

Genito Urinary Trauma: 10 Years Experience in Najran, Saudi Arabia

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Abstract

Introduction and objective: To report 10 years experience with Genito-urinary tract (GUT) trauma in Najran, Kingdom of Saudi Arabia.

Patients and methods: All patients who presented with GUT trauma to the Urology Department, King Khaled Hospital, Najran, Kingdom of Saudi Arabia seen between November 1991 and February 2002 were included in the study.

Results: A total of 155 GUT trauma patients were analysed. Trauma affected all GUT organs of predominantly young males. Blunt and penetrating trauma affected 121 (78%) and 19 (11.6%) patients, respectively. Iatrogenic trauma affected 15 patients. Genital and Urological trauma accounted for 109 (70.3) and 46 (29.7%) cases, respectively. Blunt testis trauma affected 56 (36%) cases and presented with acute Scrotum. Most blunt testicular trauma healed conservatively. Blunt sex trauma of erect penis due to rupture tunica albuginea (fracture penis) affected 31 (20%) cases, presented with acute penis and treated surgically.

Urological trauma presented with haematuria. Blunt Motor Car Accident (MCA) caused 34 (21.9%) GUT injuries as part of poly-trauma patients of whom 4 died soon after arrival to hospital. Kidney trauma affected 26 (16.8) and rupture urethra 8 of whom 6 patients were left with permanent morbidity of impotence and incontinence. Bullet injury was the main penetrating insult causing also poly-trauma involving GUT and abdominal organs of 15 patients, including 7 kidneys, 5 bladder rupture with 4 vesico-rectal or colonic fistulae, one extra-peritoneal bladder rupture and 3 penile amputations. Bullets caused one death due to peritonitis complicating delayed repair of vesico-rectal fistula.

Conclusion: The presented study demonstrates that MCA and penile injuries are common in Saudi Arabia. Most trauma cases were treated surgically. Most cases of testicular trauma were treated conservatively with successful outcome preserving lives and function of the organs. Penetrating Bullet trauma causing bladder and colonic perforations should be primarily repaired on presentation.

Key words: Motor car accidents, Genito urinary trauma, Fracture penis, Bullet injury, Iatrogenic trauma

Introduction

A theme issue on road traffic crashes at British Medical Journal (BMJ) highlighted the dangers of Motor Car Accidents (MCA). "Toxic complacency" and "War on the roads" were

factual commendable editorials with justifiable titles [1, 2]. This is supported not only by the data reported in BMJ theme issue but also by the following experience and data that might allow some comparison, demonstrating MCA are more dangerous than bullets in civilian life.

Retrospective analysis of a decade experience with Genito-Urinary Tract (GUT) trauma patients admitted to Urology Department, King Khalid Hospital, Najran, at south province of Saudi Arabia is reported here. Data on the insult type, trauma category, organ involvement, emergency management and outcome of 155 patients seen between November 1991 and February 2002, inclusive, is presented here. Data neither included victims who died before arrival to hospital nor those who had permanent GUT morbidity as result of cerebrospinal trauma paralysis.

Trauma affected all GUT organs of predominantly young males. Blunt and penetrating trauma affected 121 (78%) and 19 (11.6%) patients, respectively. The remaining 15 cases were iatrogenic injuries. Genital and Urological trauma accounted for 109 (70.3) and 46 (29.7%) cases, respectively. Blunt testis trauma affected 56 (36%) cases and presented with acute Scrotum. Most blunt testicular trauma healed conservatively. Blunt sexual trauma of erect penis due to rupture tunica albuginea (fracture penis) affected 31 (20%) cases, presented with acute penis and treated surgically as detailed later.

Urological trauma presented with haematuria. Blunt MCA caused 34 (21.9%) GUT injuries as part of poly-trauma patients of whom 4 died soon after arrival to Accident and Emergency Department at hospital. Kidney trauma affected 26 (16.8) and rupture urethra 8 of whom 6 patients were left with permanent morbidity of impotence and incontinence. Bullet injury was the main penetrating insult causing also poly-trauma involving GUT and abdominal organs of 15 patients, including 7 kidneys, 4 bladder rupture with 4 vesico-rectal or colonic fistulae, one extra-peritoneal bladder rupture and 3 penile amputations. Bullets caused one death due to peritonitis complicating delayed repair of vesico-rectal fistula.

Management was organ specific that aimed at saving life, organ and function, and avoiding further iatrogenic morbidity. Most kidneys were salvaged except two of Bullet severed pedicle. Intra-peritoneal rupture of bladder was managed by primary repair of perforated bowels and bladder in two cases. Another two patients were treated by supra-pubic catheter and colostomy with deferred fistula repair that proved impossible later due to tough adhesions. One of the latter 2 patients died with peritonitis on delayed repair. Best outcome of bladder colonic fistulae is primary repair on presentation.

Complete urethral rupture occurred with pelvis fracture of 6 patients, initially treated by supra-pubic catheter in 4 and supra-pubic with railroaded urethral catheter in 2 cases explored for other abdominal trauma, all have permanent impotence and incontinence. Other GUT trauma included: Amputated penis due to Bullet injury successfully re-implanted in 2 cases. The third case had burn necrosis of penis due to high voltage electric wire (the wire was also hit by Bullet) was lost. Iatrogenic urethral injuries of 12 cases and 3 vesico-vaginal fistulae affected females at obstetric surgery were cured.

Saudi Health Statistical Yearbook 1998 reported 9052839 casualty attendants Nationwide, of whom 1015022 (11.2%) were injuries and 78835 (7.8%) were MCA trauma. Males of 15-44 years of age accounted for 75% of MCA trauma morbidity and mortality. Trauma is the second recognized cause of 5094 (15.5%) annual deaths of which MCA contributed 2365 (46.4%) while all cancers caused 5.8% deaths per year. Latest figures of year 2001 from Najran area with 253115 population of whom our hospital is serving 60% showed casualty attendants of 152594 (60%), injuries 19837 (13%) and MCA trauma 1227 (6.2%) of whom 38 (3.1%) died. Najran population contributed 2.2% MCA trauma and 7.3% mortality of National figures. Saudi Arabia is arguably considered one of the safest areas on Earth but also seem to be having a war on its roads [3]. If anti-smoking campaign ever worked, should vehicle manufacturers put the warning: "Cars can seriously damage your health or cause death"?

Surgical repair is recommended for penile fracture to restore erectile function and penile fracture is more common than suggested by previous publications [4]. The reasons for the low reporting are that not every urologist reports his clinical experience of the condition, and those who try do not succeed because there is little to add to present knowledge. Also, perhaps many patients did not seek treatment in the past.

I reviewed my experience with GUT over a decade, emphasising the triage affecting emergency management and outcome [3]. The relative incidence of penile fracture can be expressed as a percentage of GUT trauma. Of 155 patients, 143 (92%) were men; 93 (58%) had genital trauma and 62 (42%) urological, with multiple trauma in 50 (32%) and isolated trauma in 105 (68%), being blunt in 121 (78%), penetrating in 19 (12%) and iatrogenic in 15 (8%). Blunt testicular trauma from various insults affected 56 (36%) patients, with blunt sexual trauma of

penile fractures affecting 31 (20%) of patients. Traffic accidents caused multiple trauma in 34 (22%) patients, four died, and 26 (17%) had renal and eight urethral injuries. Gunshot trauma affected 15 (10%) patients, affecting seven kidneys (two excised), with four intra-peritoneal bladder and bowel perforations, and three penile amputations (Figure 1, 2).



Figure 1: Shows Gunshot trauma to penis causing partial amputation with extrusion of the right testes



Figure 2: Shows successful re-implantation of amputated penis shown in figure 1

Penile fracture incidence in my series also suggests that it might be more common than previously thought. All affected patients had blunt sexual trauma to the erect penis but three reported manual injury on 'rolling over in bed with erect penises'. A colleague has reported 42 case series over a longer period, with a presentation rate of 3.4 cases per year each in an area with a total population of 250 000.

Points worth considering in managing penile fracture are:

- That no special investigation is required for making the diagnosis [4];
- The exact side and site of tunical rupture is locatable with remarkable accuracy before surgery, as the history and examination are pathognomonic (Figure 3);
- The sudden snap and pain is reported by all patients;
- The affected tunica side is marked by a bulge of penile ecchymosis;
- Finger-tip palpation and the rolling sign affirm the tender fracture site, which lies near the middle of the free penile shaft of the right tunica in >80% of cases [5].



Figure 3: Shows typical fracture penis

In the present 27 patients who consented to surgery the fractured side was correctly predicted in all and the exact site in 25 (93%) patients who were surgically explored, 15 via a circum-coronal de-gloving skin incision, and 12 having a simple lateral skin incision over the fracture site, which spared the neurovascular bundle dorsally and urethra ventrally (Figure 4,5) [5]. A ruptured urethra is rare, seen only in two of 27 cases, evident by urethral bleeding and adequately treated by catheterization. Ruptured penile vessels were not encountered. These observations make day surgery under local or nerve-block anaesthetic possible.

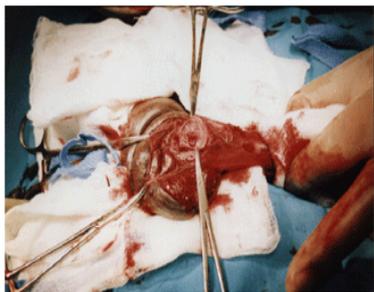


Figure 4: Shows surgical exploration of fracture penis demonstrating the rupture tunica



Figure 5: Shows the marked site of fracture penis correctly located in 93% of cases

The low incidence of skin necrosis with de-gloving incision in the large series reported is surprising [6]. It affected three of 15 of my patients and was two to three times more common in a previous series [4]. Although this incision healed as well as primary intention, it took longer (6–8 weeks). Penson et al. reported the clinical and experimental haemodynamics of impotence in patients who refused the surgical repair of a

fractured penis [7]. This report differed from the accepted view in having a high incidence of fractures due to manual causes [4]. Considering the global popularity of normal sex and the curvature of the erect penis it is surprising that penile fracture is not as common elsewhere as in Kermanshah, Iran [6]. However, most cases occur as a result of blunt sexual trauma during marital sex; as an alternative to Zargooshi's explanation of manual fracture, it is possible that Muslim men refuse to incriminate their wives (termed 'Horma' or 'sacred person').

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