



THE INCIDENCE AND PATTERN OF TRAUMATIC BLADDER INJURIES IN A TERTIARY CARE HOSPITAL IN EASTERN JHARKHAND OVER FOUR YEAR PERIOD.

Surgery

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ABSTRACT

Objective: To assess the incidence and pattern of traumatic bladder injury over four years period in a tertiary care hospital in eastern Jharkhand.
Methods: patients presenting to our emergency department with h/o blunt trauma injuries in pelvic region from 2015 to 2019 were identified. Mechanism of injury, hospital course, type of bladder injury and demographics were analyzed.
Results: Of 150 trauma to pelvic region, 90 cases were included for the study. This may include with or without pelvic fracture. Out of 90 cases, 14 were intraperitoneal bladder rupture, 56 were extraperitoneal bladder perforation and 20 cases were of combined nature.
Conclusion: In this study, we found that extraperitoneal bladder rupture is more predominant than intraperitoneal bladder rupture. It affected mainly 20 to 40 age group of population. Road traffic accident remains the main cause of injury.

KEYWORDS

Bladder Trauma, intraperitoneal Bladder Rupture, extraperitoneal Bladder Rupture

Introduction:

Bladder injuries constitute one of the most common urological injuries. It can result from blunt, penetrating or iatrogenic trauma (1,2). A full bladder is more susceptible to injury than an empty one. Early clinical suspicion, prompt radiological studies, prompt intervention and successful management (3) leads to a better outcome of the patients. Management may be conservative or operative, depending on the urinary tract injuries. In our study, we recorded the incidence and pattern of bladder injuries in eastern part of Jharkhand over four years period.

Material and Methods:

From year 2015 to 2019, we identified bladder injury patients, who presented in our emergency department and later admitted for operative or conservative management. In operative patients, intervention for bladder, lower urinary tract injuries and other associated injuries to pelvic region. We also recorded the mechanism of injuries, hospital course and demographics pattern.

Results:

Out of 150 trauma to pelvic region from 2015 to 2019, 90 cases were included for the study.

Table:1 Bladder injury pattern:(n=90)

Intraperitoneal bladder perforation(IPBP)	14(12.6%)
Extraperitoneal bladder perforation(EPBP)	56(50.4%)
Combined	20(18%)

IPBP constitute 12.6%, EPBP 50.4% and combined 18% of total cases included.

Table:2 Intraperitoneal bladder perforation(IPBP):n=14

Bladder rupture	6	
Urethral (membranous)	8	
Pelvic fracture	9	Pubic arch#5 Ilium bone# 4

Table:3 Extraperitoneal bladder perforation(EPBP):n=56

Membranous urethra	40	
PFUDD	16	Pure extraperitoneal with bladder neck—8 not involving bladder neck--8
Pelvic#	17	Pubic arch#12 Ilium bone#5

Table:4 Demographics :Age:n=90

10 to 20	7
21-30	32

31-40	26
41-50	16
51-60	9

Table:5 Sex :n=90 MaleFemale

10-20(7)	5	2
21-30(32)	27	5
31-40(26)	19	8
41-50(16)	12	4
51-60(9)	7	2

Table:6 Mechanism of injury:n=90

RTA	77(69.3%)
Fall	9(8.1%)
Assault	4(3.6%)

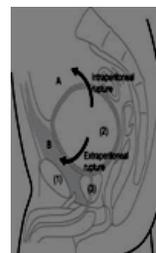
Table:7 Length of stay in Hospital

IPBP	15+/- 1.732
EPBP	12+/-2.849
Combined	14+/-4.462

Photo:1



Photo:2



Discussion:

Incidence of traumatic bladder injuries is one of the common urological injuries (4) worldwide. However, bladder injuries are usually associated with pelvic bone, long bone fractures or abdominal organ injuries. Early clinical diagnosis, incorporated with radiological studies and prompt intervention, results in a better outcome of the

patients(3).American urological association Guidelines on urotrauma,published in 2014 state that" surgeon must performe surgical repair of intraperitoneal bladder rupture in the setting of blunt or perforating external trauma" and that clinician should perform catheter drainage as treatment for patients with uncomplicated extraperitoneal bladder injuries(5).We recorded the incidence,and pattern of traumatic bladder injuires in eastern part of jharkhand over four year period.This study was conducted ina tertiary care hospital.

Intraperitoneal bladder rupture ,is classically described as large horizontal tear in the bladder dome.The mechanism of injury is a sudden large increase in intravesical fluid pressure that overcome the mechanical strenght of the bladder walls.Intraperitoneal bladder rupture occur as the result of a direct blow to a distended urinary bladder.This type of injury is most common in alcoholic and victim of seatbelt or steering wheel trauma.Patient less than 20 years,have Intraperitoneal bladder rupture,more common,due to relative intraabdominal bladder position.(Photo-1)

Traumatic EPBR is usually (89%-100%) associated with pelvic rupture.Earlier ,the mechanism of injury was thought to be direct perforation by bony fragment or disruption of the pelvic girdle.But,now it is believed that pelvic fracture is co-incident(6).Photo-2

EPBR is usually associated with # of the anterior pelvic arch.The classic cystographic finding is contrast extravasated around the base of the bladder,confined to the perivesical space.(7).

In our case n=40 patients had membranous urethra tear,n=16 had pelvic floor urethral damage distraction.Out of 16 pure extra peritoneal involving bladder neck were(n=8) and not involving bladder neck (n=8).

Combination of IPBR and EPBR is observed in penetrating trauma,where the bladder is traversed by a high velocity bullet,impaledby a knife or penetrated by another foreign body.Cystogram will reveal contrast outline the abdomen viscera and perineal space(8).

Bladder injuries occur in about 1.6% of patients with blunt abdominal trauma. Approximately 60% of bladder injuries are extraperitoneal,30% are of intraperitoneal and the remaining 10% are combined.(4).Extraperitoneal bladder perforation accounts for 50-71% of bladder rupture,while 25%-43% are intraperitoneal,and 7%-14% are combined.(9,10).We found that out of 90 cases IPBP 14(12.6%),EPBP 56(50.4%),and combined were 20(18%).Also we found that younger population between 20 to 40 years were more prone for bladder injuries as compared to other age group.

Majority of mechanism of injury were road traffic accident77(69.3%) and male predominance were found. The length of stay was determined by the associated injuries along with bladder injury.Patient with pelvic # stayed more longer than other injuries associated. I our case,for IPBP (15+/- 1.732) days,for EPBP (12+/-2.849) days and for combined it was 14+/-4.462 days.

Conclusion:

In this study,we found that extraperitoneal bladder rupture is more predominant than intraperitoneal bladder rupture.It affect mainly 20 to 40 age group of population.Road traffic accident remain the main cause of injury.

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