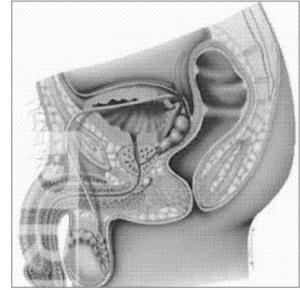


ORIGINAL

PROF-841

UROLOGICAL INJURIES

**DR. SARDAR ALI**
FCPS, FRCS

Consultant Surgeon,
DHQ Hospital Khanewal
Ex-senior Registrar,
Mayo Hospital Lahore.

DR.SALEEM AKHTAR,
FCPS, FRCS

32 Model Town Faisalababd.

DR.SYED TAHIR AHMAD SHAH
MD, DABS, FACS

Professor of Surgery,
KEMC Lahore.

Copyright: 10th September, 2004.

ABSTRACT ... drsardarali@hotmail.com **Objectives:** To find out the mechanism of injury and urological organ involved. **Design of Study:** Prospective study. **Period:** two years (from 1996 to 1998) **Setting:** West Surgical Ward Mayo Hospital Lahore. **Material and Methods:** A total numbers of 30 patients were included in the study. All the patients above the age of 12 years having injury to kidney, ureters, bladder, and combination were included. **Results:** Penetrating injuries due to firearms were the dominant cause i.e. in kidneys and ureters (100%) and in urinary bladder (50%). Kidney was the most common urological organ injured (56.66%) followed by the ureters (20%) and Urinary bladder (13.33%). **Conclusions:** Urological injuries account for 10% of abdomen injuries. The vast majority are penetrating injuries due to firearms. The injuries may better be prevented than treated by strict maintenance of law & order.

Key Words: IVU

INTRODUCTION

The increase in the incidence of violence continues unabated. Increased social disharmony, frustration and a lack of faith in the institutions responsible for law & order and delivery of justice encourage a fatalistic attitude to settle issues by violent means. Emergency rooms in major urban hospitals are crowded by trauma

patients. Abdominal trauma constitutes a major source of morbidity and mortality in this group¹.

About 10% of all injuries in the emergency room involves the urinary system to some extent. Early diagnosis is essential to prevent serious complications*².

Although well protected by its surrounding structures kidney is the most frequently affected organ in the abdominal injuries. Similarly, a large number of patients presenting with abdominal trauma sustain injury to the rest of urinary system like ureters and urinary bladder.

The aim of the study was to assess;

1. Mechanism of injury.
2. Urological organ involved
3. Site and severity of the injury.

PATIENTS & METHOD

The study was carried out in West Surgical Ward of Mayo Hospital Lahore in two years. The study included a total of 30 patients. Both males and females above the age of 12 years were included in the study. All the patients were admitted through emergency.

All the patients of abdominal trauma with a suspicion of urological injuries were thoroughly assessed clinically for haematuria, perineal haematoma, signs of acute abdomen and associated extra abdominal injuries.

Organs involved	Mechanism of injury			
	Penetrating		Blunt	
	No of pts.	%age	No of pts.	%age
Kidney	17	100	-	-
Ureters	6	100	-	-
Urinary Bladder	2	50	2	50
Kidney+ureters	1	100	-	-
Ureters+ urinary bladder	2	100	-	-
Total	28	93.33%	2	6.66%

All the baseline investigations like haematocrit, blood grouping and urine analysis were done. Plane and

contrast radiological studies like IVU and cystogram were also carried out where required and the general condition of the patient allowed.

A record was kept of mechanism of injury, mode of presentation, pre operative assessment and operative findings.

RESULTS

Penetrating injuries due to firearms were the dominant cause i.e. in kidneys and ureters (100%) and in urinary bladder (50%) (table I).

Kidney was the most common urological organ injured (56.66%) followed by the ureters (20%) and Urinary bladder (13.33%)(table II).

Organ	Cases	%age
Kidney	17	56.66
Ureters	6	20
Urinary bladder	4	13.33
Kidney and Ureter	1	3.33
Ureter and urinary bladder	2	6.66

In the renal injuries maximum were grade IV (52.94%) followed by grade III (29.41%) and grade II (17.64%).

In ureteric injuries middle 1/3rd was most commonly involved (50%) followed by lower 1/3rd (33.33%) and upper 1/3rd (16.33%).

The urinary bladder injuries which were 13.33% of total urological injuries 50% were caused by penetrating trauma. Same %age was caused by blunt trauma to the lower abdomen. In 50% of the cases the rupture was intra-peritoneal. In 50% combined intra and extra peritoneal rupture was present.

Renal injuries were associated with 88.23% of major organ injuries. There were 100% associated major organ

injuries in ureteric trauma. Small intestine was the most commonly injured organ (33.33%) followed by large intestine (30%) and liver (16.33%).

DISCUSSION

Penetrating injuries were the dominant cause in this study. Kidney and ureters (100%) and urinary bladder (50%). This is different from other studies in which more than 80% of the injuries were caused by blunt trauma^{3,4,5,6,7}. Reasons may be the fatalistic attitude and liberal use of penetrating weapons in our society.

The most common organ injured was kidney (56.66%) in this study. This is comparable to other studies in which kidney was involved in 67% of the cases^{8,9,10}.

Grade of renal injury	study of NASP ¹¹	study of Sharoon ¹²	This study
I	12.33%	33.81%	-
II	44.35%	16.54%	17.64%
III	30%	41.72%	29.41%
IV	13.3% ³	7.91%	52.94%

The severity of the renal injuries is not comparable to other studies. The grade-IV renal injury (52.94%) in this study is much higher than 13.33% of grade-IV injury in another study (Nash 1995)¹¹. This is because of more cases of penetrating injuries due to firearm in this study.

Ureteral injuries account for 20% of the total urological injuries. This is different from another study (Joseph C)¹² in which ureteric injuries are less than 1% of the total urological injuries. The difference may be due to penetrating injuries being the dominant cause in this study. Though the most common site injured is comparable to other studies¹².

Blunt injuries account for 15% of the cases of bladder rupture in this study. This is in contradiction to another study by (Cass) where 85% of the bladder rupture were due to blunt trauma to lower abdomen¹³. In this study 50% of the bladder rupture were intra-peritoneal. This is

comparable to another study in which intra-peritoneal bladder rupture was present in 56% of the cases¹³. In the same study 37% of bladder rupture was extra peritoneal. Unlike this study in which no case was found with extra-peritoneal bladder rupture. In the same study 7% of the patients had combined intra and extra peritoneal bladder rupture; Unlike this study in which combined bladder rupture was present in 50% of the cases. The cause of this difference being the mechanism of bladder injury i.e. less cases of blunt trauma in the present study.

The incidence of associated major organ injuries is comparable to other studies^{6,7,12,14}.

CONCLUSION

Urological injuries account for 10% of abdomen injuries. The vast majority are penetrating injuries due to firearms. The injuries may better be prevented than treated by strict maintenance of law & order so that the liberal use of weapons is reduced. Injuries to the urological organs should be suspected in all abdominal trauma patients and fully investigated.

REFERENCES

1. Jack MW; **Renal Injuries**; Adult and Paediatric Urology 1987; 421
2. Jack W; MCAinch; **Injuries to the Genitourinary Tract**; Smiths General Urology 14th Edition 1995; 302.
3. Benchekroun A; **Kidney Injuries**; Ann Urol Paris 1997
4. Goff CD; **Management of Renal Trauma**; Am Surg 1998 Mar.64(3);226-30
5. Brown SL; **Are Patients more susceptible to Major Renal Injury From Blunt Trauma**; J Urol 1998; Jul 160 (1); 138-40
6. SR; Payne; **Upper Urinary Tract Trauma**; Hamilton Baileys Emergency Surgery 12th Edition 1995.
7. Paul Peters; Schwartz; **Principles of Surgery** 6th Edition 1994; 1766
8. Noel A Armenaks; **Indications For Radiographic Assessment of Renal Trauma**; Problems of Urology 1994; 245

9. AK Leppanieni; **Diagnosis and treatment with Renal Trauma**; Br.J Urol;1989
10. Carmona Campos; **Evaluation & Treatment of Renal Trauma**; Aetas Urol Esp 1998
11. Nash PA; **Nephrectomy For Traumatic Renal Injuries**; J Urol 1995 Mar; 609-11
12. Joseph C; Prosti Jr; Lirroff; **Ureteral And Renal Pelvic Trauma**; Problem in Urology 1994; 269-78
13. Cass AS; **Diagnostic studies In Bladder Rupture**; Urological Clinics of North America 1989; 267-72
14. Jack W; Mc Aninch; **Injuries to The Genito Urinary Tract**; Smith General Urology 14th Edition 1995; 307.

**Be humble;
to reach the top and stay at top**

Shuja Tahir