



## RESEARCH ARTICLE

# PENETRATING INJURY BY IRON PIECE TO INGUINAL REGION AND RETROPERITONEUM-A CASE REPORT

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### ABSTRACT

A penetrating injury is caused by sharp-pointed objects like wooden piece, iron bar, knives, glass pieces, blade, spears and gun shots etc. These can cause injuries to solid organs and hollow viscera and major vessels of the body. This condition can lead to peritonitis, shock and even death if major vessels were injured. We report a case of penetrating injury to right side of thigh by sharp piece of iron and foreign body lying in retro-peritoneum sparing major vessels.

### INTRODUCTION

Trauma is the most common cause of death in the first four decades of life and is the third most common cause of death regardless of age<sup>1,2</sup>. And it is a major public health problem in any country regardless of socio-economic level<sup>3</sup>. Trauma is divided into 2 types blunt and penetrating and penetrating trauma is more common in metro cities and blunt type in rural areas. Abdominal penetrating trauma includes sharp objects damage (stab wound) and gunshot damage (gunshot wound)<sup>4</sup>. It is more common in men than women. The management of a patient with a penetrating injury can always be challenging for every surgeon. The severity of the injury varies depending on the body parts involved, the type of the penetrating object and the amount of energy transmitted to the tissues. The tip of a foreign body plays a vital role in a penetrating injury as objects with sharper ends penetrate the skin more readily and cause injuries more severely<sup>5</sup>. These can cause injuries to solid organs like spleen, liver, lung, hollow viscera like bowel, major vessels like aorta, inferior vena cava and iliac vessels<sup>5,6</sup>. Diagnosis of penetrating trauma is based on history, general physical examination and radiological investigation, Local Wound Exploration(LWE), Diagnostic Peritoneal lavage (DPL).

According to Advanced Trauma Life Support (ATLS), a patient with trauma, should have a CT scan if he/she is haemodynamically stable<sup>6</sup>.

### CASE REPORT

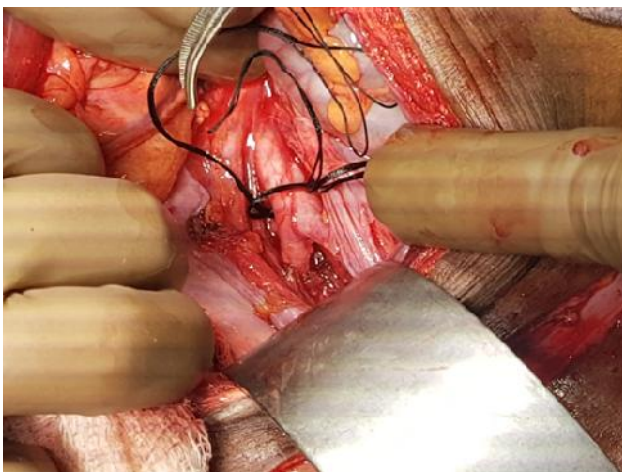
39 yrs old male presented to emergency surgery department with penetrating injury to the right side of inguinal region. The patient was in a stable condition, BP 110/70 mm of hg, pulse rate of 90bpm, respiratory rate 18 times per minute, oxygen saturation of 97% on room air. On GPE, there was visible lump of size 5\*4 cm, non pulsatile, firm in consistency in left inguinal region. There was penetrating entry wound of size 2\*2 cm in upper thigh right side. There was a cut lacerated wound of size 3\*2 cm present over prepuccial region. (fig.1). Abdomen was soft, non tender, no guarding, rigidity and normal bowel sound. Chest was within normal limit. Lab. investigation was done and was remarkable. Chest X-ray was normal. USG FAST was negative. USG Doppler Arterial of left lower limb shows monophasic flow in posterior tibial artery (PTA) and no flow in anterior tibial artery (ATA). CECT ABDOMEN and ANGIO shows herniation of gut loops with foreign body lying adjacent to left external iliac artery. Patient underwent emergency Exploratory Laparotomy with retrieval of foreign body from retroperitoneum with circumcission with corrugated drain placement at scrotum (Fig.2,3).

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**Fig. 1. Penetrating injury to right upper thigh**



**Fig.2. exploratory laparotomy sparing external iliac artery**



**Fig.3. Circumcision with corrugated drain placement**

Post op USG Doppler shows normal flow in left PTA and ATA. Drain was removed on 3<sup>rd</sup> post op. day. Sutures were removed on 10<sup>th</sup> post op. day.

## DISCUSSION

Trauma is the most common cause of death in the first four decades of life and is the third most common cause of death regardless of age<sup>1,2</sup>. And it is a major public health problem in any country regardless of socio-economic status<sup>3</sup>. Penetrating trauma has a high mortality and morbidity rate so it requires an early initial assessment and appropriate management. Management of penetrating trauma has based on the mechanism and location of the injury, hemodynamic stability, associated related injuries, and hospital resources<sup>5,6</sup>. Clinical features of penetrating trauma may indicate solid organ injury, hollow organ injury, vascular injury, with clinical features such as hemodynamic instability shock or peritonitis where the clinical condition can be differ depending on the injured body part and the shape and size of the foreign body<sup>5,7</sup>.

Diagnosis of penetrating trauma is based on history, general physical examination and investigation (radiological examination, Local Wound Exploration, Diagnostic Peritoneal lavage (DPL). Radiological include: (1) Chest X-ray (to rule out pneumothorax and hemothorax), Abdominal X-ray erect and supine (may show presence of free air which can suggest perforation of hollow viscera), (2) USG FAST to assess any free fluid and solid organ injury, (3) CECT Abdomen and Pelvis scan-has advantage of assessing grade of the injured organ, major vessels and retroperitoneal area. The management of penetrating trauma include early resuscitation and surgical repair of the involved organ and foreign body extraction. There is a recommendation that the foreign body not to be manipulated first since it can create tamponade effects, and cause massive haemorrhage. Although the foreign body can be shortened to facilitate transportation or determine the position of the entry and exist. In this case, generalized peritonitis and hemodynamic instability were not found. The local wound exploration on the wound was not taken into consideration as laparotomy was performed for diagnostic as well as therapeutic management in the act of foreign body extraction. Midline Laparotomy is recommended as a standard for evaluating the peritoneal cavity in the presence of hypotension, peritonitis or hollow visceral or solid organ injury. In our case patient underwent exploratory laparotomy, foreign body extraction, saline irrigation and corrugated drain placement. The wound was closed in layer<sup>6,8</sup>.

## CONCLUSION

The most common cause of abdominal penetrating trauma was related to knife damage and spleen was the commonly damaged organ. Early assessment and management should be done in penetrating trauma. Early resuscitation, investigation, surgical intervention are important in early recovery of the patient.

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