
SNOWSPORT SAFETY: WHO?, WHERE?, HOW?, WHAT ELSE?, AND SHOULD WE WEAR HELMETS AND WRIST GUARDS?

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Summary

Drawing upon a decade of snowsport safety research in Australia and Canada this presentation will explore the injury risks, contributing factors and potential preventative measures for snowsports.

Background

For decades snowsport enthusiasts have known the thrill of descending down hills on skis and boards 1, 2 But as gravity sports skiing and snowboarding are often experienced at high speeds 3-5, that may end in serious injury and even death leading to some to report that snowsports have a significant risk of injury 6 From an injury prevention perspective it is essential to go beyond clinical diagnosis and injury surveillance to explore contributing factors and evaluate the effectiveness of interventions 7. This presentation is informed by over a decade of Australian and Canadian interdisciplinary research 8-16 seeking to address questions such as: What is the injury risk in snowsports? Who is most at risk? Where were they when the injury occurred? How did the injury occur? What else may be contributing to the injury risk?, and What are the benefits of wearing personal protective equipment?

Main Themes

- Injury risk
- Epidemiology
- Preventative measures

Acknowledgements

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CHRISTCHURCH MOSQUE ATTACKS – HOSPITAL RESPONSE TO MASS CASUALTY EVENT

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Summary

Mass casualty events are unexpected, confronting, and potentially overwhelming for health care providers. Common themes and challenges are experienced in many mass casualty events such as communication, resource allocation, optimal patient care, and teamwork. This presentation will examine the hospital response at Christchurch and look at how these challenges were dealt with.

Background

On March 15, 2019, a gunman shot worshippers in two separate Mosques in Christchurch, killing 49 people at the scene, and injuring 47 men, women and children. Due to the close proximity of the Mosques, the injured patients began arriving at the hospital within 15 minutes of the first shots being fired. A hospital wide effort ensued to absorb and effectively manage this mass casualty event at the time and over the subsequent weeks and months.

Main Themes

- Mass casualty events
- Trauma

References

- National Trauma Network
- Professor Karim Brohi presentation, October 2019
- <https://www.majortrauma.nz/news-and-events/news/>

MILITARY DAMAGE CONTROL SURGERY

WGCDR Kylie Hall
BSc (Hons), MBBS (Hons) FANZCA, FFPMANZCA

Military Anaesthetist
RAAF and Royal Brisbane and Women's Hospital, QLD

Summary

The Royal Australian Airforce provides a light man portable surgical facility designed specifically to provide damage control resuscitation and surgery in the austere environment.

Background

The ADF deploys personnel in a variety of circumstances with differing degrees of threat and injury levels. Damage control surgery is now considered an integral part of resuscitation in the bleeding patient. The RAAF have designed a niche capability that can be deployed into areas of low threat, to provide life or limb saving surgery if required.

Main Themes

Damage control surgery, Resuscitation, Austere surgery.

TRAUMA IN THE PREGNANT PATIENT

Dr Peter Bland
MBBS, FRANZCOG, FRCOG, Dip Ed UNE

Staff Specialist
Royal North Shore, Sydney
RANZCOG Training Coordinator for Northern Sydney

Summary

Trauma in the Pregnant Patient covers a wide variety of conditions and there are two patients to care for. A range of clinicians is required in an unpredictable and critical situation to address the complex scenarios with a natural competition for priority.

Guidelines, by necessity, are fairly generic in content, so that close communication and negotiation is required to manage what are rare, if not, once-in-a-career, situations.

This talk looks at the formal management when a pregnant woman experiences trauma and then offers discussion of some clinical scenarios experienced by the presenter

VISCOELASTIC TESTING IN TRAUMA & MASSIVE BLOOD LOSS

Dr Chris Hogan

Consultant Haematologist
Director of Laboratory Haematology, Austin Hospital. Vic

Summary

Viscoelastic testing, to assist in the assessment of haemostasis, and in directing relevant transfusion interventions, in particular using either the ROTEM® or TEG® technologies, has now become “standard of care” in the majority of major trauma centres, and also in hospitals dealing with massive blood loss and massive transfusion in other clinical settings.

Trauma patients may present already on anticoagulants, including the newer oral anticoagulants, and/or anti-platelet drugs. These agents complicate management, test interpretation and haemostatic interventions.

Evidence is accumulating, justifying a more aggressive and focussed approach to early fibrinogen replacement and maintenance in bleeding in major trauma. The utilisation of such viscoelastic testing in this context is associated with reduced, and likely more tailored non-red cell, and red cell transfusion requirements. However, data demonstrating actual longitudinal clinical outcome advantages to the use of these modalities is less robust.

The literature and experience surrounding this practice in trauma settings will be reviewed. Also, a “survival-guide” to interpretation of these tests, and relevant action triggers will be presented.

PELVIC FRACTURE MANAGEMENT: FROM SYMPTOM MANAGEMENT TO DAMAGE CONTROL

Mr Chris Kondogiannis
MBBS, FRACS, FAOrthA

Orthopaedic Surgeon
Royal Melbourne Hospital, Victoria, Australia

Summary :

Pelvic fractures can occur from low velocity falls to high energy trauma. The spectrum of management ranges from supportive care, to emergent bony stabilisation and interventional radiology. Through this talk, we will explore the spectrum of early and delayed management of various fracture patterns.

PBL - ACUTE KNEE INJURY AND ASSOCIATED KNEE CONDITIONS

Mr Chris Kondogiannis
MBBS, FRACS, FAOrthA

Orthopaedic Surgeon
Royal Melbourne Hospital, Victoria, Australia

Summary :

A focus on history and examination as well as initial management tips.

UROLOGICAL TRAUMA...TRACTORS, TRAVESTY AND TREACHERY

Dr David Merrilees
MBChB, FRACS (Urology)

Laparoscopic Urological Surgeon
Laparoscopy Auckland, Mercy Ascot

Summary

Update on urological trauma from a large urban trauma hospital in Auckland, New Zealand.
Covering renal, pelvic and genital trauma.

AIRWAY MANAGEMENT IN TRAUMA

Dr Yasmin Endlich

Dr med Univ (Vienna), FANZCA, MMed, DCH

Consultant

Royal Adelaide Hospital, Women's and Children's Hospital,
Adelaide Anaesthetic Services, Adelaide, South Australia, Australia

Summary

Up to a third of the intubations in the emergency department are for trauma patients (1,2). This patient population presents numerous unique challenges for the attending medical professional and for successful airway management, the mechanism and type of injury need to be considered carefully (3).

Additionally, contamination of the airway, traumatic brain injury, cervical spine immobility, uncooperative, agitated patients, laryngeal and facial trauma might make airway management very difficult.

Acute emergency presentations of laryngotracheal trauma are rare, but when occurring pose significant challenges to treating clinicians. These injuries have a high risk for substantial patient morbidity and mortality. Trauma may result from various mechanisms, and airway damage can occur anywhere from the hyoid bone level to the carina. Treatment of laryngeal trauma includes early diagnosis and early identification of injuries. Immediate attendance and timely management are critical.

Airway management in trauma includes supraglottic and infraglottic manoeuvres, ranging from awake tracheal intubation to emergency front of neck access.

Background

The description of a “difficult airway” depends on the definition used. Anatomical markers are usually poor predictors, with the majority of difficult intubations being unexpected.

The pathophysiology of trauma adds another layer of complexity to the management of these patients. The understanding of when and why trauma patients might run into difficulties with their airway management might provide guidance in the choice of airway device and technique used

Main Themes

- Airway management trauma scenarios
- Basic and “advanced” airway assessment and management techniques

References :

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A REMOTE ROAD TO TRAUMA MEDICINE

Dr Tim Duncan
MBBS, FACRRM, JCCA, Dip. Film & TV

Aeromedical Retrieval Specialist
Royal Flying Doctor Service, Mt Isa Base, QLD, Australia

Summary:

Being able to provide the gift of life makes a career in medicine most worthwhile. Sometimes, however, it takes a personal encounter with a traumatic crisis to provide this clarity and motivation. When remote emergency medical care and the quick response of three passing Aboriginal men saved the life of Dr Tim Duncan, it was clear to him that making the most difference in medicine required that he devote his life to remote aeromedical retrieval and Indigenous primary care. The experience also gave him an important perspective, that of a patient teetering on the brink.

The lecture covers Tim's traumatic car accident and his response to this experience, both in terms of his personal and professional development. From a disillusioned junior doctor with plans to pursue a career in cinema and film making, Tim has gone on to discover fulfillment in his work as a generalist anaesthetist and 'flying doctor' in far north west Queensland and the Northern Territory.

The Royal Flying Doctor service in Queensland is the only medical response unit to service the entire State and will fly up to 1500km to reach some cases. Snake and crocodile bites, myocardial infarctions, rodeo, car and motorbike injuries are all in a day's work for this remote aeromedical retrievalist who discovered his passion for trauma management in the midst of his own near death.

Background:

The Royal Flying Doctor Service of Australia is the longest continually running aeromedical retrieval service in the world. Founded by the Reverend John Flynn in 1928 (known then as the Australian Inland Mission) the first flight, on May 17th of that year, took place from Cloncurry to Julia Creek in North West Queensland on a single engine de Havilland 50 biplane leased from Qantas for 2 shillings a mile. Prior to that remote Australians had little to no chance of medical retrieval following severe trauma.

Main Themes:

Retrieval medicine, trauma care in remote Australia, Indigenous health, doctors as patients, alternative career paths, film making, finding meaning in medicine, RFDS, John Flynn

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PBL - DAMAGE CONTROL RESUSCITATION IN THE MILITARY: WHAT CAN WE LEARN?

Dr Simon Hendel

MBBS (Hons) GDip Journalism FANZCA

Staff Specialist Anaesthetist & Trauma Consultant
The Alfred Hospital, Melbourne, Australia
Major, Royal Australian Army Medical Corps

Summary

This will be an informal PBL discussion around approach to Damage Control Resuscitation (DCR) in the military and civilian environment. Several cases will be used as prompts for discussion, as will the latest joint trauma system clinical practice guideline for DCR.

OCULAR TRAUMA

Dr Erik Letko
M.D.

Consultant
Colorado Permanente Medical Group, Denver, CO

Summary

To provide overview of common ocular injuries, their diagnosis and treatment.

Methods

Review of peer reviewed literature and presentation of selected eye trauma cases.

Results

Ocular injuries can result in permanent vision loss or blindness in one or both eyes. Prompt diagnosis and intervention can lead to a better prognosis. Conclusions: First line responders might play a critical role in reduction of long term disability.

LIVER AND PANCREATIC TRAUMA

Mr James Fergusson
BMed, FRACS

Hepatobiliary Surgeon
Canberra Hospital, Garran, ACT

Summary

There are grading systems to classify injuries to the pancreas and liver that help direct their management. The management of pancreatic injuries depends on the location of the injury and whether there is involvement of the pancreatic duct. Techniques from elective liver surgery can be applied to aid control of haemorrhage from the liver.

Background

Injuries to the liver are common, but rarely require operative intervention. Injuries to the pancreas and duodenum are uncommon due to the protected location of these organs.

Main Themes

- Liver Trauma
- Duodenal and Pancreatic Trauma
- Hepatic Injury Management
- References

References

- <https://www.uptodate.com/contents/management-of-duodenal-and-pancreatic-trauma-in-adults>
- <https://www.uptodate.com/contents/management-of-hepatic-trauma-in-adults>
- <https://www.uptodate.com/contents/surgical-techniques-for-managing-hepatic-injury>

THE ANATOMY AND PHYSIOLOGY OF TRAUMA IN CHILDREN

A/Prof Philip Ragg
MBBS, FANZCA, PG DipEcho

Deputy Director
Anaesthesia and Pain Management
Royal Children's Hospital, Melbourne

Summary

Trauma in children manifests very differently to adults physically, physiologically and psychologically. Body shape and size, relative elasticity of tissues and lack of awareness of surroundings affect not only the pattern of injuries but also the incidence and outcome.

The incidence of burns, blunt and penetrating trauma vary with age with serious injury peaking in late teenage years. 20% of deaths in teenagers are due to trauma and approximately 50% of these are due to motor vehicles (including pedestrian and bicycle) or falls. 27% of these deaths are due to head injury in the 1-15 year age range.

The anatomy and physiology of children will be revised here with relevance to managing trauma. Assessment and management of the child requires an understanding of these differences. The airway of a child, the anatomy of the lung and ventilation, cardiovascular differences, handling of drugs and body fluid distribution are critical when managing the injured child.

Equipment used for resuscitation and transport need to be specific for different aged children. Many centres have age appropriate trolleys for guidelines, monitoring, ventilation and intubation and ongoing cardiac support. Apps also exist to guide practitioners with these decisions.

Some new developments include pain numbing devices for cannulation and blood taking called the "Coolsense Device"

Fluid management in children and the rationale for using different types of fluid and dosing regimens are discussed.

A major change for children having procedures or surgery is a modification to clear liquid fasting guidelines. These have been reduced to one hour, improving compliance, hydration and patient satisfaction. Interestingly our regurgitation and aspiration incidence is also lower.

TRAINING TEAMS

Dr Robert Scott
BSc(Med) MBBS FANZCA

Consultant Anaesthetist, Consultant in Prehospital & Retrieval Medicine
St George Hospital & NSW Ambulance, Sydney, NSW

Summary

Why are trauma teams so hard? Isn't it just ABC? This presentation will explore the complexities involved with trauma teams, and some of the current approaches to training teams. This will draw on experiences and literature in training teams in both the hospital and pre-hospital arenas.

Main Themes

Education, Trauma, Prehospital Medicine

ECMO AND TRAUMA

Dr Mark Nicholls
MBBS, FRACP, FJFICM, FCICM

Senior Staff Specialist Intensive Care and ECMO Retrieval Specialist
St Vincent's Hospital, Darlinghurst, Sydney, NSW, Australia

Summary

Extracorporeal membrane oxygenation (ECMO) is the use of blood perfusion devices to provide advanced cardiac and/or respiratory support. Advances in percutaneous vascular cannula insertion, membrane oxygenators, and biocompatible pump technologies have simplified ECMO usage. This simplification has improved safety and increasing experience has led to an increase in usage and uses. In trauma, ECMO has increasingly been used as salvage therapy for severe cardiac and/or respiratory failure.

Background

The first adult ECMO survival was a trauma patient reported by Hill et al in 1972. However early technology was complicated by problematic vascular access, circuit thrombosis, ongoing haemorrhage, and major bleeding complications. Initial interest in adult ECMO waned quickly. The development of what is called ECMO II technology has revolutionized ECMO usage. Major changes in the technology started to occur by 2002 with developments by Novalung, Maquet, Sorin, and Jostra. These new devices enabled safer, longer support runs with improved survival rates. In profound shocked states, ECMO can prevent further end-organ injury and enable end-organ recovery that was previously not possible. ECMO also enables stabilisation which provides a time window and opportunity for diagnostic workup, urgent procedures and end-organ recovery. In time, ECMO will be more commonplace but at this stage, there still needs to be a certain institutional volume of ECMO runs to minimise morbidity and mortality. An ECMO program requires appropriately trained staff (physicians, nurses and allied health), equipment resources and logistical planning. Most of the benefit comes from institutional experience balancing the benefit vs risk in decision making, actively taking steps to move the patient forward, and vigilance for ECMO complications. ECMO should still only be used when the underlying problem is potentially reversible, or the patient is a candidate for long-term alternative support such as LVAD for cardiogenic shock. These same principles apply to the use of ECMO in trauma. Initially, when ECMO II started there was great hesitancy in managing any patient with bleeding risk. These concerns have lessened over time with improving technology, increasing experience, the ability to run patients off any anticoagulant and regularly having patients admitted to intensive care units on ECMO post-transplantation or LVAD insertion.

Main Themes

The main themes with a focus on trauma, are an overview of ECMO historical development, an overview of the current technology and insertion techniques, patient selection for improved survival and avoidance of futility, common pitfalls, and troubleshooting and future directions.

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LAW AND TRAUMA

Ms Kate Reynolds

B.Sc.(RN), GradDip OHS, Juris Doctor (Law)

Medical Deference and Health care Lawyer
Avant Law, Perth , WA

Summary

Civil Claims in Australia: An up-to-date overview of tort law specific to medical practitioners within the trauma landscape.

Background

In this presentation we will be discussing emerging issues in medical negligence and what to expect when litigation is commenced against you, including civil procedural requirements, issues of liability and the assessment of quantum of damages.

Main Themes

Content will focus on recent case law as to peer acceptance and standard of care issues for practitioners who work in trauma and the legislative framework underpinning judicial decisions in Australia.

References

- Civil Liability Act (jurisdiction based);
- *Child and Adolescent Health Service v Sunday John Mabior by next friend Mary Kelei* [2019] WASCA 151;
- *Frangie v South Western Sydney Local Health District t/as Liverpool Hospital* [2010] NSWDC 42;
- *Phelan v Melbourne Health* [2019] VCC 241.

PAIN FOLLOWING TRAUMA: PERSPECTIVES ON THE RECOVERY PROCESS

A/Prof Malcolm Hogg
MBBS Grad Dip (PM), FANZCA FFPMANZCA FIPP

Head of Pain Services, Melbourne Health
Clinical Associate Professor, Faculty of Medicine,
Dentistry and Health Sciences, The University of Melbourne

Summary

Acute pain experience is universal following tissue damage associated with surgery and trauma, typically managed by acute services with medical assessment/management, opioids and simple adjuvant medications. Studies examining pain persisting following surgery and trauma have identified numerous risk factors, which may account for up to 50% of the variance in the incidence of chronic pain in this population. Poorly controlled post-operative pain appears to be the biggest single influence, but thereafter it's a range of psycho-social aspects that assume greatest importance. The perception of injustice, including loss and blame, is of interest as it complicates recovery following compensable injury.

A clinical approach to pain assessment and management following trauma can include:

- *WHO is the person?*
 - gender, age, education status, anxiety or depression, previous pain experience, opioid exposure
 - identify and mitigate risk factors for poorly controlled post-operative pain and persistent pain in the perioperative period
- *WHAT are the mechanisms?*
 - superficial and deep somatic, and visceral nociception; ? inflammation
 - nerve injury: partial/complete
 - sensitization (nociplastic): peripheral +/- central
- *WHAT is the impact of pain?*
 - on physical, psychological and social functioning
 - potential for positive/negative feedback of physical, psychological and social management strategies e.g. solicitous systems including health

- *WHAT is best multidimensional management plan?*
 - identify patients at risk, educate, mitigate risk factors
 - optimal pain management in early post-operative period
 - reduce central sensitization: ketamine
 - role for regional anaesthesia/analgesia
 - implement subacute strategy, including pathway of care
 - TCAD, GBP, clinical review/follow-up

There is limited evidence that peri-operative ketamine or use of regional anaesthesia techniques can reduce the incidence of chronic pain, although this likely reflects improved post-operative pain control. Targeted muscle re-innervation (TMR) with amputation and mind-body techniques in orthopaedic injuries are two approaches showing promise in the prevention of chronic pain, but definitive RCT's are required.

The societal changes afoot will require a more flexible approach to management of pain and disability following trauma. Opioid use will increasingly come under scrutiny, yet medicinal cannabis may become more available: perspectives on both will be presented. Incorporating an opioid governance process (including use of monitoring systems) and early management of psychosocial aspects will be required for optimal care of the trauma patient in recovery.

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HOW IS HEALTH POLICY MADE IN CANBERRA?

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Medicines Australia Advisory Council

Advocates with very strong policy cases more often than not fail to gain any traction with governments, partly because they tend to think it is enough to present their case to decision makers. Real change is much more strategic, tactical, and extends well beyond outlining an issue and offering a policy solution. This presentation will draw on real policy examples to show how positive change can be achieved, even in complex health systems.

The art of influencing public policy requires a sound understanding of the mechanics of government process and the key points of intervention that are most likely to be successful.

However, to do this well and achieve an impact requires more than submitting a policy paper to a parliamentary inquiry. It requires real policy expertise within the organisation and the capacity to develop evidence-informed policy based on sound research. It also draws on the expertise of a broad range of membership voices that make the organisation less vulnerable to ‘vested interest’. Sound consultation and capacity to represent a large and diverse membership as an honest broker is key to credibility with the community as well as politicians and governments.

Relationships are fundamental to achieving change. Maximising impact requires good working relationships with key stakeholders across the health spectrum which is based on mutual interest and outcomes. For example, presenting new information and putting forward solutions makes peak bodies more influential with government.

Translating these relationship achievements via an authoritative voice of influence and direct advocacy to the community via the media can be powerful and influential if executed well.

Fundamental is the capacity to ‘represent’ a consumer voice in everything that you do. A skilled and politically savvy media strategy (both social and traditional) executed with authority to speak on behalf of important experts and often more importantly, consumers is important.

This talk will outline the keys to success in achieving policy and practice change using the National Action Plan for Pain Management as a case in point. In particular:

- ‘building trust’ with politicians, influential stakeholders and government bureaucrats through a strong and consistent voice on codeine up-scheduling and opioid regulatory policies
- the strategic use of media to build profile and credibility including placement of consumer voices telling their own stories in the public conversation
- leveraging political capital to secure funding for PainAustralia to develop the Plan, consult with a broad range of stakeholders and achieve consensus of experts and consumers to put forward a document with authority to government that has now received Federal Government endorsement and will soon be considered for endorsement by all Australian Health Ministers.

PBL: PRE-HOSPITAL TRAUMA CARE

Dr Craig Ellis
MBChB (Otago), Dip IMC (RCSEd), FACEM

Deputy Medical Director
St John, New Zealand

Background

The last couple of years has seen a plethora of important and potentially practice changing papers published in relation to pre-hospital trauma care. In this session we will analyse and discuss several trials that may (or may not be practice changing). There continues to be substantial issues with pre-hospital research in terms of design, ethics and recruitment.

Main Themes

- Challenges of research in the pre-hospital environment.
- Transferability within pre-hospital research (and from in-hospital to pre-hospital)
- What's new? Is it important and will it change practice? Is all what it seems with some trials?

THE MAJOR TRAUMA CONSULTANT, A TU`S JOURNEY

Dr Ben Warrick
MBbCH, FRCA, Dip IMC, Dip Mtn med

Consultant
Major Trauma and PHEM, Trust lead for major Trauma.
Royal Cornwall Hospital and Devon Air Ambulance

Summary

The evolution of the Major Trauma service at the Royal Cornwall Hospital culminating in the creation of a 24/7 Major Trauma consultant delivered service.

Background

A discussion and look at the evidence base for major trauma systems. How has contemporary UK practise developed and how does it differ internationally.

Main Themes

Major Trauma training, Trauma team structure, Specialty background

FILLING THE G.A.P. IN RIB FRACTURES

Dr Joseph Byrne
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Staff Specialist Anaesthetist
Westmead Hospital, Sydney

Summary

An overview of clinical management of Rib fractured ribs as experienced by a tertiary metropolitan hospital in Sydney Australia.

Background

Westmead Anaesthesia is involved with the provision of analgesia for nearly 500 rib fracture cases per annum. This care involves using a combination of traditional oral and intravenous analgesic techniques, with the addition of various newer regional chest wall blocks to achieve optimal analgesia and recovery..

Main Themes

Medical, Surgical and Regional management of rib fractures, incorporating “Good Analgesic Practice” (G.A.P.) concepts

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