Aster HOSPITALS & CLINICS

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HealthNews DIGEST

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34th Edition

Dr. Sherbaz Bichu

CEO & Specialist Anaesthetist
Aster Hospitals & Clinics, UAE

On behalf of Aster's leadership, I am pleased to welcome you to the 34th edition of our HealthNews Digest.

As we continue to strengthen our mission of delivering specialised, patient-centric, and preventive healthcare across our community, I am delighted to announce the opening of the **Aster 360 Care Diabetes Clinic at Aster Clinic, Al Qusais (Damascus Street),** designed to provide complete diabetes care, from diagnosis to diet, medication to mindset, all under one roof.

With offerings such as Comprehensive Diabetes Care, Personalised Nutrition and Lifestyle Programs, Early Detection and Expert Medical Management, Diabetes Self-Management Training (DSMT), and Mental and Preventive Health Support, the Aster 360 Care model ensures a complete, patient-centred, and outcome-driven approach. This marks a significant milestone in our journey toward integrated management of chronic diseases.

Currently, our core specialities supporting this service include Endocrinology, Internal Medicine, Ophthalmology, and Neurology. As the clinic evolves, we envision expanding our specialities to enhance it further.

Together, we will continue to strengthen our legacy of excellence and lead the way in delivering world-class care.

Dr. Ramanathan V

Medical Director
Aster Hospitals & Clinics, UAE

As the Group Medical Director of Aster Hospitals and Clinics, I am delighted to welcome you to the 34th edition of HealthNews.

This year has been particularly remarkable for **Aster Hospitals UAE,** as it has been recognised as a **Centre of Excellence in the Cardiology category,** and **Dr. Sandeep Shrivastava, Cardiothoracic Surgeon** at Aster Hospital, Al Qusais, has been honoured as the **Cardiology Expert of the Year** at the ET Healthcare Awards, Middle East.

These prestigious recognitions reflect our unwavering dedication to advancing cardiac care and the exceptional contributions of our team in delivering superior clinical outcomes. From preventive cardiology and early risk detection to advanced cardiac surgeries and interventional therapies, the evolution of the Cardiac Department into the Center of Advanced Cardiac Sciences marks not just the individual milestones but the collective growth of a team that continues to push boundaries.

As we celebrate these milestones, I want to extend my heartfelt gratitude to all the clinicians, nurses, and allied healthcare professionals whose expertise and collaboration made this success possible.

Dr. Anil Kumar Chintada
Orthopaedics (Specialist)

Dr. Sandeep Kuchi
Paediatrics & Neonatology (Specialist)

Successful Surgical Stabilisation of Unstable Left Elbow Dislocation in a 1-day-old Baby at Aster Hospital, Al Qusais, Dubai

PRESENTATION

- 1-day-old female baby, 2.35 kg, normal delivery in a breech presentation
- One of the twin babies cried after suction and stimulation, weak cry with HR<100/min. Bag and mass ventilation given for 30 seconds. Heart rate, colour and tone improved (HR>100/min). Continued Neopuff for 30 seconds. APGAR Score 6 at 1 minute and 8 at 5 minutes.
- Shifted the baby to the NICU for observation, stabilised and shifted to the ward alongside the mother. Vaccinations were given. The baby passed urine and meconium within the first 24 hours of life.
- Another twin was healthy
- Patient's mother: medical history of hypothyroidism

FINDINGS

During Examination:

- Weight: 2.35 kg
- Length: 46 cm
- Head Circumference: 32.5 cm
- RR: 56/min; HR: 146/min
- Clinically and hemodynamically stable
- Feeding well on direct breastfeeding

Observations:

- Unable to move the left upper limb compared to the right
- Asymmetric and incomplete Moro on the left side

Intervention:

- Orthopaedic consultation was sought immediately.

Clinical Findings:

- No swelling or ecchymosis/bruises
- No tenderness/crepitus
- Abnormal mobility: present at the elbow
- Abnormal bony prominences felt
- No distal vascular deficits

Pre-op images

DIAGNOSIS

- Unstable Left Elbow Dislocation

COURSE

The baby was admitted for the surgical stabilisation of the left elbow dislocation on day 2 of birth:

- Closed reduction under general anaesthesia was done and found to be unstable through the range of movement. Hence, stabilising the joint with an intra-articular K-wire and splint was decided on the table.
- Sterile preparation was done, and a 1.5 mm smooth K-wire was used and inserted distal to the physis from the olecranon into the distal humerus.

Post-op, distal pulses were well palpable, and the joint was stable.

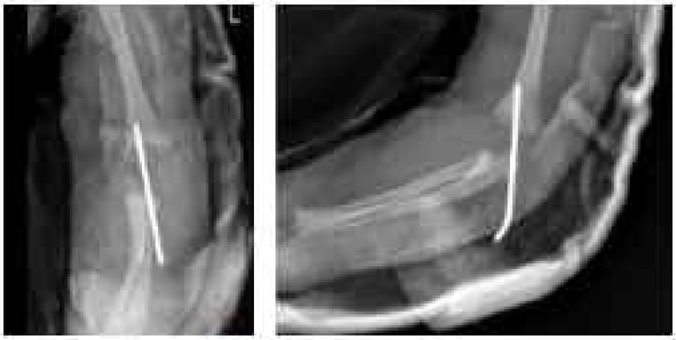
Intra-op images

POST PROCEDURE

The neonate was clinically and haemodynamically stable in room air and was subsequently treated for neonatal jaundice. She was active and feeding well at the time of discharge.

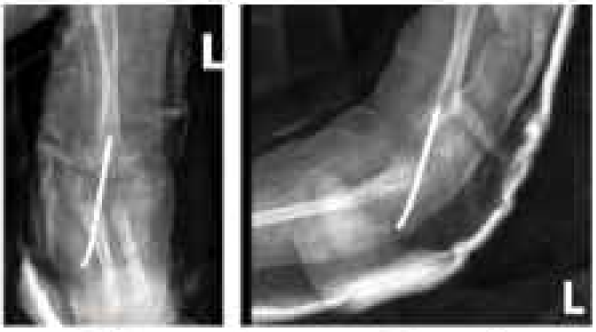
Discharge weight: 2.18 kg

Total transcutaneous bilirubin: within normal limits before discharge



Immediate post-op images

Her left upper limb was immobilised with an above-elbow splint for 3 weeks.



Follow-up images at 3 weeks

Post K-wire removal at 3 weeks

DISCUSSION

The baby was thoroughly examined and confirmed to have unstable elbow postero-medial (rare variety) dislocation with the help of radiological imaging. Hence, she was taken up for closed manipulation and percutaneous stabilisation under anaesthesia, after explaining and obtaining consent from the child's parents. Under anaesthesia, closed reduction was done and found to be unstable, even with minimal movement of the elbow. Hence, it was decided to proceed with percutaneous K-wire fixation from the olecranon to the distal humerus without damaging the physis of both the ulna and the humerus. Hence, only smooth pins were used, and a K-wire was passed in a single attempt.

Post fixation above elbow pop splint was applied and transferred to the ward. The baby was on regular follow-up and was improving.

At three weeks, we repeated the elbow radiographs, which showed a congruent joint and implant in situ. Clinically, the baby was able to move her shoulder, hand, and fingers actively.

Hence, she was planned for implant removal and physiotherapy thereafter. The implant was removed at 4 weeks post-op, and the elbow was reassessed. It was stable, and movement was adequate.

During the follow-up visits, her elbow movements, grip strength, and finger movements were found to be comparable with those of the contralateral upper limb.

CONCLUSION

Identifying defects in the limbs, thorough clinical examination of the affected joint and adjacent joints, accurate diagnosis, and prompt intervention will yield the best possible results.

REFERENCES

1. Sofu H, Gursu S, Camurcu Y, Yildirim T, Sahin V. Pure elbow dislocation in the paediatric age group. Int Orthop. 2016 Mar;40(3):541-5. doi: 10.1007/s00264-015-3074-2.
2. Kuhn MA, Ross G. Acute elbow dislocations. Orthop Clin North Am 2008 Apr;39(2):155-61, v. doi: 10.1016/j.ocl.2007.12.004.
3. Rasool MN. Dislocations of the elbow in children. J Bone Joint Surg Br 2004 Sep;86(7):1050-8. doi: 10.1302/0301-620x.86b7.14505.

Current Approaches to Polytrauma: From Pathophysiology to Advanced Clinical Management

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INTRODUCTION

Polytrauma ranks as the third most common cause of mortality and is a major cause of long-term disability worldwide (1). Injury severity score of more than 15 or an Abbreviated Injury Scale ≥ 3 in at least two body parts, with one or more physiologic parameters (hypotension, unconsciousness, acidosis, coagulopathy, and age ≥70 years) can be considered as polytrauma (2).

Motor vehicle crashes remain the leading cause, followed by injuries from self-harm and assault (3,4). Traumatic brain injury (TBI) accounts for around 12% of cases and is a major reason for both early and late deaths in polytrauma patients (5,6). Nearly 60% of patients die within the first 4 hours after injury, while about half of those patients with severe TBI (Glasgow Coma Scale (GCS) ≤ 8) do so within 2 hours of surgery (7).

Haemorrhage and TBI together represent the most common causes of death (6). Other conditions commonly seen as part of polytrauma include amputations, wounds, spinal cord and musculoskeletal injuries, burns, acute and chronic pain, auditory or visual impairments, post-traumatic stress disorder, and other mental health diagnoses (8).

The picture of a polytraumatised patient may change every day from shock to coagulopathy to acute respiratory distress syndrome (ARDS), sepsis, and multiple organ dysfunction syndrome (MODS) leading to morbidity and mortality in these patients (4). Early challenges can be even life-threatening, such as massive haemorrhage, septic shock, and the "lethal triad", while in later stages, mortality often arises from organ failure, wound infections, and thrombo-embolism (9).

Management of polytrauma requires resuscitation, damage control orthopaedics, and timely surgery and limb rehabilitation to reduce complications (9,10). A collaborative team, including trauma surgeons, anaesthetists, interventional radiologists, orthopaedic specialists, neurosurgeons, plastic or vascular surgeons and emergency physicians, is linked with improved outcomes (11).

Read this interesting article to get a comprehensive framework for polytrauma care and understand the crucial role of orthopaedic surgeons in improving outcomes through multidisciplinary collaboration and targeted surgical strategies.

PATHOPHYSIOLOGY OF POLYTRAUMA

Trauma is generally classified into penetrating, blunt, and deceleration types, though these categories often overlap in their causes and systemic effects (12).

Penetrating trauma causes rapid blood loss and eventually leads to hypovolemic shock, resulting in patients developing cold extremities, rapid heartbeat, low blood pressure, and fast breathing (12). Haemorrhage is still the primary preventable death among injured patients (13). To maintain circulation to vital organs such as the brain, heart, kidneys, liver, and colon, the body triggers the sympathetic nervous system and the renin–angiotensin–aldosterone system, which regulate vascular tone, heart rate, and fluid balance (12).

Yet, if bleeding continues, this compensatory response collapses into the "lethal triad" of coagulopathy, hypothermia, and acidosis (Figure 1), a cycle that exacerbates bleeding and worsens patient outcomes (14).

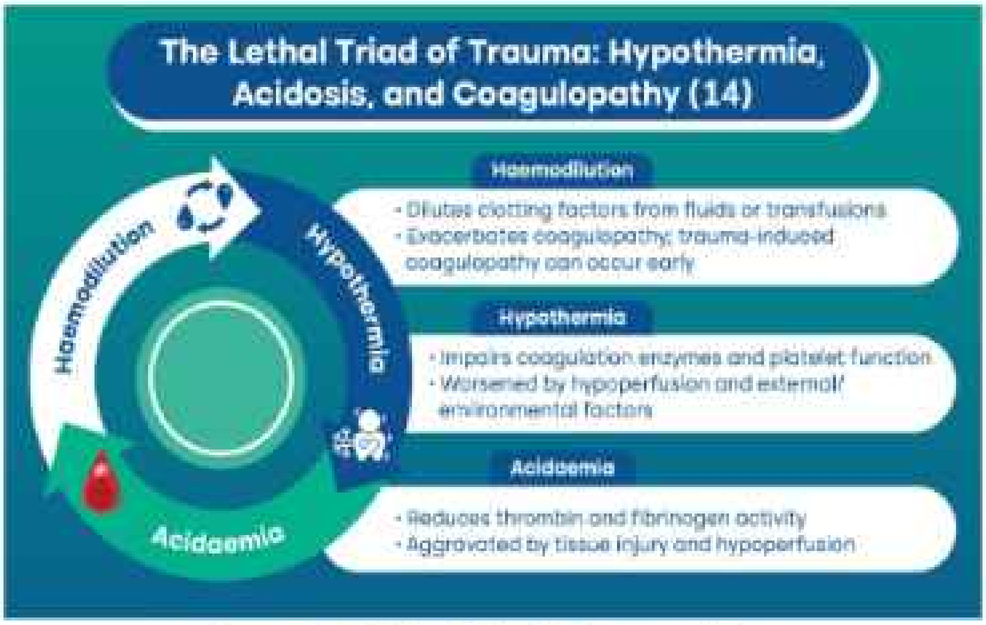

Figure 1: Lethal triad of trauma (14)

Deceleration trauma occurs when severe shear stress injures fixed organs (12). In the brain, this results in contusions, oedema, and the release of excitatory neurotransmitters and free radicals, causing secondary injury (12). In the thorax, high shearing stress can rupture the aorta at the mobile aortic isthmus, where the vessel is tethered, leading to catastrophic haemorrhage (12). This injury and shock trigger inflammation, which, when substantial, can cause further tissue damage (15).

Blunt trauma, common in motor vehicle crashes, produces extensive tissue disruption (12). The abdomen is particularly vulnerable as blunt forces induce haemorrhage and a rapid inflammatory response (12). Oedema in acute inflammation arises from endothelial contraction and damage (12).

Complications from these injuries often extend beyond the initial insult (16). ARDS is a common outcome, especially in patients with chest trauma, and is linked to higher rates of mortality and morbidity (16). Survivors may face lasting cognitive, functional, and psychiatric issues that lower the quality of life (16).

ARDS is a life-threatening, clinically defined condition with heterogeneous causes and courses (16). It may be triggered by direct insults, such as pneumonia, lung contusion, aspiration, inhalation injury, or fat embolism from multiple fractures or indirect insults, including sepsis, transfusions, pancreatitis, non-chest trauma and even surgical interventions (16). These mechanism leads to epithelial and endothelial injury, diffuse alveolar damage and impaired oxygen exchange (16).

Sepsis is a disorder of uncontrolled inflammatory and immune activity that can trigger acute organ failure (17). The high mortality in polytrauma patients with sepsis is mainly caused by organ failure driven by excessive immune-mediated inflammation (17). Pathogens and damage-associated molecular patterns activate innate and adaptive immune cells, producing a hyperinflammatory state (17). Sepsis can develop in patients with medical co-morbidities like chronic kidney disease, alcoholic or non-alcoholic hepatic disorders, diabetes and even in patients aged more than 70 years (17,18).

Cytokine release helps block infection, but can also cause severe tissue damage (17). When pathogens enter damaged vessels, widespread inflammation and immune imbalance (Systemic inflammatory response syndrome) may follow, resulting in multi-organ injury (17).

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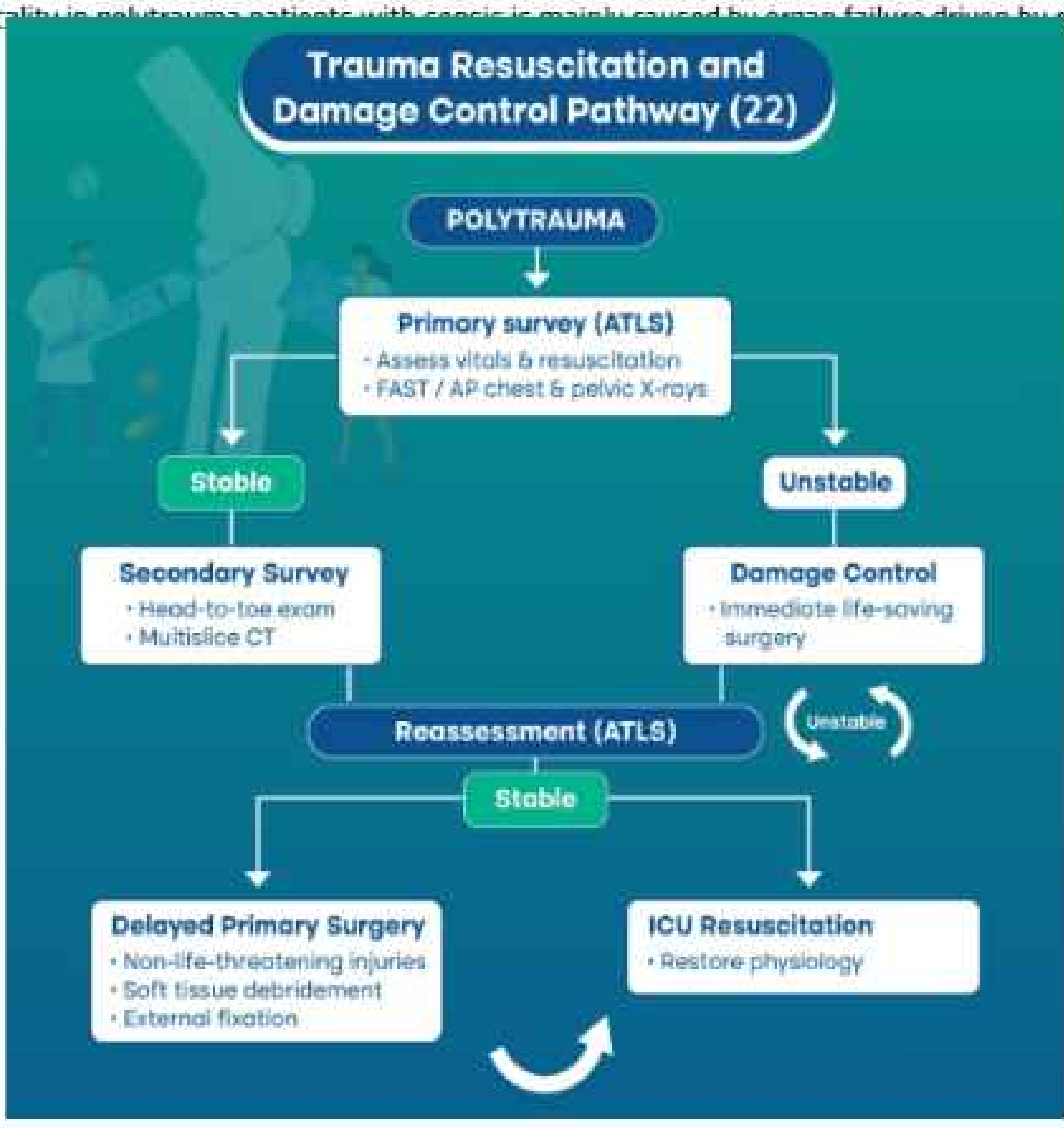

Figure 2: ATLS guided systematic pathway for managing polytrauma (22)

(Abbreviations: ATLS-Advanced Trauma Life Support; FAST- Focused Assessment with Sonography for Trauma; AP- Anteroposterior; CT- computed tomography; ICU- intensive care unit)

Initial imaging is an essential part of the trauma bay assessment (23). Trauma series radiographs (chest, pelvis, and cervical spine films) remain the first-line tools for rapid evaluation (23). Chest X-ray has 100% specificity for detecting pneumothorax and other thoracic injuries, while pelvic radiographs continue to be valuable in unstable or fragile patients when computed tomography (CT) is not immediately feasible (24).

The Focused Assessment with Sonography in Trauma (FAST) approach has largely replaced diagnostic peritoneal lavage (24). FAST detects hemoperitoneum, cardiac blood, and haemothorax, while extended FAST (eFAST) adds suprapubic and thoracic views to detect rectovesical/rectouterine pouch fluid and pneumothorax (24). In haemodynamically stable patients with negative FAST, CT is recommended for ruling out occult injuries and supporting safe discharge (24).

Imaging forms a crucial component in reducing mortality in polytrauma by guiding accurate diagnosis and supporting both emergency and definitive treatment, with CT serving as the central modality in most evaluations (24).

The major CT applications in polytrauma include:

- **Whole-body CT** improves diagnostic accuracy, shortens time to intervention, and detects unsuspected injuries; the drawback is higher radiation exposure (14–22.7 mSv) (24).
- **Selective CT** uses a lower radiation dose and a targeted approach; risk of missed injuries in complex trauma (24).
- **CT angiography** is a widely used tool for evaluating vascular trauma in extremities and the thorax (24).
- **Digital subtraction angiography** serves both diagnostic and therapeutic purposes, particularly in cases of active bleeding or pseudoaneurysm (24).

Magnetic resonance imaging (MRI) is not recommended in emergencies and is used only as a second-line tool, mainly for suspected spinal cord or pancreatic duct injuries, where magnetic resonance cholangiopancreatography (MRCP) shows 100% accuracy (24). It is also valuable for follow-up in young and pregnant patients (24). Recent evidence shows that Dual-Energy CT (DECT) strengthens diagnostic confidence in the emergency department, avoiding 170 follow-up MRI studies and reducing repeat CT and ultrasound examinations compared to conventional CT, thereby lowering unnecessary investigations and costs (19).

MANAGEMENT OF POLYTRAUMA

The management of polytrauma has evolved significantly over the decades, supported by advances in understanding the physiological response to injury, improvements in surgery, resuscitation, surgical techniques, and perioperative strategies (10). Despite these changes, a structured approach remains essential, and management continues to be anchored in the ATLS protocol, which provides a universal framework for evaluating and treating injured patients (3).

The ATLS sequence begins with:

- **Primary survey (ABCDE)** conducted during the initial assessment. This step institutes simultaneous life-preserving therapy following the ATLS protocol (22).
- **Secondary survey** includes a comprehensive head-to-toe examination with targeted imaging (22).
- **Tertiary survey** is conducted after resuscitation, ensuring delayed or overlooked injuries are identified before definitive management (25).

By balancing the patient's physiological condition and the need for definitive fixation, Early Appropriate Care (EAC) has emerged as a safer strategy in polytrauma management (10). It prioritises treatment of the most severe orthopaedic injuries first, while allowing time for physiological stabilisation before addressing other injuries (10). This approach minimises the risk of following inflammatory reactions (10). EAC recommends treatment of severe fractures (spine, pelvis, femur, and shoulder joint) within 36 hours once metabolic parameters, including lactate ≤4 mmol/L, pH ≥7.25, and base excess ≤5.5, are corrected, thereby reducing surgical delays and complications (10).

For patients with polytrauma, Safe Definitive Surgery (SDS) represents an evolving method of fracture management that prioritises personalised decision-making based on the patient's physiological condition (10). In this method, factors such as the severity of soft tissue injuries, temperature, coagulation status, and shock parameters are evaluated (10). Following initial resuscitation, patients are classified into four categories during secondary examination (10) –

- Stable (Grade I)
- Borderline (Grade II)
- Unstable (Grade III)
- Extremis (Grade IV)

This classification system guides both the timing and extent of surgical intervention, ensuring treatment is tailored to the individual's physiological reserve and injury severity (10).

The personalised reconstruction and individualised strategy for management (PRISM) concept further promotes individualisation by factoring in haemoglobin, heart rate, blood pressure, pH, lactate, lung function, age, comorbidities, and injury patterns (10). This holistic evaluation ensures treatment decisions are guided not only by injury severity but also by physiological and contextual factors (10).

These approaches are compared in Figure 3, highlighting the differences in timing, decision criteria, risk management, and goals across EAC, SDS, and PRISM (10).

Evolving Strategies in Polytrauma Fracture Management (10)

	Early Appropriate Care	Safe Definitive Surgery	PRISM Concept
Approach	Treat severe fractures first; rest after physiological improvement	Personalised treatment based on the CGS	Flexible, patient-tailored approach based on full assessment
Timing of Treatment	Severe injuries treated within 36 hours	Repeated assessments guide the timing of definitive fixation within 36 hours	Timing adapted to individual patient status
Decision Criteria	Based on metabolic parameters (lactate, pH, base excess)	Classification into stable, borderline, unstable, and extremis	Uses physiological indicators, injury patterns, and comorbidities
Risk Management	Minimises complications and surgical delays	Uses DCO when needed	Avoids strict protocol and emphasises individual needs
Goal	Achieve safe, timely, and definitive fixation	Ensure physiological stability before surgery	Promote personalised, flexible care

Figure 3: Comparison of trauma care strategies (10)

(Abbreviations: CGS- Clinical Grading System; DCO – Damage Control Orthopaedics)

For unstable patients, Damage Control Surgery (DCS) is a strategy designed to avoid these physiological disorders (26). DCS involves three steps (26) –

- **Abbreviated surgery to control haemorrhage and contamination**
- **Resuscitation in the ICU**
- **Planned reoperation for definitive surgery**

DCS emphasises rapid reversal of acidosis and prevention of hypothermia, but does not directly address coagulopathy (26). A newer approach, Damage Control Resuscitation (DCR), integrates permissive hypotension, restricted crystalloid use, and haemostatic resuscitation with balanced transfusion strategies, while simultaneously correcting acidosis, hypothermia, and coagulopathy (26).

Together, DCS and DCR form a unified strategy, combining abbreviated surgical interventions with balanced and haemostatic resuscitation to address the lethal triad of acidosis, hypothermia, and coagulopathy in unstable patients (26).

FUTURE ADVANCEMENTS IN POLYTRAUMA MANAGEMENT

Whilst the rate of discovery in orthopaedic trauma increases, future care will move toward more individualised treatment, guided by each patient's susceptibility and recovery potential (27). Genetic predisposition to abnormal inflammatory responses, such as IL-6 polymorphisms, may influence whether patients benefit from EAC or require Damage Control Orthopaedics (27).

Newer approaches like smart implants can assist with real-time monitoring of fracture healing, reduce the need for routine radiographs, and support remote follow-up (27). 3D printing is increasingly applied in orthopaedic trauma, from customised plates and fracture models for surgical planning to biodegradable scaffolds for managing bone defects (27). Bioprinting also presents a promising approach, enabling constructs with cells and extracellular matrix that may overcome current scaffold limitations (27).

Research in orthopaedic trauma has advanced significantly across resuscitation, engineering, and cell therapies (27). Future progress will continue through 3D printing, bioprinting, and genetic-guided care, driving more personalised treatment and improved outcomes for polytrauma patients (27).

Key Highlights

- Polytrauma, characterised by life-threatening injuries affecting multiple body regions, represents a major global cause of mortality and requires timely evaluation and intervention by orthopaedic surgeons (4).
- Such injuries can trigger the "lethal triad" of hypothermia, coagulopathy, and acidosis, resulting in complications ranging from severe haemorrhage to death (14).
- The Advanced Trauma Life Support (ATLS) protocol provides a systematic framework for early recognition, resuscitation, and ongoing reassessment of trauma patients (22).
- Targeted imaging, including radiographs, ultrasound, and CT, improves rapid detection of critical injuries and supports clinical decision-making (24).

REFERENCES

1. Anghelina L, Radu L, Gheonea C, Teică V, Anghelina AM, Siminel MA. The Complex Consequences of Severe Polytrauma with Traumatic Brain Injuries Caused by a Traffic Accident in a Child: A Case Report. Children. 2025 Apr 17;12(4):516.
2. Rau CS, Wu SC, Kuo PJ, Chen YC, Chien PC, Hsieh HY, et al. Polytrauma Defined by the New Berlin Definition: A Validation Test Based on Propensity-Score Matching Approach. IJERPH. 2017 Sep 11;14(9):1045.
3. Marsden NJ, Tuma F. Polytraumatized Patient. In: StatPearls [Internet]. StatPearls Publishing; 2023.
4. Johanna van B, Menco J N, Roderick M H, Rolf HH G, Luke PH L, Karlijn JP van W. Global changes in mortality rates in polytrauma patients admitted to the ICU-a systematic review. World journal of emergency surgery: WJES. 2020 Sep 30;15(1).
5. Karlijn JP van W, Kim EM. B, Luke PH L, Falco H. TBI related death has become the new epidemic in polytrauma: a 10-year prospective cohort analysis in severely injured patients. European journal of trauma and emergency surgery: official publication of the European Trauma Society. 2024 Dec;50(6).
6. Seidu AS, Alhassan AR, Buunaaim ADB ib. Epidemiology of Polytrauma at a Teaching Hospital in Northern Ghana: A Cross-Sectional Study.
7. Picetti E, Rosenstein I, Balogh ZJ, Catena F, Taccone FS, Fornaciari A, et al. Perioperative Management of Polytrauma Patients with Severe Traumatic Brain Injury Undergoing Emergency Extracranial Surgery: A Narrative Review. JCM. 2021 Dec 21;11(1):18.
8. Jaramillo CA, Tapia RN, Eapen BC. Polytrauma Rehabilitation. In: Essentials of Physical Medicine and Rehabilitation [Internet]. Elsevier; 2020 [cited 2025 Sep 17]. p. 828–33. Available from: https://linkinghub.elsevier.com/retrieve/pii/B9780323549479001462
9. Ding C, Jia M, Han X, Zhang J, Zhao X, Sang X. A China-Based exploration of surgical timing for polytrauma with a focus on fracture reconstruction. World Journal of Emergency Surgery. 2025 Apr 16;20(1):33.
10. Upadhyaya GK, Iyengar KP, Jain VK, Garg R. Evolving concepts and strategies in the management of polytrauma patients. Journal of Clinical Orthopaedics and Trauma. 2020 Oct 13;12(1):58.
11. Hutchinson K, Bretherton CB, Gmati A, Handley B, Collaborators GIRFT (GIRFT). Multidisciplinary management of orthopaedic trauma – are we adhering to the guidelines? Annals of The Royal College of Surgeons of England. 2024 Jul 31;107(3):217.
12. Dumovich J, Singh P. Physiology, Trauma. In: StatPearls [Internet]. StatPearls Publishing; 2022.
13. Lacey L, Deborah S, Christopher C, Krista K, Charles H, An M, et al. American Association for the Surgery of Trauma/American College of Surgeons Committee on Trauma: Clinical protocol for damage-control resuscitation for the adult trauma patient. The journal of trauma and acute care surgery. 2024 Mar 1;96(3).
14. Savioli G, Ceresa IF, Caneva L, Gerosa S, Ricevuti G. Trauma-Induced Coagulopathy: Overview of an Emerging Medical Problem from Pathophysiology to Outcomes. Medicines. 2021 Mar 24;8(4):16.
15. Pierce A, Pittet JF. Inflammatory response to trauma: implications for coagulation and resuscitation. Current Opinion in Anaesthesiology. 2014 Apr;27(2):246–52.
16. Lukas L N, Michel D, Stefan P, Stefan H. Impact of Polytrauma and Acute Respiratory Distress Syndrome on Markers of Fibrinolysis: A Prospective Pilot Study. Frontiers in medicine. 2020 Jun 2;7.
17. Min C, Guozheng W, Jianfeng X. Immune dysregulation in sepsis: experiences, lessons and perspectives. Cell death discovery. 2023 Dec 19;9(1).
18. Ibarz M, Haas LEM, Ceccato A, Artigas A. The critically ill older patient with sepsis: a narrative review. Annals of Intensive Care. 2024 Jan 10;14(1):6.

19. Asim M, Amin F, El-Menyar A. Multiple organ dysfunction syndrome: Contemporary insights on the clinicopathological spectrum. Qatar Med J. 2020 Sep 22;2020(1):22.

20. Planas JH, Waseem M, Sigmon DF. Trauma Primary Survey. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 [cited 2025 Sep 18]. Available from: http://www.ncbi.nlm.nih.gov/books/NBK430800/

21. Pape HC, Moore EE, McKinley T, Sauaia A. Pathophysiology in patients with polytrauma. Injury. 2022 Jul 1;53(7):2400–12.

22. Stahel PF, Heyde CE, Ertel W. Current Concepts of Polytrauma Management. Eur J Trauma. 2005 Jun 1;31(3):200–11.

23. O'Keeffe M, Clark S, Khosa F, Mohammed MF, McLaughlin PD, Nicolaou S. Imaging Protocols for Trauma Patients: Trauma Series, Extended Focused Assessment With Sonography for Trauma, and Selective and Whole-body Computed Tomography. Seminars in Roentgenology. 2016 Jul 1;51(3):130–42.

24. Thippeswamy PB, Rajasekaran RB. Imaging in polytrauma – Principles and current concepts. Journal of Clinical Orthopaedics and Trauma. 2020 Dec 5;16:106.

25. Thomson CB, Greaves I. Missed injury and the tertiary trauma survey. Injury. 2008 Jan 1;39(1):107–114.

26. Mizobata Y. Damage control resuscitation: a practical approach for severely hemorrhagic patients and its effects on trauma surgery. j intensive care. 2017 Dec;5(1):1–9.

27. Rodham P, Giannoudis PV. Innovations in orthopaedic trauma: Top advancements of the past two decades and predictions for the next two. Injury. 2022 Nov 1;53:52–7.

Aster HOSPITALS & CLINICS

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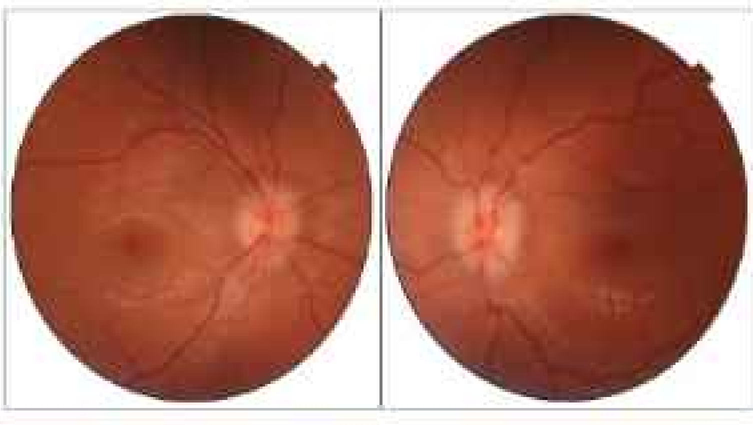
Neurosurgery (Consultant)

Dr. Parth H Joshi
Ophthalmology (Specialist)

A Rare Case of Arachnoid Cyst in the Brain resulting in Vision Loss treated effectively at Aster Hospital, Mankhool, Dubai

PRESENTATION

- 30-year-old male
- Medical history of fever for about 2 weeks. After the flu subsided, the patient felt pain in the eyes during eye movement. He visited an Ophthalmologist in another clinic for evaluation, and eye drops were given. On day 5, he developed blurry and decreased vision and visited Aster for re-evaluation.
- He was seen by an Ophthalmologist and admitted with complaints of:
  - Blurry and decreased vision in both eyes for 6 days: <6/60
  - Papilledema due to raised intracranial pressure
  - Denied diplopia
- Ophthalmology Evaluation: Fundoscopy



Pre-op Fundoscopy images showing severe papilledema

The patient was advised to undergo an urgent MRI scan and was referred to the Neurosurgeon for further management.

FINDINGS

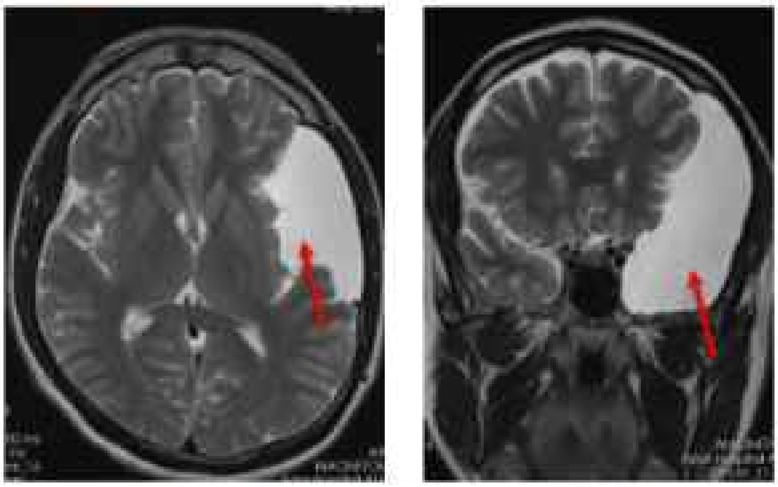
During Neurological examination:

- Conscious and oriented
- Pupils: Equal and reacting
- No facial weakness, limb weakness and cerebellar signs

MRI Brain showed:

- A large extra-axial area showed homogeneous CSF intensity (T2 hyperintense and FLAIR hypointense) involving the left temporal fossa extending superiorly up to the left frontal convexity with splaying of the sylvian fissure.
- No diffusion restriction. Postcontrast imaging showed no enhancement. No solid component was seen. No blooming was seen on SWI.
- Mass effect was noted on the left temporal lobe, which was displaced posteriorly. It was also noted on the left frontal and parietal lobes. No altered signal changes were seen in the underlying brain parenchyma.
- Bony remodelling changes in the overlying calvarium.

The above findings were suggestive of an Arachnoid Cyst.



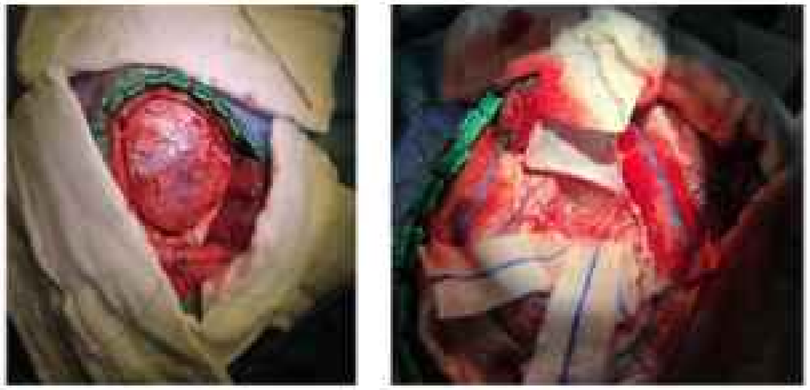
Pre-op Axial and Coronal images

- A similar extra-axial area showed homogeneous CSF signal intensity in the midline retro cerebellar region extending to the left.
- No diffusion restriction. Postcontrast imaging showed no enhancement. No solid component was seen.
- Minimal mass effect was noted on the left cerebellum, which likely represented an arachnoid cyst.
- A mild increase in the optic nerve sheath diameter was seen bilaterally.

DURING PROCEDURE

The patient was advised of emergency surgery to save his vision and relieve him of the raised intracranial pressure. He underwent left fronto-temporo-parietal craniotomy and fenestration of an Arachnoid Cyst.

- During craniotomy, the dura was bulging under pressure.
- The arachnoid cyst was dissected from the dura.
- The entire cyst wall over the surface and the temporal pole was excised, and the cyst wall was sent for biopsy.
- The basal dura was seen bare.
- Then, the cyst wall near the basal cistern, insula and the sylvian cisterns were fenestrated.
- Clear CSF was seen filling the cavity.
- The cavity was filled with clear saline.



Intra-op images

POST PROCEDURE

The patient was conscious and alert post-op but developed dysphasia, probably due to a shift in the intracranial pressure dynamics. He completely recovered from the dysphasia in the coming weeks. He started obeying commands and had no facial or limb weakness. He had one episode of mild twitching of the face in the immediate post-op period. DVT prophylaxis was given, physiotherapy was started, and he was mobilised. He was initially fed with an NGT, and later on, he started accepting oral feeds. He had a subgaleal collection, which was aspirated, to which pressure dressings were given, and it resolved.

Follow-up CT scans the next day showed:

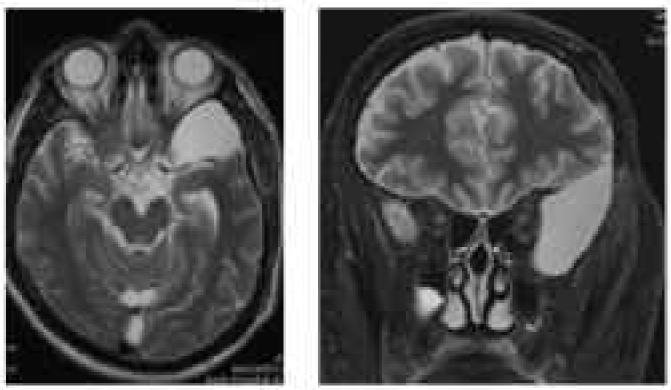
- The postoperative changes with minimal air under the bone flap.
- The left arachnoid cyst was regressed, and the temporal lobe had expanded to occupy the temporal fossa.
- The mass effect had regressed, and there was no midline shift.
- The ventricles were small in size, the cortical sulci had opened up, and the basal cisterns were patent.
- There was no haemorrhage at the operative site, but remote haemorrhage was noted in the cerebellum bilaterally, more on the right side, probably due to changes in CSF flow dynamics.

Further follow-up CT scan showed:

- No increase in the remote cerebellar bleed.
- The temporal lobe had expanded to occupy the temporal fossa.
- A small collection of CSF was seen in the temporal pole.
- Subgaleal CSF collection was noted. The ventricles were small, and the basal cisterns were patent. No mass effect or midline shift.

3-month follow-up MRI showed:

- The arachnoid cyst had regressed, and the brain had expanded. There was no mass effect, no midline shift, and the brain appeared lax. The basal cisterns were patent.



Post-op Axial and Coronal images

DIAGNOSIS

Histopathological examination showed:

Fragment of a cystic lesion, composed of a single layer of meningothelial cells with an outer layer of delicate hyalinized fibrous tissue with mild myxoid changes, displayed foci of denudation as well as meningothelial hyperplasia without psammoma bodies or atypia.

Diagnosis: Arachnoid Cyst

OPHTHALMOLOGY NOTES

- Visual acuity in both eyes: 6/6
- Visual fields: Normal
- Intraocular pressure: Normal
- No papilledema

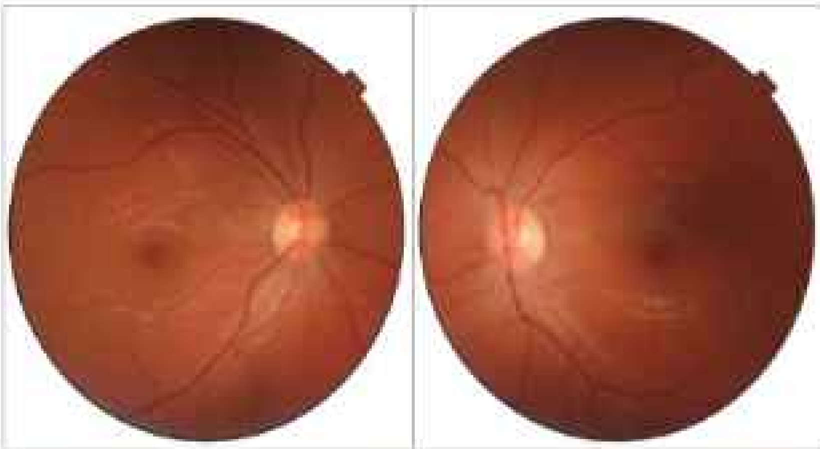
CURRENT STATUS

Gradually, his dysphasia improved, and he could communicate well. He was mobilised and became ambulant by himself without assistance. His headaches resolved after the surgery, and his vision improved significantly.

At the 3-month follow-up, the patient was found to be normal, had no neurological deficits, and was able to independently perform all his daily activities.

His Ophthalmology evaluation was completely normal, and his vision was 6/6.

His surgical wound healed well with good cosmesis.



3-month post-op Fundoscopy images showing complete resolution of papilledema

DISCUSSION

Arachnoid Cysts (AC), also called leptomeningeal cysts, are believed to be congenital abnormalities most commonly seen in the middle fossa. They form during the development from splitting the arachnoid membrane and contain fluid identical to CSF. Most are asymptomatic and incidental, but can become symptomatic in early childhood. They can also occur in the spine.

Two types:

1. Simple AC: Arachnoid lining capable of secreting CSF

2. Complex AC: Lining may contain neuroglia, ependyma or other tissue types

The incidence is 5 per 1000, and the incidence of symptomatic cysts is even less. The male-to-female ratio is 4:1, and they are more common on the left side. They usually present with headaches, seizures, and hemiparesis. Loss of vision is an exceedingly rare presentation in the middle cranial AC.

MRI is used to diagnose arachnoid cysts.

Here, in our case, the patient presented in adulthood with rapidly progressing vision loss due to raised ICP. He underwent emergency surgery to relieve his intracranial pressure and save his vision. He had transient dysphasia, probably due to the intracranial brain shift and altered CSF dynamics. Follow-up radiological investigations showed the expansion of the temporal lobe with a small CSF cistern at the temporal pole. He gradually improved in the coming few months and made a complete recovery. His vision returned to normal.

CONCLUSION

This case is presented due to its rarity. Arachnoid cysts are commonly found as incidental findings. Very rarely do they become symptomatic, and even rarely in adulthood. The presentation here is also unique because middle fossa cysts rarely present with papilledema and vision loss, and that too so acutely. They can cause visual impairment by direct pressure on the optic nerves, which is more common.

Timely diagnosis and intervention in this case had helped save our patient's vision.

REFERENCES

1. White ML, Das JM. Arachnoid Cysts. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. [Updated 2024 Feb 2].
2. Ishii T, Takagi K, Shirouzu M, Watanabe T, Shinohara T, Furuya K, Fujimaki T, Nakagomi T. [Acute onset of visual disturbance in a patient with arachnoid cyst in the middle cranial fossa]. Brain Nerve. 2008 Jan;60(1):97-102. Japanese. PMID: 18232339.

Aster HOSPITALS & CLINICS

Understanding the Types of Hernias and the Importance of Early Management

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INTRODUCTION

Hernias are the protrusion of organs or tissues through weaker places in the abdominal wall, and are a prevalent and medically critical issue in general surgery (1). Although they can occur in several body regions, abdominal hernias are especially common. These often present as masses that may remain asymptomatic or progress to life-threatening complications (1). Worldwide, inguinal hernia repair is one of the most common operations, performed in more than 20 million people annually (2).

Over time, the global burden of hernia has continued to rise (3). From 1990 to 2019, prevalence increased by 36% to 32.5 million cases, while mortality rose by nearly 20% (3). While rates were higher in men, elderly individuals, particularly those aged 65 to 69, show the greatest prevalence (3). Prevalence also varies regionally, reflecting the impact of differences in genetic predisposition, healthcare access, and environmental factors (3).

Managing hernias, especially abdominal wall hernia (AWH), requires either elective or emergency interventions (4). Elective repair is generally preferred, as it allows preoperative considerations such as weight loss and the use of patient-centred pathways, although hernia progression during this period can impair quality of life (QoL) (4). Hernias can progress to have serious complications such as incarceration and strangulation, requiring emergency surgeries in about 10% cases (5,6). Compared to elective surgeries, these cases have a higher risk of postoperative complications, longer recovery periods, and increased mortality in high-risk patients (5,7). Delays in surgery in such cases can increase complications, operative times, hospital stays, and the need for re-operations, with a higher risk of 30-day mortality (8).

Hernias can cause incarceration, eventually leading to bowel obstructions and strangulation if left unattended (9). For strangulated hernias, consensus guidelines currently recommend immediate surgery (8).

Further, outcomes of hernia management vary by the type of hernia and patient risk profile, making structured assessment critical (10). The Ventral Hernia Working Group classification stratifies patients based on risk of wound complications and recurrences, thereby supporting decision-making (10). Building on this principle of structured management, the European Hernia Society guidelines emphasise surgical approaches and closure techniques to be critical factors in reducing the risk of incisional hernia (11).

Explore this article to understand the clinical types of hernias, the importance of timely management, current surgical options, and the future practices shaping safer, patient-centred hernia care.

SPECTRUM AND CLINICAL CLASSIFICATION OF HERNIAS

Hernias occur in diverse forms, requiring a systematic categorisation for diagnosis and treatment planning (1). These are generally classified according to anatomical location, underlying cause, and clinical characteristics (1). When occurring within the abdominal wall, these are broadly grouped into groin hernias and ventral hernias (5). Figure 1 illustrates the common types of hernias in these categories.

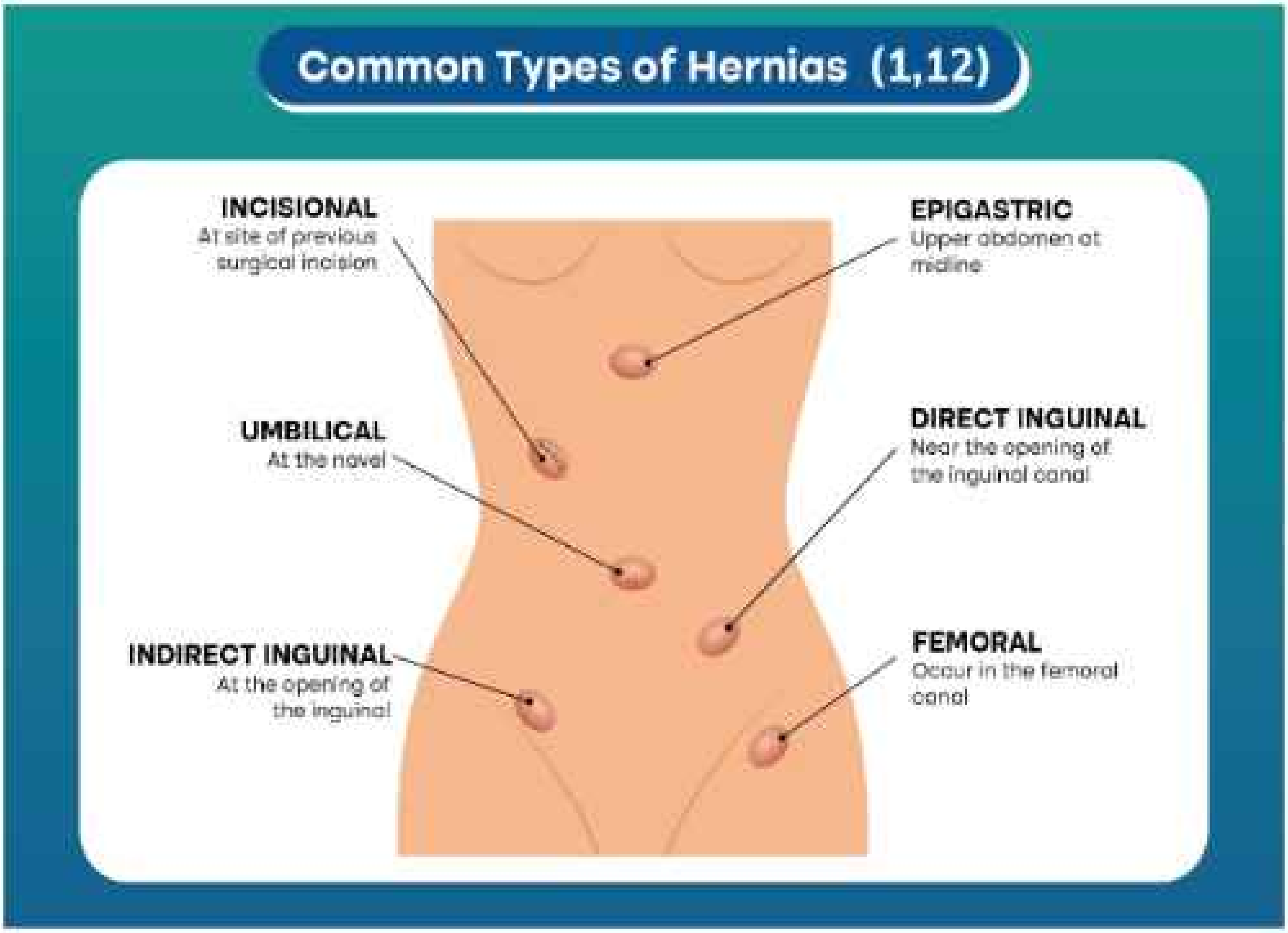

Figure 1: Common anatomical sites of AWH (1,12)

A. Groin Hernias

Groin hernias are classified into two types: inguinal and femoral hernias.

Among these, an **inguinal hernia**, which occurs in the groin area, is the most common type (9). Identified in the inguinal canal, its classification depends on proximity to the inferior epigastric vessels (1). There are two main subcategories of inguinal hernias (1):

- **Direct inguinal hernias** situated medial to the inferior epigastric vessels, caused by structural weakness in the canal base (1).
- **Indirect inguinal hernias** located lateral to the inferior epigastric vessels (1). These are commonly caused by a congenital weakness in the inguinal canal or one that develops over time (1).

Femoral hernia occurs when abdominal contents protrude through the femoral hernias, more frequently in females (1). These hernias lie below the inguinal ligament, typically accounting for about 3% of all groin hernias (1,12). However, strangulation is the most common serious complication, with femoral hernia carrying the highest risk (15-20%), making early recognition and repair essential (12). Warning signs include sudden worsening pain, redness, or enlargement of the hernia, along with vomiting or bowel obstruction. A groin hernia that usually reduces but suddenly becomes irreducible requires urgent medical attention (2).

B. Ventral hernias

Ventral hernias present as bulges that push through the front part of the abdominal wall (1). They are classified according to their anatomical site, including epigastric, umbilical, or incisional hernias (1). The European Hernia Society (EHS) classification provides a simple, practical, and reproducible framework for categorising both primary abdominal wall and incisional hernias (10).

Primary hernia is defined as a spontaneous herniation of intra-abdominal contents through a defect in the abdominal wall that is not related to a scar from surgery or trauma (10). In the EHS system, these hernias are described by location and size (10):

- **By location:** Primary hernias are grouped into midline hernias (epigastric and umbilical) and lateral hernias (Spigelian and lumbar) (10).
- **By size:** The hernias are classified as small if <2 cm, medium if 2-4cm, and large if >4cm (10).

Primary hernias are usually round or oval, and their size is measured as the maximum transverse diameter of the defect (10). The EHS and Americas Hernia Society (AHS) guidelines use this classification to guide treatment strategies for umbilical and epigastric hernias (10).

Incisional hernias arise at the site of a previous surgical incision and is classified as a type of ventral hernia (13). Incidence is reported at 12.8% 2 years after a midline incision, and these patients ultimately require surgical repair to reduce the risk of complications (11). Recurrence rates after repair range between 23% and 50%, with a higher risk of complications and re-recurrence after repeated failed repair (11).

According to the EHS 2023 guidelines, the key factors for incisional hernia include:

- Patients with high body mass index (BMI), smoking, diabetes, and immunosuppression are at increased risk of developing an incisional hernia after abdominal surgery (11).
- Midline incisions carry a higher risk of hernia formation compared with off-midline incisions (11).
- Single incision laparoscopic surgery (SILS), trocar sites ≥10 mm, and umbilical site trocars are associated with increased risk of trocar-site hernias (11).
- Surgical site infection (SSI) after abdominal surgery is one of the strongest predictors of incisional hernia and has the greatest impact among risk factors (11).
- The use of a continuous small-bite suturing technique with a slowly absorbable suture reduces the risk of ncisional hernia (11).

For incisional hernias, accurate classification combined with structured risk assessment, early elective repair, and individualised perioperative planning can reduce complications, ICU admissions, and mortality, particularly in elderly patients (14).

RATIONALE FOR EARLY MANAGEMENT AND TIMING OF REPAIR

A delay in the surgical management of a hernia increases the risk of morbidity (8). Patients presenting with a hernia and an indication for urgent surgical intervention should be operated on as soon as possible (8).

Patients >70 years of age and those classified as III/IV of the American Society of Anaesthesiologists are at a higher risk of mortality and morbidity due to emergency hernia repair (7). Among these, patients with comorbid conditions such as cardiovascular disease, high BMI, or diabetes are at even higher risk for post-operative complications (7). Further, delayed presentations can lead to bowel ischaemia and strangulation, requiring complex surgeries such as bowel resections, emphasising the importance of timely intervention (7).

Surgeries for asymptomatic or mildly symptomatic inguinal hernias are associated with postoperative or chronic pain (15). Hence, the watchful waiting (WW) is considered a good alternative to elective surgery, especially in patients >50 years with asymptomatic or mildly symptomatic inguinal/ventral hernia (15). Because the timing of repair differs across patient profiles, such as women (pregnant and non-pregnant), elderly patients, and paediatric cases, structured recommendations provide clarity on when immediate intervention is necessary and when a WW approach may be safe (16–19).

Figure 2 presents timing recommendations for surgical repair of hernia.

Timing Recommendations for Surgical Repair Across Patient Groups (12,15–19)

Patient Type	Timing Recommendations for Surgical Repair
Women	• Surgery recommended promptly after diagnosis • Indicated regardless of symptoms • Due to high femoral hernia risk and strangulation potential
Pregnant women	• **Complicated hernias** (incarceration, strangulation, bowel obstruction): Emergency surgery • **Small, asymptomatic:** WWA, delay repair until post-delivery/last pregnancy • **Large, symptomatic:** Repair in 2nd trimester or defer until after delivery if stable
Elderly patients	• WWA may be appropriate in selected cases • Requires careful risk–benefit assessment • In comorbid patients, delayed crossover surgery is considered safe
Paediatric patients	• Elective repair may be delayed until after discharge if feasible • Timing should be individualised to medical/social circumstances • Key factors: remote location, financial hardship, unreliable follow-up

Figure 2: Timing recommendations for surgical repair across patient subgroups (12,15–19)

(Abbreviations: WWA– Watchful Waiting Approach)

SURGICAL OPTIONS IN MODERN HERNIA REPAIR

Hernia repair is one of the most common general surgical procedures performed in the world (20). While most operations achieve durable results, reoperations are required in 10–15% of cases, and chronic postoperative pain (lasting >3 months) occurs in 10–12% of patients, underscoring the importance of optimising technique selection (2). Modern surgeons, therefore, face the challenge of balancing multiple operative choices, each with distinct benefits and constraints (1).

Figure 3 illustrates recommended surgical approaches for several types of hernia by broadly categorising into repairs for groin hernias, ventral hernias, and complex/incisional hernias.

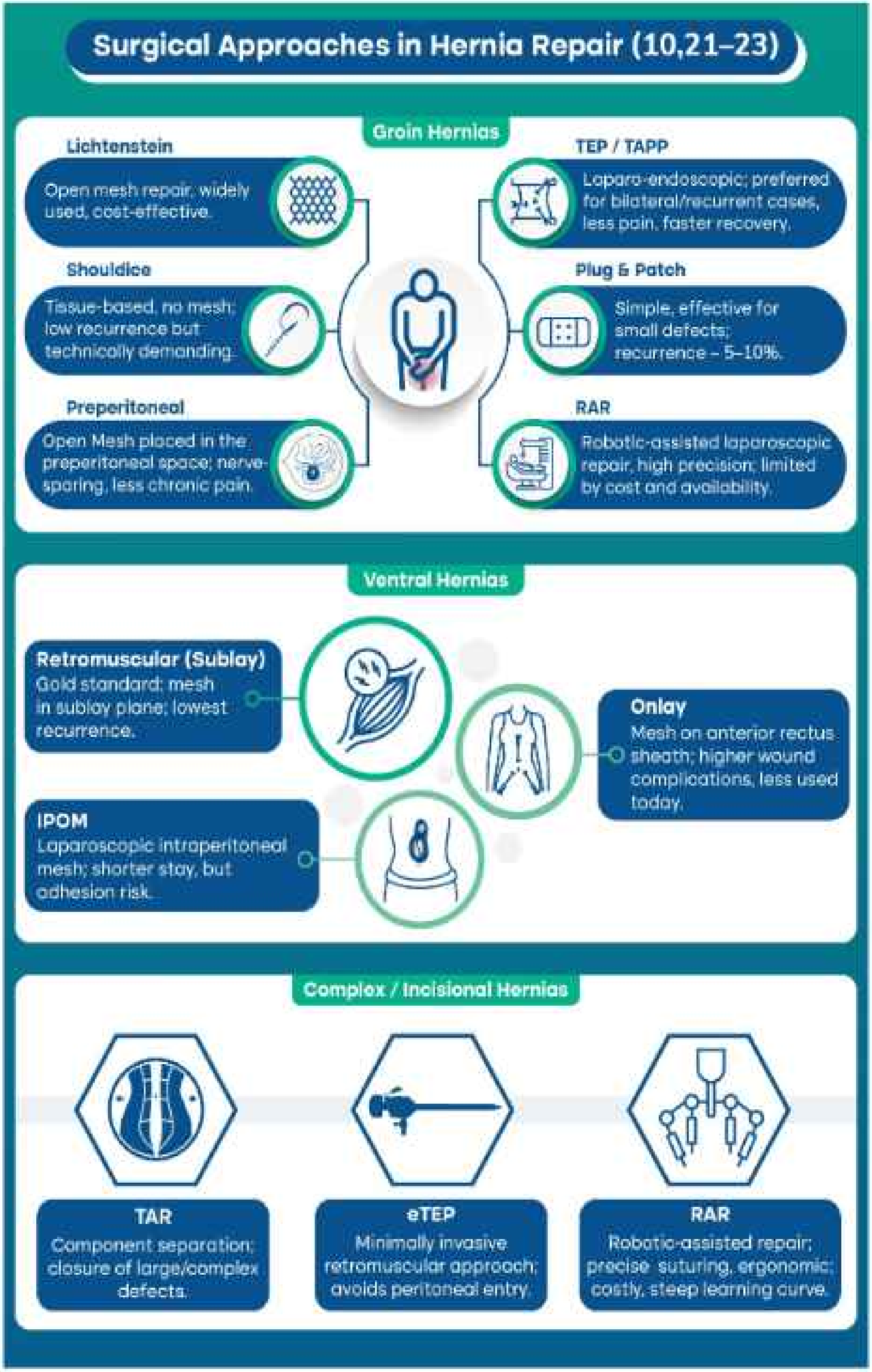

Figure 3: Surgical approaches in hernia repair (10,21–23)

(Abbreviations: TEP – totally extraperitoneal; TAPP – transabdominal preperitoneal; RAR – robotic-assisted repair; IPOM – intraperitoneal onlay mesh; TAR – transversus abdominis release; eTEP – extended totally extraperitoneal)

Beyond the choice of technique, mesh selection remains an important factor in hernia surgery (2). Mesh type directly influences recurrence, infection risk, and durability, making its selection as important as the operative approach itself (10). The success of hernia repair depends not only on the operative technique but also on the mesh material chosen (10). Meshes are broadly categorised as:

- **Synthetic mesh** (polypropylene, polyester, ePTFE): Widely used due to strength and low recurrence rates; however, infection risk persists in contaminated or high-risk fields (2).
- **Biologic mesh** (e.g., porcine dermis, human acellular dermis): Favoured due to resistance to infection but associated with higher recurrence rates and very high cost (6).
- **Biosynthetic mesh** (absorbable polymer-based): Emerging option balancing infection resistance with moderate durability; promising type for selected high-risk cases, although long-term evidence is still limited (3).
- **Hybrid meshes:** Represent the newest category that combines biological and synthetic materials (10).

Careful integration of operative approach and mesh choice, tailored to patient comorbidities and hernia characteristics, remains central to improving outcomes and reducing the burden of recurrence, chronic pain, and healthcare costs (1).

FUTURE DIRECTIONS AND EVOLVING PRACTICES

Emerging techniques, such as robotic abdominal wall reconstruction (RAWR), utilise mechanically controlled instruments that offer accuracy and precision in minimally invasive approaches, thereby reducing mental and physical workload in the operating theatre when compared to laparoscopic surgery (24). RWAR also reduces tremors and motion scaling, while providing better visualisation, enabling surgeons to perform highly precise movements with improved control and stability (24).

The use of enhanced recovery after surgery (ERAS) protocols improves post-operative outcomes for patients, specifically reducing the length of hospital stay after surgery without any change in the frequency of readmissions and post-operative complications (25). When combined with RAWR, ERAS protocols enable same-day discharge in patients undergoing abdominal wall reconstruction (25). In one study, the mean length of stay was 1.6 days when following ERAS protocols with RAWR, which was slightly lower than studies reporting RAWR without ERAS (25).

Patient-reported outcome measures (PROMs) are increasingly integrated into hernia care to capture patients' subjective experiences before and after surgery (26). These tools assess quality of life, pain, physical limitations, and recovery, allowing surgeons to evaluate surgical success from the patient's perspective and refine management strategies accordingly (26,27). Evidence highlights five key domains impacted by hernia and its treatment: body image, mental health, symptoms, interpersonal relationships, and employment (27). By systematically addressing these domains, PROMs promote a more patient-centred approach to complex hernia management, ensuring that improved surgical outcomes align with what matters most to patients (28).

Key Highlights

- Hernias represent a significant surgical challenge worldwide, with both elective and emergency repairs carrying important clinical implications (4).
- Structured systems such as the EHS and Ventral Hernia Working Group classifications provide consistent guidance for stratifying risk and planning surgical repair (10).
- Early repair improves outcomes compared with delayed or emergency surgery, while watchful waiting has limited applicability, especially in women at risk of femoral hernia (25).
- Robotic repair, ERAS integration, and patient-reported outcome measures are reshaping hernia care toward safer, more patient-centred approaches (10,23).

REFERENCES

1. Olanrewaju OA, Saleem A, Owusu FA, Pavani P, Ram R, Varrassi G, et al. Contemporary Approaches to Hernia Repair: A Narrative Review in General Surgery. Cureus [Internet]. 2023 Dec 31 [cited 2025 Available from: https://cureus.com/articles/219303-contemporary-approaches-to-hernia-repair-a-narrative-review-in-general-surgery
2. Simons MP, Smietanski M, Bonjer HJ, Bittner R, Miserez M, Aufenacker ThJ, et al. International guidelines for groin hernia management. Hernia. 2018 Feb 1;22(1):1–165.
3. Wang F, Ma B, Ma Q, Liu X. Global, regional, and national burden of inguinal, femoral, and abdominal hernias: a systematic analysis of prevalence, incidence, deaths, and DALYs with projections to 2030. International Journal of Surgery. 2024 Apr;110(4):1951–67.
4. Smith OA, Mierzwinski MF, Chitsabesan P, Chintapatla S. Health-related quality of life in abdominal wall hernia: let's ask patients what matters to them? Hernia. 1;26(3):795–808.
5. Pavithira GJ, Dutta S, Sundaramurthi S, Ramakrishnaiah VPN, Gj P, Dutta S, et al. Outcomes of Emergency Abdominal Wall Hernia Repair: Experience Over a Decade. Cureus [Internet]. 25 [cited 2025 Available from: https://cureus.com/articles/102970-outcomes-of-emergency-abdominal-wall-hernia-repair- experience-over-a-decade
6. Rosenberg J, Gram-Hanssen A, Reistrup H, Baker JJ. Redefining Success in Hernia Surgery: The Case for Patient-Reported Outcomes. Journal of Clinical Medicine. 2025 Jan;14(17):6131.
7. Anwar K, Jadhav S, Pasila J, Nasir MT, Mihailescu A, Anwar K, et al. Incidence and Outcomes of Emergency Presentation With Complicated Abdominal Wall Hernias: A Retrospective Study. Cureus [Internet]. 2024 Dec 14 [cited 2025 Available from: https://cureus.com/articles/320249-incidence-and-outcomes-of-emergency-presentation- with-complicated-abdominal-wall-hernias-a-retrospective-study
8. Leeds IL, Jones C, DiBrito SR, Sakran JV, Haut ER, Kent AJ. Delay in emergency hernia surgery is associated with worse outcomes. Surg Endosc. 2020 Oct 1;34(10):4562–73.

9. Assakran BS, Al-Harbi AM, Albadrani HA, Al-Dohaiman RS, Assakran BS, Alharbi AM, et al. Risk Factors for Postoperative Complications in Hernia Repair. Cureus [Internet]. 2024 Jan 9 [cited 2025 Available from: https://cureus.com/articles/211942-risk-factors-for-postoperative-complications-in-hernia-repair

10. Henriksen NA, Kaufmann R, Simons MP, Berrevoet F, East B, Fischer J, et al. EHS and AHS guidelines for treatment of primary ventral hernias in rare locations or special circumstances. BJS Open. 2020 Mar 24;4(2):342–53.

11. Sanders DL, Pawlak MM, Simons MP, Aufenacker T, Balla A, Berger C, et al. Midline incisional hernia guidelines: the European Hernia Society. British Journal of Surgery. 2023 Nov 9;110(12):1732–68.

12. Goethals A, Azmat CE, Patel PJ, Adams CT. Femoral Hernia. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 [cited 2025 Available from: http://www.ncbi.nlm.nih.gov/books/NBK535449/

13. Hope WW, Tuma F. Incisional Hernia. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 [cited 2025 Available from: http://www.ncbi.nlm.nih.gov/books/NBK435995/

14. Thalpati DS, Abraham DA. Preoperative Risk Stratification And Outcomes In Hernia Surgery In Elderly Patients In Tribal Area Of Western Maharashtra. International Journal of Life Sciences. 2025;14(9).

15. Dop LMV den, Egmond SV, Heijne J, Rosmalen J van, Goede B de, Wijsmuller AR, et al. Twelve-year outcomes of watchful waiting versus surgery of mildly symptomatic or asymptomatic inguinal hernia in men aged 50 years and older: a randomised controlled trial. eClinicalMedicine [Internet]. 2023 Oct 1 [cited 2025 Available from: https://www.thelancet.com/journals/eclinm/article/PIIS2589-5370(23)00384-X/fulltext

16. McBee PJ, Robert J. Fitzgibbons J. The current status of watchful waiting for inguinal hernia management: a review of clinical evidence. mis. 2021 Apr 17;5(0):N/A-N/A.

17. Danawar NA, Mekaiel A, Raut S, Reddy I, Malik BH. How to Treat Hernias in Pregnant Women? Cureus. 4;12(7):e8959.

18. Piltcher-da-Silva R, Sasaki VL, Bettini LFC, Soares PSM, Valandro IG, Cavazzola LT. Outcomes of Emergency Groin Hernia Repair in the Elderly: A Systematic Review. J Abdom Wall Surg. 13;2:11246.

19. Taverner F, Krishnan P, Baird R, von Ungern-Sternberg BS. Perioperative management of infant inguinal hernia surgery; a review of the recent literature. Pediatric Anesthesia. 2023;33(10):793–9.

20. Elhage SA, Thielen ON, Otero J, Huber AT, Grigg TM, Suddreth CE, et al. Perceptions and understanding about mesh and hernia surgery: What do patients really think? Surgery. 1;169(6):1400–6.

21. Aiolfi A, Cavalli M, Del Ferraro S, Manfredini L, Lombardo F, Bonitta G, et al. Total extraperitoneal (TEP) versus laparoscopic transabdominal preperitoneal (TAPP) hernioplasty: systematic review and trial sequential analysis of randomized controlled trials. Hernia. 2021 Oct;25(5):1147–57.

22. Wieland L, Alfarawan F, Bockhorn M, El-Sourani N. Comparison of eTEP and IPOM for ventral hernia surgery in the early postoperative period: a retrospective cohort study of a tertiary university centre. Hernia. 2024;28(6):2195–206.

23. Vogel R, Heinzelmann F, Büchler P, Mück B. Robot-Assisted Extraperitoneal Ventral Hernia Repair—Experience From the First 160 Consecutive Operations With Lateral eTEP and eTAR Techniques. J Abdom Wall Surg. 2024 Nov 22;3:13055.

24. Awad L, Reed B, Bollen E, Langridge BJ, Jasionowska S, Nikkhah D, et al. Does robotic surgery have a role in abdominal wall reconstruction? A systematic review and meta-analysis. Journal of Plastic, Reconstructive & Aesthetic Surgery. ;106:353–92.

25. Marckmann M, Krarup PM, Henriksen NA, Christoffersen MW, Jensen KK. Enhanced recovery after robotic ventral hernia repair: factors associated with overnight stay in hospital. Hernia. 5;28(1):223–31.

26. Gram-Hanssen A, Tolstrup A, Zetner D, Rosenberg J. Patient-Reported Outcome Measures for Patients Undergoing Inguinal Hernia Repair. Front Surg. 2020 Apr 16;7:17.

27. Jiménez DR, López-Cano M, Gonçalves VR, Tremolosa MV, Serra JS, Bravo-Salva A, et al. Understanding patient-reported knowledge of hernia surgery: a quantitative study. Hernia. ;26(3):761–8.

Aster HOSPITALS & CLINICS

Good Functional Outcome after Successful Surgical Treatment of "Terrible Triad of Elbow" at Aster Cedars Hospital and Clinic, Jebel Ali, Dubai

Dr. Shafeed Thadathil Parambil
Orthopaedics (Specialist)

PRESENTATION

- 32-year-old male
- No medical history
- No family history of medical illness
- Presented with pain, swelling and deformity of the right elbow following a fall at the work site

FINDINGS

During Examination:

- Physical examination revealed abrasions and ecchymosis over the right elbow
- The 3-point bony relationship of the elbow was altered with deformity and severe oedema

X-ray and CT scan of the right elbow showed:

- Fracture dislocation of the elbow with comminuted fracture of the radial head and coronoid (Regan and Morrey Type 1)

Pre-op X-ray images

Pre-op CT image

MRI scanning showed:

- Complete avulsion of the lateral ulnar collateral ligament (LUCL) from the humeral side

Pre-op MRI image

DURING PROCEDURE

- The procedure was done under general anaesthesia.
- The patient was positioned in supine with the affected limb on the side support.
- The right elbow and upper limb were prepared and draped.
- Kocher's approach - The plane between the extensor carpi ulnaris and anconeus was made.
- Radial head excision was done, and the neck was prepared for a prosthesis.
- The coronoids with soft tissue attachments stabilised by pullout sutures using Ethibond, passing through drill holes in the proximal ulna.
- Radial head replacement was done.
- The radial ulnar collateral ligament was repaired using a suture anchor.
- The stability of the elbow was checked, and the wound was closed in layers. After attaining haemostasis, the above elbow splint was applied in a functional position.

Post-op X-ray images

POST PROCEDURE

The right elbow was immobilised in a long arm splint for 2 weeks and a hinged elbow brace for 3 weeks. Two weeks after surgery, physiotherapy for mobilisation of the elbow started.

At the 3-month follow-up, the elbow flexion and extension showed a full range of movements.

Follow-up images at 3 months

DISCUSSION

The mode of injury in a terrible triad elbow is a fall on an outstretched hand in a supinated forearm, leading to a valgus force and axial loading. The failure mechanism of soft tissue constraints around the elbow, as described by O'Driscoll et al., progresses in an orderly fashion from lateral to medial. Starting from the LCL (lateral collateral ligament), it involves the anterior and posterior capsule and the MCL (medial collateral ligament). The trochlea causes a shear fracture of the coronoid. LCL, MCL and coronoid form the primary stabilisers of the joint. These primary stabilisers are disrupted in this injury pattern, leading to instability and justifying the injury as terrible.

REFERENCES

1. O'Driscoll SW, Jupiter JB, King GJ, Hotchkiss RN, Morrey BF. The unstable elbow. Instr Course Lect. 2001;50:89-102. PMID: 11372363.
2. Armstrong AD. The terrible triad injury of the elbow. Current Opinion in Orthopaedics. 2005;16:267-270.
3. Agha RA, Sohrabi C, Mathew G, Franchi T, Kerwan A, O'Neill N; PROCESS Group. The PROCESS 2020 Guideline: Updating Consensus Preferred Reporting Of CasESeries in Surgery (PROCESS) Guidelines. Int J Surg. 2020 Dec;84:231-235. doi: 10.1016/j.ijsu.2020.11.005.
4. van Riet RP, Morrey BF. Documentation of associated injuries occurring with radial head fracture. Clin Orthop Relat Res. 2008 Jan;466(1):130-4. doi: 10.1007/s11999-007-0064-8. Epub 2008 Jan 3. PMID: 18196384; PMCID: PMC2505295.
5. McKee MD, Pugh DM, Wild LM, Schemitsch EH, King GJ. Standard surgical protocol to treat elbow dislocations with radial head and coronoid fractures. Surgical technique. J Bone Joint Surg Am. 2005 Mar;87 Suppl 1(Pt 1):22-32. doi: 10.2106/JBJS.D.02933. PMID: 15743844.
6. Pierrart J, Bégué T, Mansat P; GEEC. Terrible triad of the elbow: treatment protocol and outcome in a series of eighteen cases. Injury. 2015 Jan;46 Suppl 1:S8-12. doi: 10.1016/S0020-1383(15)70004-5. Epub 2015 Jan 19. PMID: 26528938.
7. Morrey BF. Complex instability of the elbow. Instr Course Lect. 1998;47:157-64. PMID: 9571413.

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