View point

Debate on who should lead the trauma team: Surgeon or Critical care physician?
In support of surgeon

Box 1. Brief history of trauma care

In 1991 a well preserved Similaun mummy was discovered in the Italian Alps. The age of the mummy was estimated to be 55 centuries old! Traumatic wounds were the cause of his death!

From the beginning of recorded time, to the present-day mankind has suffered various kinds of traumatic injuries. The history of medical care of trauma is not surprisingly the history of management of military trauma. It has been an integral part of the domain of military or the army surgeons. However enormous evolution in trauma care has occurred as a result of management of battle causalities and the application of new surgical and medical techniques to traumatic wounds. The most important aspect of the evolution has been the multidisciplinary team approach in the management of trauma.

A dedicated trauma centre was started in 1941 in Birmingham and was called ‘Birmingham Accident Hospital’. This was started as an experiment in an attempt to improve care by providing continuous cover by a full time consultant surgeon, under whose care the patient remained from admission to discharge. This prime centre had three trauma teams each consisting of two surgeons and an anesthesiologist, and a burn team consisting of three surgeons. These teams were led by a senior surgeon called Professor William Gissane. His leadership was based on four premises:

i. Separation of the ill from the injured (Triage)
ii. Continuity of care by a single team from the time of admission to the time of discharge (Accountability)
iii. Care directed by a senior surgeon (Responsibility)
iv. Rehabilitation, which was started from the time of admission

Though as a surgeon, Professor Gissane was leading the trauma team-leader, he recognized the importance of a trained anesthetist within the team. The anesthetist was encouraged to manage airway, breathing and circulation. The others in the team were delegated with other responsibilities, including cross-matching blood. Birmingham Accident Hospital became the world’s first dedicated trauma centre! It’s concept of ‘multi-specialist approach’ which was obviously ahead of its time and has laid the foundation for the modern management of trauma and trauma-related problems.

Modern day trauma care involves multiple disciplines like surgery (includes general surgery, orthopedics, neurosurgery, plastic and reconstructive) anesthesia, critical care, hematology, infectious-diseases specialist, microbiology and blood bank services to be actively involved in the management. Such a multi-disciplinary team can be led by any of the specialists familiar with the overall management of a trauma patient. However with ever evolving specialities, trauma care too has witnessed the advent of nonsurgical specialists being trained in trauma care. These critical care physicians trained exclusively in the non-operative management of trauma, can lead the trauma team, by their premise of expertise in initial resuscitation. Nevertheless, the care of trauma has traditionally been the forte of the surgeon, and it is not surprising that in many centers, it is the surgeon who leads the trauma team!

This article discusses the merits and limitations of a surgeon as a trauma team leader.

“Surgical Personality”

Surgery is the most martial and masculine of medical specialties. A “Surgeon’s personality” has been best described by anthropologist Joan Cassell. A successful surgeon has the temperament and qualities of decisiveness, control, confidence and certitude, which are comparable to that of test pilots! Surgeons perform operations that are spectacular and definitive. The combat with death is carried out in the operating room, where the intrepid surgeon challenges the forces of destruction and disease. So much so that a surgeon views his relationship with the patient as an ‘agreement to cure’! And any action or events that threaten this ‘agreement’ i.e., surrendering the responsibility for care of patients to another specialist and thereby losing
Who should lead the trauma team: Surgeon or Critical care physician?

Box 2. Characteristics of a team leader in trauma care

- Should be thoroughly familiar with trauma triage
- Should be completely aware of trauma care protocols
- Should be exposed to evidence based studies on which the protocols are based
- Should be adept to the kinematics of various injuries
- Should be able to execute and perform multiple tasks of trauma resuscitation
- Should be capable to diagnose those cases which need immediate surgical intervention (1 to 3 hours)
- Should be proficient with immediate surgical and other interventions which might be required in the emergency room (ligation of an obvious visible bleeding vessel, decompression of tension pneumothorax, inserting chest drains, ability to safely intubate, performing an emergency tracheostomy, insertion of central lines, performing a peripheral cut-down, to perform DPL in when ultrasound assessment [FAST] is not available
- Should be an ACLS provider (in addition to ATLS)
- Should be aware of the acute physiological changes in major trauma and pathophysiological changes in presence of co-morbid conditions
- Should be skilled in various routine and critical care issues like optimization of effective circulation, fluid management, pain control and antibiotics

control over key decisions are strongly rebuffed and rejected!

From the preceding paragraph, it is clear that surgeons are used to being “in-charge” and take on the ‘ownership’ of patients. They are motivated by wanting to cure even in the face of overwhelming odds. With these qualities, it is not surprising to see that surgeons see themselves as “captain of the team” and assume the leadership role both in familiar and in unfamiliar situations!

Characteristics of an ideal trauma-team leader

Trauma care has traditionally been the exclusive preserve of general surgeons. But in the past two decades, other surgical specialties (like orthopedics) have developed specific interests and skills in management of trauma patients. In addition to developments in surgical procedures unique to certain specialties, there has been a realization that comprehensive care of these patients requires an improved knowledge of the pathophysiology of trauma as well as an understanding of the latest advances in trauma management.

Critical care has evolved as an important provider of care in management of severe trauma, especially in the resuscitation phase and also in the non-operative stages. With the surgeon and the intensivist competing for the mantle of team leader in trauma care, it is essential to review the characteristics of a team leader in trauma care (Box 2).

Can a surgeon fulfill all the characteristics of trauma care provider? (Indian Perspective)

An ideal training of a surgeon should include a comprehensive exposure to a wide range of critically ill and trauma patients with an Injury Severity Score (ISS) of >15, in addition to a grueling surgical apprenticeship. In many institutions in our country there is a serious lack of training in the management of not only trauma patients but also of perioperative surgical problems. Important ones like respiratory, cardiac, renal and nutritional issues are not stressed to the standard level. The need of the hour is to review the surgical training and provide all the members of the trauma team with a comprehensive training system in all aspects of resuscitation (Box 3).

Box 3. Role of surgeon in a trauma team

- Can attend to immediate surgical interventions on arrival at the casualty
- Can monitor fluid resuscitation and permissive hypotension
- Can monitor non-operative management of hemoperitoneum and hemothorax
- Can opt for emergency angiogram in non-operative cases
- Can predict emergent operative interventions
- Can perform emergency operations
Can an intensivist fulfill all the characteristics of trauma care provider? (Indian Perspective)

Critical care courses emphasize the importance of acute physiology afflicting any given acute event and the effect of coexisting chronic diseases. Most of the clinical scenarios to which an average critical-care trainee is exposed tend to be dominated by medical conditions (non-surgical), with a few centers providing a comprehensive training in all clinical aspects. Most such centers tend to be “open” units, where therapy is directed by the admitting consultant, thus limiting the experience of the trainee. However, some centers run a “closed” unit where the critical care provider manages their care, and it is such centers where the trainee benefits the most. With this background, most of the critical care providers are best suited to provide initial resuscitation and provide supportive care in the event of SIRS and MODS. However these personnel are perhaps limited somewhat in the performance of emergent surgical interventions and emergency surgical procedures. In other words, patients requiring an operation soon after arrival would benefit from a surgeon being physically present at the bedside, rather than being on-call, to help determine when an operation needs to be conducted.

Surgeon or Intensivist as team leader

For a surgeon to lead the team, one has to an effective intensivist and for an intensivist ought to be a surgeon as well to be deemed as trauma team leader!

Conclusion

In conclusion, either a surgeon or a critical care physician can be the team leader. A surgeon who leads the team the team needs necessarily to be an effective intensivist, but can an intensivist be a surgeon as well?...The responsibility of a trauma team leader is not only to provide complete, coor-