Original Communication

Pattern of Pelvic Injuries in Autopsy Cases in a Tertiary Care Hospital -A Cross-Sectional Study

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Abstract

The pelvic cavity contains the vital organs of reproduction i.e. genital organs. Its size and anatomical position make it a vulnerable site for trauma in accidental and non-accidental injuries. Though these organs are protected by the bony pelvis, injuries to these organs ar not uncommon following fracture of pelvis itself. The pelvic cavity injuries are more common in road traffic accidents, fall from height and by any other means where blunt or sharp force applied over the area. Though there are many studies in the literature regarding abdominal trauma, the studies regarding the injuries of pelvic cavity are lacking.

This study was conducted to study the pattern of pelvic injuries seen in autopsy cases over a two year time period in a tertiary care institute in Chennai.

Key Words: Pelvic injuries, blunt trauma abdomen, road accidents.

Introduction:

The abdomino-pelvic cavity contains the vital organs which include liver, spleen, kidney, stomach, intestines etc. Trauma to the abdomino-pelvic region challenges the integrity and even the viability of the individual. It is a major site of trauma in road accidents, due to its size and anatomical position. Even with the improvement in safety measures in vehicles and greater availability of state of art resuscitative measures, the mortality rate in crush injuries to the abdomino-pelvic region has not declined. Pelvic injuries are present along with most of abdominal injuries which are more often than not missed. Majority of deaths of trauma victims have medico-legal implications. It is therefore necessary to establish the cause of death to get compensation from the State or from insurance companies. This study aims to study the pattern of pelvic injuries seen in autopsy cases over a two year time period in a tertiary care institute in Chennai.

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Aims and Objectives

(1) To study the pattern of pelvic injuries

(2) To study the prevalence of pelvic injuries in relation to various epidemiological factors.

(3) To study the relationship between severity of the injuries and survival period.

Material and Methods

A. Selection of Cases

Materials for the present study were collected from the medico legal autopsies, showing pelvic injuries carried out at the mortuary of Madras Medical College, Chennai over a two year period. The total number of cases studied was fifty and relevant statistical data was drawn from these cases.

B. Criteria of Selection of Cases

The criteria used for selection of cases for study are as follows.

1. All the autopsies showing pelvic trauma due to blunt trauma with a known method included in the study.
2. All those cases of blunt pelvic trauma, who

were hospitalized following accident and subsequently succumbed to their injuries were also included in the study.

3. Decomposed bodies and those autopsies where the nature of sustenance of injury was not known were not included in the study.

C. Collection of Data

The relevant information obtained in every case was systematically recorded in a detailed proforma specially prepared by us for the post-mortem evaluation of abdominal trauma victims.

Broadly speaking every case was studied under five headings.

Results & Discussion:

Abdominal and pelvis trauma is one of the important causes of mortality in accidents. Its incidence is fast increasing due to various factors relating to modern civilization. The fast increasing incidence can be explained by lack of proper planning and failure to develop infrastructure to cope with the hazards of modern civilization

Incidence and Problems

The study was done for a period of 2 years. The total number of cases was 30. The factors attributed

1. Increased traffic accidents:
2. Increase in high rise/ level building:
3. Increased industrialization

Majority of the victims of pelvic trauma were due to traffic accidents. In pelvic injuries, it is very crucial to accurately appraise the full extent of injury involving various organs/ fractures. The management and outcome of the case depends on the identification of the organ involved in the trauma cases.

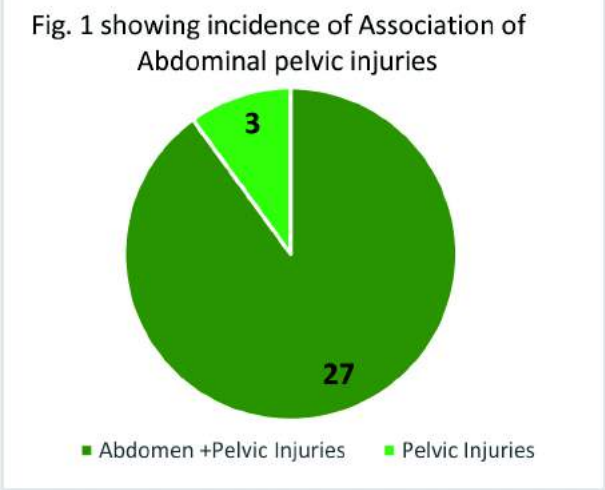
A total of 30 cases of pelvic injuries were observed in the present study. Majority of the cases were in the age group between 21-30 years of age and 31-40 years of the total 30 cases. Majority were males from the lower socio-economic class. The manner of injury was accidental of which road accidents were the majority.

Association of Injuries in Abdominal and Pelvic Trauma Cases

Association of abdominal and pelvic injuries was found in majority of cases (90%). Isolated pelvic injuries were seen in 10% of the cases.

Table I showing incidence of Association of Abdominal pelvic injuries

Type of Injuries	No. of Cases	%
Abdominal + pelvic injuries	27	90
Pelvic Injuries	3	10



Type of Urinary Bladder Injury

Of the 70% (21 cases) of cases in which bladder injury was seen, contusion was seen in 57% (17 cases) and bladder rupture was seen in 13% (4 cases). In the present series, all cases of bladder injuries were due to vehicular accidents. It is in confirmation with the findings of J.J.Fiaherty et al (1968)[1], R.Chandulal (1971)[2], Gordon and Shapiro (1982)[3] and A.K.Sharma (1986)[4]. In the present study majority of cases of bladder injuries were associated with pelvic fractures.

Table II showing incidence of Urinary bladder injury

Organ	Contusion		Rupture	
	Cases	%	Cases	%
Urinary Bladder	17	57	4	13

Similar findings have been observed by J.J.Flaherty et al (1968)[1].

Types of Pelvic Fracture

Among the 30 cases of pelvic injuries, fracture was seen in all cases (100%). Majority of the fractures were of type C (76.67%). This was followed by type A (16.67%). Type B constituted (6.67%) of the cases. In the present study, pelvic bone fractures were observed in all (100%) cases, of which majority of the cases were as a result of vehicular accidents. Similar high incidence of pelvic fractures has also been reported by D. Bergvist et al (1983)[5], A.K. Sharma (1986)[4] and K.P. Edwards (1993)[6]. In the present series, commonest combination of pelvic bone fractures observed was multiple fractures of both sides pelvis plus fracture separation of public symphysis plus fracture dislocation of sacro-iliac joint.

Table III showing incidence of pelvic Fractures

Type A		Type B		Type C	
No. of cases	%	No. of cases	%	No. of cases	%
2	7	2	7	23	7

Causes of Death

Table IV showing causes of death

Causes of Death	No. of cases	%
Shock and Haemorrhage	23	76
Septicaemia	7	24

In the causes of death following abdomino–pelvic trauma, the most common causes of death was shock and haemorrhage (as a result of massive intra-abdominal bleeding) due to multiple injuries in (76%) of cases. Septicaemia was noticed as cause of death in (24%) of cases.

Conclusion:

The present study was undertaken to focus light upon the pattern of pelvic injuries in due to blunt trauma in relation to various factors, a total number of 30 cases were studied over a period of two years. The results of the present study are summarized as follows:

1. The age group of 21-30 years and 31-40 years were most commonly involved in trauma cases and majority of the victims were male.
2. Urinary bladder was injured in 70% of cases. The most common pattern of urinary b ladder injury was contusion of urinary bladder. That constituted 57% of cases.
3. Pelvic bone fractures were observed in 100% of cases. Majority of the pelvic fracture were of type C which was in 76.67% of cases.
4. The main cause of death was haemorrhagic shock due to multiple injuries (76% of cases), this was followed by septicaemia (24%).

At the end it may be said that all abdominal and pelvic injuries constitute a potential factor in increasingly the amount of morbidity and mortality and therefore proper attention towards their accurate diagnosis and satisfactory management is mandatory. A multidisciplinary approach is required for treating trauma victims so that more severe injuries are diagnosed early and managed appropriately.

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