate analysis showed that follow-up time and female gender correlated with higher GFR and dye uptake, while Grade 5 injuries were linked to lower GFR and dye uptake. Conclusion: Grade 5 injuries resulted in significant renal function decline, indicating irreversible damage, while Grade 4 injuries showed less impairment. Longer follow-up times correlated with improved kidney function, highlighting the potential for recovery

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Title: Efficacy and satisfaction with Teleconsultation in Trauma patients treated at a Level- I Trauma Centre:A Prospective observational Study

Rohit Kumar Chauhan

Background: Regular hospital visits can be very expensive for patients, particularly in rural areas, due to travel costs and logistical challenges. Teleconsultations offer a promising alternative by reducing both patient and healthcare provider time and costs. Objective: This study aims to evaluate the clinical efficacy, patient satisfaction, financial benefits, and time saved through teleconsultation in trauma patients. Methods: It is a prospective observational study involving patients admitted in trauma surgery who received teleconsultations from July 2023 to July 2024. Clinical efficacy was measured by recovery rates and complication occurrences. Patient satisfaction was assessed using Telehealth Satisfaction Scale. Financial benefits were determined by comparing costs between teleconsultation and in-person visits, while time saved was calculated based on reductions in travel time. Results: 86 patients were enrolled in the study out of which 76.74 % were male and 23.25 % were female. Mean duration of the consultation was 10.53 mins. Based on the questionnaire used, the following results were obtained: 76.74% satisfaction, 72.09 % acceptance, 88.72 % were in favour of converting in-person visits to teleconsultation and 88.37% patients felt their queries were answered. Conclusion: Teleconsultation is a viable and efficient alternative to in-person consultations in trauma care, offering cost savings and reducing travel time, although technical issues need addressing for enhancing patient experience.

Title - Out of Sight- Traumatic Herniation of an Intact Globe into the Ethmoidal Sinus

Authors- Medha Rai, Shiva, Devanand, Kanhaiya

Introduction: Orbital fractures are critical within cranio-maxillofacial (CMF) trauma due to their cosmetic, functional, and psychological effects, often presenting as emergencies. Case Report: A 70-year-old male experienced acute facial trauma resulting in marked periorbital swelling, a narrow interpalpebral fissure, and vision loss in the right eye. Examination revealed the globe absent from the orbit, with CT scans showing it displaced into the ethmoidal sinus. The globe was repositioned via a transconjunctival approach, but delayed treatment resulted in a poor visual prognosis. Discussion: This rare case of complete traumatic dislocation of an intact globe into the ethmoidal sinus emphasizes the necessity of globe salvage, despite the potential for poor visual outcomes. It highlights the importance of prompt diagnosis and management of blunt orbital trauma and explores the underlying mechanisms of such injuries.

TITLE: “RISE FROM THE ASHES”- STORY OF A TRAUMA SURVIVER.
SPEAKER: Dr.KRISHNAKUMAR RS

CASE SUMMARY : Trauma-related injuries pose significant public health challenges, leading to high morbidity, disability, and socioeconomic issues. Advances in trauma care have improved outcomes for polytrauma patients. This report details the case of a 19-year-old male involved in a motor vehicle crash, presenting with pelvic injuries and hemorrhagic shock. He received massive transfusions, which resulted in complications such as TRALI, ARDS, VAP, sepsis, and DIC. Despite recovering from these immediate issues, he faced severe AKI and a brain hematoma requiring continuous renal replacement therapy. Additional complications included a bladder fistula and testicular hypoperfusion, leading to orchidectomy. Following extensive treatment, he is now on the path to recovery with ongoing support. DISCUSSION POINTS:
A structured approach involving the use of ATLS algorithms and care optimisation based on clinical and physiological parameters will result in subsequent improved outcomes in polytrauma victims.
Timely multidisciplinary approach to victims can create large impacts on their survival.

Impact of psychosocial intervention on quality of life in patients with post traumatic limb amputation
Milan Deep

Background: Each year, approximately 1.19 million people die from trauma, with an additional 20-50 million experiencing disabilities, primarily due to road traffic injuries. These injuries often lead to amputations, which have a profound psychological impact compared to other medical reasons. This study aimed to evaluate the effect of psychosocial interventions on the quality of life of post-traumatic amputees. Methods: A randomized controlled trial included 74 participants (ages >18, coherent, with social support, no psychological illness history) who underwent traumatic extremity amputations. They were divided into two groups: Group A received conventional care, while Group B received psychosocial intervention alongside conventional care for 7 weeks. Assessments were conducted at baseline and after 8 weeks. Results: Both groups showed significant improvements in quality of life, with no significant difference between them. Levels of depression, anxiety, and stress decreased significantly in both groups, but again, without significant differences. However, Group B exhibited a notable improvement in body image ($p=0.023$). Conclusion: The study found no significant advantages of psychosocial intervention over conventional care in terms of quality of life, depression, anxiety, or stress, aside from body image. Further research with larger samples and longer intervention durations may yield different results.

TITLE: A prospective randomised, double-blinded study on the cerebral haemodynamic effects of ketamine versus propofol sedation in patients with severe traumatic brain injury admitted in trauma intensive care

Venkata V Naidu Bongarala

Introduction: We conceptualized the present study to compare the effects of continuous ketamine versus propofol sedation on cerebral hemodynamic in adult trauma patients admitted to intensive care with severe brain injury. Our primary objective was to observe the effect of continuous infusion of either sedative on duration of intracranial pressure excursions. Main secondary objectives included transcranial Doppler values at ICP excursion, ONSD at ICP excursions, mean arterial blood pressure, vasopressor use as rescue therapy, GCS at discharge and GOS-E at 3 month follow up. Materials and methods: 40 patients of severe traumatic brain injury requiring intubation and mechanical ventilation were enrolled into the study and 20 each were allocated to both groups. Intraparenchymal ICP catheter was placed and data such as mean arterial pressure, TCD middle cerebral artery pulsatility index (MCA PI), cerebral perfusion pressure, intracranial pressure were made note of. Results: Both the groups had comparable demographics. Duration of ICP excursions were higher in the propofol group, compared to ketamine (p 0.047). TCD MCA pulsatility indices correlated well with the ICP excursions and values were higher in the propofol group (1.24 versus 0.86, p 0.03). ONSD values also correlated well with the ICP excursion (0.64±0.23cm, p 0.02). Significantly higher percentage of patients (80%) in the propofol group required rescue vasopressor therapy to keep CPP in targeted range (p 0.03). Discussion: The results of our study showed that adult trauma patients admitted in intensive care following severe traumatic head injuries and receiving ketamine sedation had better hemodynamic profiles at various study time points when compared with propofol sedation. Mortality by discharge from intensive care was seen in three patients from propofol group only whereas neurosurgical intervention and GOS-E at 90 days was comparable between the groups. Conclusion: Ketamine sedation in acute traumatic brain injury maintained cerebral hemodynamics and reduced ICP excursions, without the need for rescue vasopressor therapy, when compared to propofol. There was also strong correlation between invasive ICP monitoring, TCD and ONSD values at ICP excursion timepoints.

UNUSUAL PRESENTATION OF TERATOMA AS A TRAUMATIC HEMATOCELE.

Authors- Dr. Mohit Vardey, Dr PK Baviskar, Dr Sharath Krishna, Dr Akhil Guntupali, Dr. Aakanksha Jagnani

Introduction: Scrotal swelling can indicate a range of conditions, from benign to malignant, including testicular teratomas, which are more common in men aged 20-40. Testicular teratomas contain cells from all germ layers and can arise post-puberty. This report presents a case of a 23-year-old male with a left testicular teratoma, following trauma from "birthday bumps." Objective: To emphasize the need for suspicion of testicular tumors despite negative tumor markers and atypical clinical presentations. Case Summary: The patient presented with a scrotal swelling three months post-trauma. Examination revealed a firm, non-transilluminating mass, with the left testis non-palpable. Ultrasound suggested an intratesticular hematoma and encysted hydrocele. Scrotal exploration showed a friable left testis with multiple cysts, leading to a left-sided high inguinal orchidectomy. Histopathological evaluation confirmed a post-pubertal teratoma. Conclusion: This case highlights the rare possibility of malignancy in traumatic scrotal swellings, underscoring the importance of thorough evaluation even when initial findings do not suggest malignancy. 4o mini

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Title: The Role of Trauma Nurses in Managing Mild Head Injuries

Archana

Abstract:

This paper highlights the vital role of trauma nurses in managing mild head injuries, commonly arising from falls and minor accidents. Through a retrospective study of 50 patients, it demonstrates how nurses conduct thorough assessments, monitor symptoms, and deliver immediate care. They are essential in educating patients and families about potential risks and follow-up care, enhancing safety post-discharge. Additionally, trauma nurses coordinate with healthcare teams to create personalized care plans. The conclusion stresses the need for ongoing education and training to address challenges like increasing patient loads, ensuring trauma nurses can effectively manage mild head injuries.

Title: The Critical Role of Trauma Nurses in Managing Mass Casualty Incidents

Mansi

Abstract:

The paper examines the essential role of trauma nurses in managing mass casualty incidents (MCIs), where patient numbers often exceed hospital capabilities. Based on a study of 12 MCIs at a Level One Trauma Center from January 2022 to January 2024, the research highlights nurses' critical functions in triage, initial assessment, and resuscitation under high-stress conditions. Despite facing challenges like resource shortages and staffing issues, trauma nurses displayed resilience and adaptability, significantly influencing patient outcomes. The conclusion emphasizes the need for improved training and resource allocation to better prepare trauma nurses for future MCIs.

ROLE OF ANGIOEMBOLISATION IN SOLID ORGAN INJURY IN BLUNT ABDOMINAL TRAUMA: AN AMBISPECTIVE OBSERVATIONAL STUDY

AKANKSHA KUMARI

Aim : To study and assess the role of angioembolization in solid organ injury in blunt abdominal trauma

Objectives : To measure outcome after angioembolization, To assess the length of hospital stay after angioembolization

Method:We conducted an ambispective study for all blunt abdominal trauma patients who underwent angioembolisation for post traumatic solid organ injury during the period of July 2019 to January 2024. Patients' demographic, clinical profiles, angiography procedures and outcomes were included and analysed for age, gender, mechanism of injury, organ involved, injury severity, management, complications, hospital stay and outcome.

Results: A total of 81 patients of blunt abdominal trauma with solid organ injury underwent angioembolisation. The majority of the subjects were male (91.4%), and mean age of the study subjects was 27.02±14.31 years. The most common mechanism of injury was road traffic accidents (60.5%) and the most common organ injured was liver (48.1%). The most common indication for angioembolisation was blush on initial CECT scan (48.1%). Coils were the most commonly used embolic material (45.7%). Most common complication documented was infection (8.6%) followed by re-bleed (4.94%). Average length of hospital stays among subjects who underwent angioembolization was 15.06±9.25 days. The overall cohort mortality was 1.2%.

Conclusion: Angioembolisation is an effective intervention in management of solid organ injury in blunt abdominal trauma. The high success rates and minimal complication rates make angioembolisation an essential and important adjunct to non-operative management for solid organ injuries. Right timing, meticulous patient selection and correct execution will lead to better and favourable outcomes.

Department Of Trauma Surgery

Faculties & Residents of the department

Residents

Faculty with staff of the department

दिल में धंसी सरिया निकालकर दिया जीवनदान

राज्य ब्यूरो, लखनऊ

›› हृदय के ऊपरी, निचले और मध्य भाग में छेद कर गई थी सरिया

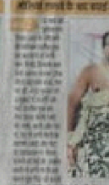
सर्जरी करने वाली केजीएमयू के चिकित्सकों की टीम। अमृत विचार

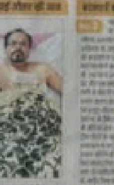
हृदय के प्रमुख ऑपरेशन हार्ट ऑफ हार्ट लंग मशीन में डालकर किए जाते हैं, लेकिन इस मामले में हमारे पास ऐसा करने का समय नहीं था। मरीज तीन दिन तक वेंटिलेटर पर रहने के बाद नौ दिन आईसीयू में रहा है, अब वह सामान्य वार्ड में है। इस सर्जरी ट्रांसफ्यूजन मेडिसिन की प्रो. तूलिका चंद्रा द्वारा छह यूनिट खून उपलब्ध कराया गया था।
– प्रो. संदीप तिवारी, विभागाध्यक्ष ट्रामा सर्जरी

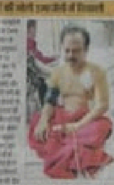
NEXT CITY FOCUS

ट्रॉमा के सर्जन बने भगवान, 3 को दी जिंदगी

SPECIAL







केजीएमयू ट्रामा सर्जरी विभाग के स्थापना दिवस पर विभाग के अध्यक्ष प्रो. संदीप तिवारी ने कहा

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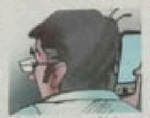

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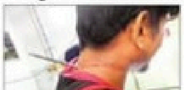
राज्य स्वच्छ गंगा मिशन, उ

ई-निविदा सूचना

तीन घंटे में बना प्लान, आधे घंटे में गर्दन से निकाला पेचक

ट्रॉमा के डॉक्टरों के सामने थी चुनौती : पेचकस के चलते सीटी स्कैन हो सकता था और न ही एमआरआई, एक्स-रे से भी नहीं मिल रही थ



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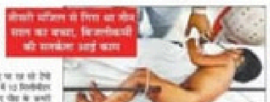

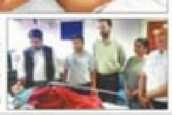

बच्चे के हाथ में आर-पार हुआ भाला, डॉक्टरों ने बचायी जान

बांह में धंसा भाला, सर्जरी कर निकाला

लखनऊ। केजीएमयू के डॉक्टरों ने उन्नाव निवासी बच्चे की बांह में धंसे भाले को सर्जरी कर निकाला। भाला इस कदर घुसा था कि बच्चे को लिटा कर एनेस्थीसिया देना मुश्किल था। चिकित्सकों ने सर्जरी कर क्षतिग्रस्त नसों को दुरुस्त कर दिया और अब बच्चे की हालत खतरे से बाहर है।

उन्नाव निवासी नंदलाल का बेटा अनिकेत (13) सोमवार दोपहर करीब एक बजे छप्पर से गिरा और नीचे रखा भाला उसके दाहिने हाथ में घुस गया। घर वाले उसे लेकर किसी तरह ट्रॉमा सेंटर पहुंचे। खून अधिक बहने के कारण बच्चे की हालत गंभीर थी। ट्रॉमा सर्जरी विभाग के डॉ. समीर मिश्र ने बताया कि उनके साथ डॉ. नरेंद्र, डॉ. यादवेंद्र और डॉ. वैभव ने करीब एक घंटे तक ऑपरेशन किया। उन्होंने बताया कि धमनी से खून का रिसाव हो रहा था। मांसपेशियों में गंभीर चोट थी। नसें भी क्षतिग्रस्त थीं। इन्हें दुरुस्त किया गया।

'दुर्घटना के घंटे भर में मिले इलाज'

दैनिक जागरण

#5PMTalks

डॉ. संदीप तिवारी • जागरण

ATROCOX-T4 TAB

(ETORICOXIB 60MG+THIOCOLCHICOSIDE 4MG TABLET)

IMPROVE PAIN MANAGEMENT.

N-CAL K2-7 CAP

(CALCIUM CORBONATE 500 MG+CALCITROL 0.25MCG

+ VITAMIN K2-7 45MCG+ CYNOCOBALAMIN 2.2 MCG+ MAGNESIUM OXIDE 50 MG +

BORON 1.5 MG ZINC OXIDE 7.5 MG CAPSULE)

THE COMPLETE SOLUTION OF CALCIUM.

ITYCLOTIN 1MIU INJ

(COLISTIMITHATE SODIUM INJECTION)

ZETPRO PROTIEN POWDER

A BALANCE PROTIEN SUPPLEMENT FORTIFIED WITH ESSENTIAL VITAMINS, MINERALS & PROTIEN POWDER.

OPTILENE – POLYPROPYLENE & POLYETHYLENE SUTURES

MONOFILAMENT SUTURES

ABSORBABLE BRAIDED SUTURES

SKIN ADHESIVES

B|BRAUN

1 B. Braun Group

BIOSCAN® RESEARCH
An ISO 13485:2016 Company

CEREBO®

Instant Intracranial Bleed Detector for Traumatic Brain Injury

CLINICALLY VALIDATED

- Sensitivity > 97%
- Specificity > 94.2%
- Accuracy > 94.3%

CLINICAL PARTNERS

CIVIL HOSPITAL Amdavad

USEFULNESS OF CEREBO

CEREBO USE CASES	Hospital With CT	Hospital Without CT	Ambulances	Defense
Pre-symptomatic screening of trauma patients to reduce the number of false negatives in mild TBI	✔	✔	✔	✔
Monitoring the TBI patient for early detection of delayed hemorrhages during conservative treatment	✔	✔		✔
Rapid and objective triaging of trauma patients by paramedic staff to reduce the burden of CT scans especially at night	✔			✔
Patient Prioritization for CT scan during high patient inflow	✔		✔	✔
Accurate triaging to reduce the number of CT/MRI referrals especially in Infants and Pregnant Women	✔	✔	✔	
Reducing the mean transfer time of TBI patient from an austere health center to the nearest neuro-facility		✔	✔	✔
Reducing the number of repeat CT scans of TBI patients under observation	✔			✔

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INDIAN SOCIETY FOR TRAUMA AND ACUTE CARE

2019

UP CHAPTER