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Introduction

Dogmas in trauma care, stemming from eminence based medicine continue to be challenged with the increasing rigours of scientific evaluation. Crossingham and Georgiou in this issue review the latest treatment of rectal injuries. They have utilised some existing clinical better practice guidelines, including the Eastern Association for the Surgery of Trauma (EAST) web based better practice guidelines. Their review brings into question the need for rectal washouts and pre-sacral drainage in patients with rectal injury. There are currently a number of practices which we undertake in trauma without any scientific evidence. Some practices are intuitively correct but some such as external fixation of the pelvis for haemorrhage control in pelvic trauma make little sense.

For those of you wishing to have a frank discussion of day to day trauma issues I am pleased to announce the launch of an Australasian focused email discussion group.

To join please email, charmaine.miranda@swsahs.nsw.gov.au or log onto our web site www.swsahs.nsw.gov.au/livtrauma for details.

Nurses have always been a cornerstone of trauma care and it is pleasing to publish the Inaugural Maria Seger Memorial Lecture in this issue. From all in Trauma we wish you a wonderful Christmas and a tranquil new year.

Michael Sugrue



TRAUMA

Grapevine



Traumatic Injuries to the Rectum

Crossingham G, Georgiou A, University of Bristol Medical School, UK

Case History

52 year old male presented to an Urban Emergency Department having been hit by a train, whilst walking along the tracks. He was subsequently transferred to Liverpool Hospital by helicopter with a Medical Retrieval Team.

Primary Survey

- A** - Patient maintained. Hard collar in situ
- B** - Breathing spontaneously. AE L=R. Chest clear
- C** - P 66bpm. BP 114/73
- D** - GCS 15. PERL.
- M** - Hit by train from behind
- I** - Large laceration extending from left lower flank to left buttock
Pain in lower back and left arm
Large blood loss observed at the scene

- S** - P 80bpm. BP 100 systolic. GCS 15
- T** - Hard collar, MAST suit, 20mg morphine and 1L Gelofusin

Secondary Survey

- Pelvic / left iliac fossa tenderness. No blood at urethral meatus.
- Deep laceration of perineum and left buttock extending antero-cranially.
- Reduced anal tone.
- Left leg 3cm shorter than right but neurovascularly intact.



Figure 1: Large Perineal Laceration
The patient was subsequently transferred to Liverpool Hospital. The MAST suit had been removed and a sheet tied around his pelvis



Figure 2: Patient in resus room



Traumatic Injuries to the Rectum

Continued

Treatment

- Trauma series radiology. Pelvic X-ray revealed a diastasis of left sacro-iliac joint, superior and inferior fractures of the left pubic rami fi vertically unstable fracture with 2cm vertical shift. CXR and C-spine views were clear.

- CT abdomen: Buttock laceration with pelvic fracture. Air in retroperitoneal tissue plane.

Subsequently

Where would you go from here?

Find out next issue.

TRAUMATIC INJURIES TO THE RECTUM

Crossingham G, Georgiou A, Sugrue M*,
University of Bristol Medical School, UK and UNSW* Liverpool

Introduction

Whilst the colon ranks second only to the small bowel as the most frequently injured organ in penetrating trauma, injuries to the rectum are less common. Despite this fact, rectal injuries continue to carry a high mortality. During the Vietnam War, mortality from rectal injury was 20%¹. Today, mortality from blunt rectal injury is as high as 50%, compared with only 30% for a colonic injury². Whilst the virulent complications of traumatic injuries to the rectum continue to pose a problem in modern practice, debate over the optimal management of these patients persists. Injuries to the colon may be, in principle, similar to those of the rectum, however their management must differ due to important anatomical and functional differences.

Aetiology

Recent studies from urban trauma centres worldwide suggest that firearms account for approximately 80%, and blunt trauma accounts for 10% of all rectal injuries³. Stab wounds and impalements are relatively rare, accounting for less than 3% of injuries. More infrequently, injuries can occur following hyper-abduction of the thighs, resulting in perineal lacerations that extend through the anus, and bone edges from pelvic fractures can lacerate the rectum. Sexual abuse must be considered following rectal injuries in children⁴. Obstetric procedures can also inflict rectal damage.

In Australia blunt trauma forms a larger proportion of all injuries. In a recent study of 112 patients from Brisbane², 40 had penetrating injuries, 41 had blunt injuries and 33 had iatrogenic injuries (barium enema and colonoscopy). The mortality from penetrating injuries was zero, from blunt colonic injuries was 17%, whereas from blunt rectal injuries was 50%. Such a high mortality demands a thorough evidence based approach to patient care.

Diagnosis

Digital rectal examination and proctoscopy (which may be performed at the time of anaesthesia if patient discomfort is too high) should be performed in all patients suspected of having rectal injuries. Further to this, diagnostic roentgenograms should be obtained to identify

AAST Rectal Organ Injury Scale

Grade	Injury Description	
I	Haematoma	Contusion or haematoma without de-vascularisation
II	Laceration	Partial thickness laceration
III	Laceration	Laceration <50% of circumference
IV	Laceration	Laceration ≥50% of circumference
V	Laceration	Full thickness laceration with extension into the perineum
VI	Vascular	Devascularised segment



trajectories, foreign bodies and pelvic fractures.

The extent of rectal injuries can be assessed using a grading scale proposed by the Organ injury Scaling Committee³.

Management

There continues to be much debate about appropriate management of rectal injuries in the literature, however certain trends do seem to be emerging as appropriate evidence based solutions.

Primary Anastomosis or Faecal Diversion?

It has long been believed that diversion of the faecal stream was essential for appropriate management of rectal injuries. However there continues to be a gathering body of evidence that suggests this is not the case.

One of the primary reasons for diverting the faecal stream is to prevent septic related complications of anastomotic leak. Extensive work in the US has shown that septic related conditions are no more prevalent in patients undergoing primary anastomosis than they are in patients undergoing diversion^{5,6}. One study has found septic related conditions to be less prevalent in patients receiving primary anastomosis⁷. Only 3 independent risk factors for the development of abdominal complications have been identified by multicentre trial: severe faecal contamination, transfusion of > 4U blood within the first 24 hours, and single agent antibiotic prophylaxis⁶. However, even in patients identified to be at high risk, and in those requiring requiring bowel resection for the removal of massively injured segments⁷, primary anastomosis is advocated due to the reduced quality of life and the need for subsequent operation following colostomy, especially if it occurs in the absence of shock, associated injuries or gross faecal soiling⁸. Support for this rationale comes from cost-utility and baseline analysis, which has shown that colostomy has the least quality of life and the greatest cost to the healthcare provider, when compared with primary repair⁹. The appropriate stance on these high risk patients is however far from clear; Cornwell and colleagues feel that in these high-risk patients with destructive colon injuries, resection and faecal diversion should at least be considered.

With the high prevalence of blunt trauma seen in Australia, Miller and Schache have examined the outcomes of blunt trauma patients with rectal injury. They have found blunt injury to be a specific indication for colostomy formation on account of the high rates of devitalising injury⁸.

Aside from abdominal complications, overall morbidity and mortality rates are equivalent in patients treated by either method¹⁰ and so the

above evidence would suggest that primary anastomosis is a preferable option in the absence of blunt trauma, for no reason other than cost and patient comfort. However risk factors for the failure of primary anastomosis have to date been difficult to identify¹¹. In contrast, morbidity from colostomy is relatively easy to recognise. Berne et al.¹², suggested that whilst colonic injuries should be treated by primary anastomosis on account of the high morbidity associated with colostomy closure, reversal of colostomies for rectal injuries was relatively safe. Proximal colostomy for extra-peritoneal rectal injuries was therefore recommended as the treatment of choice, in contrast to recommendations made by authors in more recent papers.

There is no conclusive evidence that irrigation of the distal rectal lumen is an essential adjunct.

Antibiotic Prophylaxis

Further to the above surgical management, evidence suggests that there is no benefit in extending antibiotic prophylaxis beyond 24 hours, even among the highest risk patients with penetrating abdominal trauma. Whilst large multicentre trials are necessary to improve the statistical validity of this finding, this evidence should act as a framework for reducing erroneous use of antibiotic use in trauma patients¹³.

Loop or Endostomy?

Although the more recent evidence suggest that primary anastomosis is the management of choice, there are cases where colostomies will have to be utilised. Regardless of which type of colostomy is formed, there is universal agreement that it must completely divert the faecal stream. A loop colostomy with stapling of the distal lumen will ensure total faecal diversion¹⁴. However the ease of closure will be adversely influenced by the closure of the distal lumen. An end colostomy and mucous fistula will also ensure complete faecal diversion, but the technique suffers from the complexity of its construction, the risk of additional stomal complications, and the requirement of an extensive laparotomy to reconstruct the GI tract.

A study from 1988, retrospectively analysed 40 patients who had suffered various penetrating and blunt rectal trauma. 70% were managed with loop colostomies and 30% with endostomies. The relative risk for both major and minor complications was 2.33, for the endostomy versus the loop colostomy¹⁵.

Irrigation

There is no conclusive evidence that irrigation of the distal rectal lumen is an essential adjunct. Lavenson and Cohen's experience during the Vietnam War provided compelling data in support of the procedure¹⁶. Of 18 patients treated by colostomy and drainage, four (22%) patients died of septic complications and 11 (61%) developed abscesses, rectal fistulae or pelvic osteomyelitis. Whereas among 20 patients treated with colostomy, drainage, debridement, closure of rectal wound and irrigation, there were no mortalities and only one septic complication. Literature based on civilian casualties by Shannon et al., revealed a 46% septic complication rate in those who had not been irrigated compared with an 8% rate in the irrigated group¹⁷.

In contrast, more contemporary work seems to suggest that irrigation confers no risk or benefit to the patient¹⁸. Gonzalez et al¹⁹ found that for penetrating injuries provided the faecal stream was diverted and drains were in-situ, irrigation had no effect on infectious complications. While the above evidence is inconclusive as to whether irrigation is beneficial, literature from a small scale study in 1988 actually implies that washouts actually increase the rate of pre-sacral infection²². A possible mechanism for this is that irrigation may force faecal material through unsutured extra-peritoneal perforations and increase the risk of pelvic infections.

The failure of the civilian literature to demonstrate the benefits of irrigation may be related to the small volume of stool in the rectum of civilians compared to soldiers, who may not have the opportunity of

regular bowel movements and are often constipated²⁰.

Drainage

The need for drainage of extra-peritoneal rectal injuries has been reasonably well established. In a 1989 study, failure to place a drain resulted in significant increase in septic complications²¹. A more recent study reached a similar conclusion, suggesting that drains should only be employed with an unexplored extra-peritoneal rectal wound, thus minimising abscess formation²².

It is generally agreed that drainage is unnecessary for isolated intra-peritoneal injuries, and can actually increase infection rates if used inappropriately²³.

Rectal Injuries Associated With Pelvic Fractures

Fragments of bone from pelvic fractures may damage the rectum. Anorectal lacerations may also occur in patients with pelvic fractures, where the fracture is not the cause of the laceration. These situations pose difficult surgical problems due to the propensity for pelvic fractures to bleed and the need for adequate septic control. Closed fractures may require opening of a pelvic haematoma in order to insert drains and avoid fatal pelvic sepsis. This may however precipitate haemorrhage from a previously tamponaded haematoma.

In actively bleeding open fractures with anorectal lacerations, closing the injury tight enough to control haemorrhage may result in inadequate drainage and sepsis.

The latest recommendations in these difficult situations is firstly to control haemorrhage, then to return to theatre within 24 hours for definitive management of the rectal injury.

Fragments of bone from pelvic fractures may damage the rectum.

Care must be taken, however, to ensure the integrity of the local blood

supply to avoid further ischaemic damage in the area. Although rare, Hughes and Perez reported a case of rectal infarction after sigmoid colectomy for blunt traumatic perforation in a patient with a major pelvic fracture²⁴, emphasising the need to preserve the superior rectal arteries.

Conclusion

Traumatic rectal injuries are of considerable importance, primarily on account of the high mortality associated with them. There has been much debate in the literature over the appropriate management of patients with rectal trauma, but now some clear evidence based guidelines are emerging.

Many authors now seem to advocate management by primary anastomosis, although disagreement still exists over particularly high risk patients. Rates of abdominal sepsis seem equivalent, if not lower than in patients managed by colostomy; morbidity and mortality rates are similar, patients prefer it, and it is a financially preferable option. This evidence has spurred an emerging trend towards primary anastomosis and resection, where in the US, up to 81% of patients are managed in this way. However, evidence does exist to suggest that blunt rectal trauma (especially seen in Australia) warrants colostomy.

Despite this evidence, it is important to individualise the management of all patients; as exemplified by the above case history, whereby perineal injuries and the suspected anal sphincter damage meant that a defunctioning colostomy was mandatory. Where colostomy is required, the evidence presented here would tend to support the use of loop colostomy as the safer option.

Less controversy surrounds the use of drains, where the majority of studies recommend that irrigation is obsolete in the management of the civilian population.

The above collection of evidence aims to provide a useful framework for the management of patients with rectal trauma.

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Delivered By: Kate FitzPatrick, RN MSN – Trauma Program Manager Division of Traumatology & Surgical Critical Care, Department of Surgery - University of Pennsylvania Medical Center – Philadelphia

It is truly a great privilege for me to be able to present this tribute address in honor of Maria Seger. Although I never met Maria, I feel that I have come to know her through my conversations with those who knew her well. I would have liked to have had the chance to know her. It took some amount of soul searching for me to decide what I could say in this address that would be inspirational and at the same time do justice to the life and legacy of such a devoted practitioner. Something struck me as I read the beautiful words that were shared at Maria's memorial service and it became apparent to me that what made Maria special was that she possessed the gift so basic to all extraordinary nurses – that being the balance of the art and the science of our profession. I'd like to share with you my thoughts on what that balance is and how we can use the example of special nurses like Maria to advance nursing to greater heights in spite of great modern day challenges.

Clearly, being an exceptional nurse involves more than a solid knowledge base. All the intelligence in the world won't guarantee that a patient feels safe and comforted in their toughest moments. Humanistic care that treats the person not just the body is artful care.

What exactly are the components of the art of what nurses do? Is it having a kind heart, patience, and gentleness? Is it having the ability to empathize with the situations of those we serve? Is it being non-judgmental and accepting of all walks of life? Is it appreciating the extreme privilege this profession provides in allowing us to touch human lives in such enormous ways? I believe it is all of these things. Things that are in many ways innate qualities and difficult to teach. We can by our example, however, show others the art in what we do. Having the ability to see each person we contact as a human being... a mother, a brother, a daughter, a father each that has a unique life story and who are much, much more than their medical diagnosis or injuries.

The poetry of Neville Strump (on right) – one of the academic leaders of the School of Nursing at the University of Pennsylvania illustrates so beautifully this appreciation that I refer to... The poem is called "Each Day".

I fully believe that caring for the sick involves two separate but inseparable components; the mind and the body. Focusing solely on the body without considering the mind or being skilled at the science but lacking the art results in incomplete care.

Those very special nurses, & we all know them, we've all worked with them and hopefully we all strive to be them, who embody the art and science of nursing who effortlessly bring great comfort and peace to those in their care. In today's environment the system around us has made it increasingly difficult to be able to provide this complete care. Nursing shortages have led to hettier patient assignments, nurses are working harder, traveling nurses and agency nurses are being utilized at high rates and so the sense of teamwork has

been minimized. Nurses are feeling overworked, over stressed. We are feeling frustrated because we aren't able to provide the "complete" care.

There are other issues that have challenged the profession, new nurses are being offered jobs in higher acuity areas which has led to high turn over and reality shock. Transient, temporary staff nurses are being utilized at higher rates. These staff are being paid high salaries without having to burden themselves with getting too invested in the issues facing the fulltime staff.

Each Day

*That summer
I would pause before the almost too narrow door
With its neatly lettered almost forbidding sign
"Intensive Care Unit"
To hear the unmistakable rhythmic gush of a respirator
And the steady beep of a monitor
Then, I would enter
And silently pray:
Oh God, Help me to see past the bags, see past the tubes, see past the machines,
That I might see into their eyes, see into their minds, see into their hearts,
And bring them some small part of my healthy self
That they will still believe
Life is worth living; Life is worth the fight*



We all face a real challenge – continuing to provide balanced care in which we do right by our patients, while at the same time we battle complex system difficulties.

But our challenge is broader than dealing with systemic difficulties in healthcare – we also must constantly keep current with the science of healthcare. Continual learning of new therapies, new techniques and new knowledge that will best serve our patients is essential. Nurses who are already over worked and overwhelmed are not so likely to prioritize continuing education and professional development. In trauma centers in the US this has created new issues related to compliance with credentialing standards mandated at Trauma Centers. It's not all bad however, I believe that there are positive changes that are occurring that make keeping up with the science more bearable. Computer technology has changed beyond measure the way we access knowledge. Endless resources are now available from home/work computers that allow for the easier acquisition of new healthcare knowledge. We need to be leaders in advancing this technology in ways that enhances the practice of trauma nursing. Technology has also streamlined aspects of bedside care by providing tools that maximize our precious time.

These changes are very important and their impact

will probably not fully be appreciated for years to come.

Another dimension of tending to the science of our profession is being aware of how technology has made our patients more savvy about their health and medical conditions. It is essential that we stay on top of new information because our patients are becoming much better informed. We will have to serve in new ways to assure that information that our patient's have is accurate and relative. We must be careful as we become more and more technically advanced that we don't upset the balance between the art and the science. Human touch, human conversation, eye contact are powerful healers. Our world today is moving away from traditional forms of communication that involve face to face contact – we email, we fax, we leave voice messages - we visit less, we talk in the presence of each other less – we must strive to maintain elements of human touch in our practice.

There are other dilemmas that technology has presented to us. Technological advances in computerization of medical data has raised concerns about the security of very personal health/medical information. We need to pay attention to this closely and advocate for protection of our patient's (an our own) personal medical information.

I'd like to spend a few minutes more on the nursing shortage – I know from talking to some of my Australian colleagues that this problem has impacted practice here. How did we get here? And more importantly how can we critically review history and make sense of the patterns of our profession. I've alluded to the tough working conditions and the financial instability of health organizations that have decreased the confidence of many nurses about their future. Difficulties with staffing have also virtually eliminated those aspects of this career that provide fulfillment – continuing education opportunities, providing complete care to a safe and reasonable number of patients, working with skilled, experienced and competent practitioners. We have been here before – the nursing shortages seem to be cyclical in nature – we saw shortages recently in the late eighties and early nineties. This was followed by a saturated job market and layoffs. In recent years the cycle has repeated. We have new issues now with diminishing numbers of people choosing nursing as a career. There is a lack of qualified graduate nurses to fill vacant positions. The average age of nurses in the US is nearing 50.

We need to critically review our history and look at the way in which we market our profession and be diligent about protecting this profession. I don't know of many nurses I work with who are mother's that would encourage their children to choose nursing as their career. That is quite telltale. We need to analyze and begin proactive planning to assure that our future is determined by us and not the system around us. We need to see the positive in this negative situation. The current shortage provides an

Nurses - the Cornerstone of Trauma Care

opportunity for our voices to be heard about the value of the service we provide and the serious implications to hospitals that a lack of nurses brings.

What is it that we do? – Does the public understand what is it we do? Have we been smart about establishing a realistic image that encourages people to seek a career in nursing? From early on we have suffered from image problems. We have been glamorized and demoralized by unrealistic ad campaigns and media portrayals. I know from my own experience that people really don't understand the essence of what I do.

How do we change this – I don't know that I have the magic answers to this, but I do know that each of us has a responsibility to assure that our unique and important profession is portrayed in an accurate and positive light. The most powerful way to achieve this is through our own actions in the course of ordinary days. Take the time to establish liaisons/mentorships with high schools and youth groups. Get our younger generation interested in health and medicine by sharing your experience. Take advantage of opportunities to work cooperatively with the media on campaigns that help the public better understand our service and value.

I think that the type of people who go into trauma nursing have some common fibers. They are gutsy and tenacious generally. They like a challenge and can function well in maddening conditions. Trauma nurses have a spirit within them that can effect change even when the circumstances look hopeless. I have been privileged to work with many phenomenal trauma nurses. Nurses who like Maria Seger have an inner force that is incredibly powerful. We are called upon to channel that inner force more and more these days. In my practice the increase in interpersonal violence and the reality of terrorism have dimmed the light in some of our best practitioners. Human beings are not equipped to deal with violence day in and day out. Although the cumulative effects of violence on our psyches may not at first be apparent, with continued exposure the effects become more visible. Burn out and cynicism and a sense of overwhelm are all symptoms I have felt and have witnessed in my colleagues. We need to support one another and be aware of how the changing face of trauma impacts our practice and our lives.

Nurses have been dealing with violence for as far back as we've been an organized profession. We need to remember when we feel overwhelmed or paralyzed by the tragedy that we see; that we can make a difference. Pioneering nurses like Clara Barton showed the world that simply being strong enough to look violence in the face and to provide comfort and companionship when evil lurks provide immeasurable benefits. This picture is from the 1898 cover of the Christian Herald – the caption describes a cable received from Clara Barton from Havana stating simply that "she was with the wounded". It is clear that the tools available to Clara were minimal and what nurses in this era relied on were simply their human skills. We must remember the importance of

calling upon our human skills to comfort our patients, their families, our colleagues and ourselves – this can help ease the formidableness of violence.

Sometimes we get so caught up in the business of our lives, that we don't take time to tend to things that are crucial to our lives. The unexpected loss of a cherished colleague forces us to take pause and identify where we are in our own situations and where we should be.

Dr. Sugrue shared with me a written copy of the words spoken about Maria at her Memorial Service. I'd like to take pause with all of you now and reflect on what Maria's example can mean for each of us.

How can we take the tragedy of a loss of one of our great nurses and learn the lessons in this event that will make us stronger and better at what we do?

Maria was noted to be someone "who warmed to the environment in which she was placed" and "who reveled in the busyness and the unpredictable nature of our practice". She was described as

- Energetic
- Motivated
- Enthusiastic
- With a great capacity & willingness to learn

One of her former teachers, Valda Wile noted that "Maria was a MASTER PRACTITIONER who will be remembered for her skill and knowledge in her specialty field for a long time to come".

Reading these descriptions I begin to see Maria as the embodiment of the type of trauma nurse that I hope I will be remembered as. And I challenge all of you here to consider where you are now in your professional development and where you want to be. Let Maria's passing fuel the fire within you to tackle the many obstacles in our profession and to cultivate new interest in what we do.

I know that Maria has earned her place in the history of exemplary nursing practice alongside many other important nurses who came before us. Australian nurses have been prominent in the development of international networks in nursing to advance the profession. In this picture from 1901 Two Australian nurses are represented – a clear indication that nurses from this beautiful country would have a powerful role in shaping the profession. Be brave and determined in your careers and let Maria and Ms McGahey and Ms Arkle be spirits who fuel your motivation.

Be a hero to your patients in the day to day course of your work. And although many of us won't have statues built in our honor after we are gone, we can leave behind something even more meaningful – the knowledge that we shared our gifts to the full of our capacity.

Remember the following as you conduct your daily lives:

These are excerpts from a writing called "50 things a nurse should know"

- **Keep your sense of humor**
- **Don't prejudge. Patients and families may surprise you**
- **Difficult families usually need the most help**
- **Stop and have lunch – situations can look better on a full stomach**
- **Wear comfortable shoes**
- **You are part of the decision making process – but the decisions are made by the patients and families**
- **Be an advocate**
- **Be an educator**
- **A sleeping patient does not mean pain control has been achieved**
- **Be quick with a smile, It may be the only smile the patient may see all day**
- **And finally...**
- **Communication among team members will make everything run more smoothly.**

Valde Wile, faculty of the New South Wales College of Nursing, said the following about Maria – let her words resonate with you in the days to come...

She said: "I am privileged to have been Maria's teacher, her mentor and her friend. However in more recent years I unwittingly learned many things from her. I have watched, admired and learned from watching her performance in the trauma room. I watched her educate nurses and doctors alike in all aspects of trauma care, and I watched her commit all her energy to a specialty that she loved very much. I learned from her what strength and commitment are all about. I hope that the things she put in place in the Trauma System will stand the test of time, she has left us with a great legacy"

Maria Seger A Master Practitioner – an honorable distinction and one that I hope I can achieve in my lifetime....

I will conclude with the words of mother Teresa on hearing the call....

There is a light in this world, a healing spirit more powerful than any darkness we may encounter. We sometimes lose sight of this force when there is suffering, too much pain. Then suddenly the spirit will emerge through the lives of ordinary people who hear the call and answer in extraordinary ways
Mother Teresa

I wish you all Godspeed as you continue to answer the call. And I thank you for the honor of being asked to give this address today. Let us all learn from the example of great nurses like Maria and continue to develop our specialty. Most importantly let us all strive to leave our patients, their families and our profession in a better place than which we found them – in the very special way that Maria did...

Thank you again for the incredible honor of being here and for the invitation to present this tribute to Maria.



What's New in Trauma

Demetriades D, et al From the Departments of Surgery and Emergency Medicine, Division of Trauma and Critical Care, University of Southern California, Keck School of Medicine, Los Angeles, California.

J Trauma 2001;51:754-757

Background: Generally age alone is not a criterion for trauma team activation (TTA). In the present study, Demetriades and his team evaluated the role of age 70 years as a criterion for Trauma Team activation (TTA).

Methods: Their study was a trauma registry study that included injured patients 70 years of age or older. Patients who died in hospital, were admitted to the intensive care unit (ICU) within 24 hours, or had a nonorthopedic operation were assumed to benefit from TTA.

Results: During a 7.5-year period, 883 elderly (70 years) trauma patients meeting trauma center criteria were admitted to LA County



trauma center. Overall, 223 patients (25%) met at least one of the standard TTA criteria. The mortality in this group was 50%, the ICU admission rate was 39%, and a nonorthopedic operation was required in 35%. The remaining 660 patients (75%) did not meet standard TTA criteria. The mortality was 16%, the need for ICU admission was 24%, and nonorthopedic

operations were required in 19%. Sixty-three percent of patients with severe injuries (Injury Severity Score > 15) and 25% of patients with critical injuries (Injury Severity Score > 30) did not have any of the standard hemodynamic criteria for TTA.

Conclusion: Elderly trauma patients have a high mortality, even with fairly minor or moderately severe injuries. A significant number of elderly patients with severe injuries do not meet the standard criteria for TTA. Demetriades suggested that age 70 years alone should be a criterion for TTA.



BACKCHAT

We hope our two Honorary Fellows in Trauma will enjoy their stay, Dr. Yoshiro Abe a surgeon on a Government Fellowship from Japan is with us until Christmas and our new Honorary Fellows Dr. Robert Russell from the UK and Lt. Col Ashok Puranik from India starting later in the year. If you would like to undertake an attachment in Trauma please contact us. We welcome Dr. Martin Heetveld from Holland as our new Trauma Fellow

following on the footsteps of Dr. Scott D'Amours who has spent 18 months in this position.

Congratulations to Kate Curtis from St. George, winner of the inaugural David Sloane Prize, for best scientific paper at SWAN this year. Kate was 2kg heavier leaving the meeting having won the latest edition of Trauma by Feliciano, Moore and Mattox.

References (Traumatic Injuries to the Rectum):

- Ganchrow MI, Lavenson GS, McNamara JJ. Surgical management of traumatic injuries of the colon and rectum. Arch Surg. 100:515, 1970.
- Miller BJ, Schache DJ. Colorectal injury: where do we stand with repair. ANZ Journal of Surgery. 66:348-352, 1996.
- Mattox KL, Feliciano DV, Moore EE (eds). Injury to the colon and rectum. In: Trauma (4th edition) pp763-782 Magraw-Hill Companies Inc 2000.
- Ameh EA. Anorectal injuries in children. Paediatric Surgery International. 16:388-391, 2000.
- Gonzalez RP, Falimirski ME, Holevar MR; Further evaluation of colostomy in penetrating colon injury. American Surgeon. 66:342-346, 2000.
- Demetriades D, Murray JA, Chan L, Ordonez C, Bowley D, Nagy KK, Cornwell EE 3rd, Velmahos GC, Munoz N, Hatzitheoflou C, Schwab CW, Rodriguez A, Cornejo C, Davis KA, Namias N, Wisner DH, Ivatury RR, Moore EE, Acosta JA, Maull KI, Thomason MH, Spain DA. Committee on Multicentre Clinical Trials. American Association for the Surgery of Trauma. Penetrating colon injuries requiring resection: diversion or primary anastomosis? An AAST prospective multicentre study. Journal of Trauma Injury Infection & Critical Care 50:765-775, 2001.
- Mihmanli M, Erzurumlu K, Guney M. Primary repairing in penetrating colon injuries. Hepatogastroenterology 43:819-822, 1996.
- Miller BJ, Schache DJ. Colorectal injury: where do we stand with repair? ANZ Journal of Surgery 66:348-352, 1996.
- Brasel KJ, Borgstrom DC, Weigelt JA. Management of penetrating colon trauma: a cost-utility analysis. Surgery 125:471-479, 1999.
- Carillo EH, Somberg LB, Ceballos CE, Martini MA Jr, Ginzburg E, Sosa JL, Martin LC. Blunt traumatic injuries to the colon and rectum. J. American College of Surgeons. 183:548-552.
- Conrad JK, Ferry KM, Foreman ML, Gogel BM, Fisher TM, Livingston SA. Changing management trends in penetrating colon trauma. Diseases of the colon and rectum. 43:466-471, 2000.
- Berne JD, Velmahos GC, Chan LS, Asensio JA, Demetriades D. The high morbidity of colostomy closure after trauma: further support for the primary repair of colon injuries. Surgery 123:157-164, 1998.
- Cornwell EE 3rd, Dougherty WR, Berne TV, Velmahos G, Murray JA, Chahwan S, Belzberg H, Falabella A, Morales IR, Asensio J, Demetriades D. Duration of antibiotic prophylaxis in high risk patients with penetrating abdominal trauma: a prospective randomised trial. J Gastrointestinal Surgery. 3:648-653, 1999.
- Maull KL, Sachatello CR, Ernst CB. The deep perineal laceration. J. Trauma 17:989, 1988.
- Berne JD, Velnah GC, Chan LS, Asensio JA, Demetriades D. The high morbidity of colostomy closure after trauma: further support for the primary repair of colon injuries. Surgery 123(2):157-164, 1998 Feb.
- Lavenson GS, Cohen A. Management of rectal injuries. Am J Surg. 122: 226, 1971.
- Shannon FL, Moore EE, Moore FA, McCroskey BL. Value of distal colon washout in civilian rectal trauma - reducing gut bacterial translocation. J. Trauma 28:989, 1988.
- Tuggle D, Huber PJ. Management of rectal trauma. Am J Surg. 148:806, 1984.
- Gonzalez RP, Falimirski ME, Holevar MR. The role of presacral drainage in the management of penetrating rectal injuries. Journal of Trauma-Injury Infection & Critical Care. 45(4):656-661, 1998 Oct.
- Armstrong RG, Schnitt HJ, Pattersonson LT. Combat wounds of the extra-peritoneal rectum. Surgery 74:570, 1973.
- Burch JM, Feliciano DV, Mattox KL. Colostomy and drainage of civilian gunshot wounds - management of civilian injuries. Am J Surg. 53:37, 1986.
- McGrath V, Fabian TC, Croce MA, Minard G, Pritchard FE. Rectal trauma; management based on anatomic distinctions. American Surgeon. 64(12): 1136-1141, 1998 Dec.
- Velmahos GC, Gomez H, Falabella A, Demetriades D. Operative management of civilian gunshot wounds; simpler is better. World Journal of Surgery 24(1): 114-118, 2000 Jan.
- Hughes TM, Perez JV. A case of rectal ischaemia after sigmoid colectomy for traumatic perforation in a patient with a major pelvic fracture. Journal of Trauma - Injury, Infection & Critical Care. 40(2): 302-303, 1996 Feb.

CLINICAL INFORMATION CODING AND COSTING ANALYSIS OF TRAUMA PATIENTS AT ST. GEORGE HOSPITAL

Kate Curtis, Louise Bollard, Cara Dickson, Peter Grove, Tracy Garnam, Pam Jones

Aim: To investigate the accuracy of trauma coding at St. George Hospital and identify any aspects which may be improved and have financial consequence.

Method: The co-morbidities, diagnoses, procedures and complications of admission recorded and entered into the clinical information database for each admitted trauma patient during August 2000 were supplied to the Trauma Service. The clinical information records were compared with the summary of patient care obtained by the trauma coordinators on their daily rounds. This record is an outline of the trauma patient's in-hospital stay, and currently utilized for the trauma service database and associated projects.

Clinical information records requiring alteration were returned with additional information and re-entered into the clinical information database. An excel spreadsheet contained the patient MRN, original ANDRG, ANDRG post trauma service analysis, number of alterations made in primary diagnosis, secondary diagnoses, procedures and complications. The altered clinical information records were then forwarded to the Case mix unit for financial analysis.

Results: For the month of August, consisted of 46 trauma patient

admissions, and only 7% of overall admissions for the year 2000. Many errors and omissions were noted. 12 of the 46 records had to have their ANDRG's changed, which resulted in the identification of over \$28,000 of funding. These errors mean that there is potentially \$470,936 of funding that is not being identified for trauma patients. This contributes significantly to difficulty in managing the budget. This projection is based on the number of trauma admissions for the year 2000.

Discussion: The high error rate is probably due to the complex nature of trauma patients, extensive patient records, poor documentation, multiple procedures and injuries¹. As a result of the recommendations of the NSW Health Council (2000), all NSW hospitals area required to fund the planned and acute activity component of a hospital's budget using the episode funding approach¹. The introduction of episode funding in NSW will enable managers and clinicians to analyse variations in cost of an episode of care, however this is only valid if coding is accurate². It is proposed that trauma patient coding should at the very least be reviewed by an experienced trauma data collector, perhaps, in conjunction with an increase in staffing levels be integrated into the role of the trauma coordinator, as is the case in many US institutions³.

References:

1. Menadue J. Reforms in NSW to include casemix, three year budgets and a metropolitan plan. *Healthcover* Vol April-May, p. 11-14, 2000.
2. Manadue J. & Kibble G. Report of the NSW Health Council – A better health system for NSW. NSW Government, Gladesville, I. 2000.
3. Southard P. Trauma center challenge; Survival in a managed care market. *Journal of Emergency Nursing*. Vol 20, no. 2, pp 162-163. 1994
4. Spisso J., O'Callaghan C., McKennan M. & Holcroft J. Improved quality of care and reduction of housestaff workload using trauma nurse practitioners. *The Journal of Trauma: Injury, Infection & Critical Care*, vol 30, no 6 pp 660-665. 1990.

BOOK REVIEW: *Initial Management of Injuries: An evidence based approach*

Editors: RF Sing, PM Reilly, WJ Messick Published by BMJ Books, London, 2001

This nearly 300 page soft-cover book is directed towards those who care for the acutely injured patient. Authors for each chapter have been selected from some of the busier trauma centres in the United States. Topics critical to the management of trauma patients are presented in a straightforward format from the perspective of those seeing the patient – that is in terms of the presenting clinical injury pattern instead of managing an already diagnosed problem. Examples include blunt chest trauma, penetrating trauma to the back and flank, evaluation of vascular proximity in penetrating extremity trauma, mangled extremity, hypothermia, mass casualty and preparation for patient transfer.

Chapters are well written and brief. A short introduction to the clinical problem is followed by critical issues relating to immediate management of the injury, then by means of investigation, management options and finally a summary. The reference list following each section is uniquely arranged into Class I, II and III publications based on level of scientific evidence. Each reference also includes a helpful but brief summary of the article. At the end of each chapter is a helpful clinical management algorithm based on the previously referenced articles.

Initial Management of Injuries is an easy read and addresses many important controversies in the clinical management of injuries frequently seen in a busy trauma center. The simplicity of discussion and unique means of presenting referenced articles make it an excellent reference for those involved in caring for trauma patients.

Scott K. D'Amours,
MD,CM, FRCS(C)

Meetings



Definitive Surgical Trauma Care Course
(DSTC)Liverpool: 31st July and 1st August,
2002

Contact: Michael Sugrue or Charmaine
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Email: charmaine.miranda@swsahs.nsw.gov.au

Melbourne: 3rd & 4th April, 2002 and 11th &
12th November, 2002

Contact: Peter Danne or Judy Forsyth (61 3)
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SWAN 10 will be held on the 2nd and 3rd
of August, 2002, bringing to you a number of
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Contact: Thelma Allen
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