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HANDLEBAR HERNIA WITH SPLENIC LACERATION

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Abstract : BACKGROUND Handlebar hernia is a rare, traumatic, abdominal wall hernia caused by high-velocity direct trauma. A large proportion of reported cases are in children. Although, Traumatic abdominal wall hernia was first described by Selby a century ago, fewer than 100 cases have been reported in English literature. CASE PRESENTATION A 18 year old male patient came to emergency department with HO motor cycle accident with patterned abrasion of handlebar over his epigastric region. CT revealed traumatic epigastric hernia and Grade iv splenic injury. Patient was taken for emergency laparotomy. CONCLUSION Concomitant intrabdominal visceral injuries should be suspected in handlebar injuries involving supraumbilical region. Immediate exploration and primary repair of defect is generally accepted as a more favourable choice in the treatment of traumatic abdominal wall hernias.

Keyword :HANDLEBAR HANDLEBAR HERNIA TRAUMATIC HERNIA

ABSTRACT

BACKGROUND : Handlebar hernia is a rare, traumatic, abdominal wall hernia caused by high-velocity direct trauma. A large proportion of reported cases are in children. Although, Traumatic abdominal wall hernia was first described by Selby a century ago, fewer than 100 cases have been reported in English literature.[1]

CASE PRESENTATION : A 18 year old male patient came to emergency department with H/O motor cycle accident with patterned abrasion of handlebar over his epigastric region [FIG 1]. CT revealed traumatic epigastric hernia and Grade iv splenic injury[FIG 2]. Patient was taken for emergency laparotomy.

CONCLUSION : Concomitant intrabdominal visceral injuries should be suspected in handlebar injuries involving supraumbilical region [2]. Immediate exploration and primary repair of defect is generally accepted as a more favourable choice in the treatment of traumatic abdominal wall hernias. [2,3]

KEY WORDS : HANDLEBAR ; HANDLEBAR HERNIA ; TRAUMATIC HERNIA; TRAUMATIC ABDOMINAL WALL HERNIA ;

INTRODUCTION : Abdominal wall hernias caused by direct trauma from handlebar-like objects, are a rare occurrence. Traumatic abdominal wall hernias are produced by direct blunt trauma from an object with insufficient force to penetrate the skin yet able to disrupt deeper tissues of muscles and fascia. This is possible because the skin is more elastic than the rest of the layers.[4] The resulting defect was termed a handlebar hernia by Dimyan, et al., in 1980.[5] Only three to five cases of handlebar hernia have been reported from India.[6]

CASE REPORT : A 18 year old boy presented with road traffic accident involving motorcycle. He was conscious and oriented with normal pulse rate and blood pressure at presentation. There was a patterned abrasion of handlebar in his epigastric region with a 6cm x 6cm abdominal wall defect palpable beneath the abrasion [FIG 1].

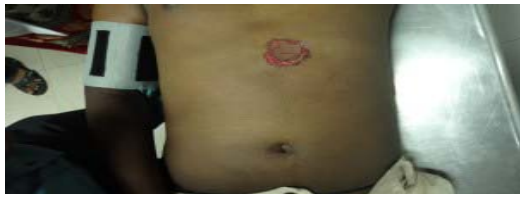

FIG 1 - PATTERNED ABRASION

Cough impulse was positive[FIG 2].

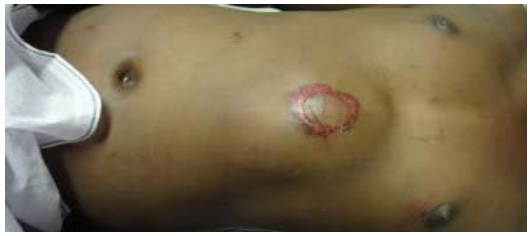

FIG 2 - COUGH IMPULSE

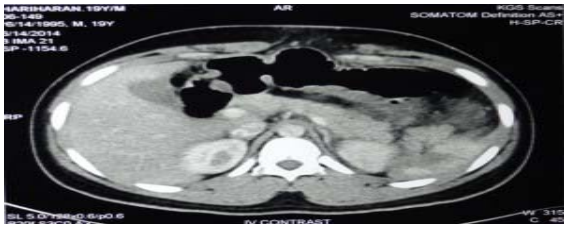

FIG 3 - CT : EPIGASTRIC HERNIA

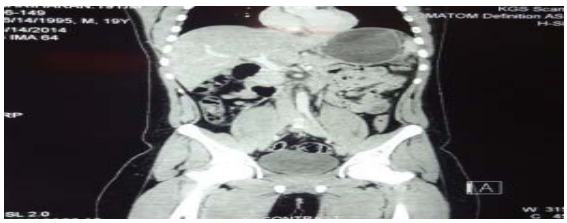

FIG 4 - CT : PERI SPLENIC HEMATOMA

As the patient went for tachycardia and hypotension he was taken for urgent laparotomy. Laparotomy revealed 6cm x 6cm defect in Rectus in epigastric region on left side with omentum coming out through the defect [FIG 5].

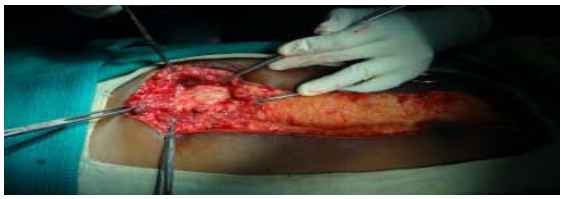

FIG 5 - DEFECT IN RECTUS

There was about 500 ml of frank blood in peritoneal cavity. A 3cm x 3cm laceration was seen in superior border of spleen. A 5cm x 5cm large hematoma was seen involving hilum of spleen [FIG 6].

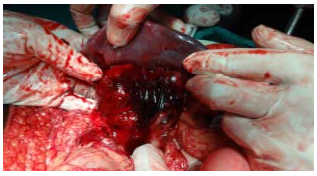

FIG 6 - SPLENIC HEMATOMA

A 2cm x 2cm hematoma was present in fundus of stomach along with a 2cm x 0.5cm serosal tear involving posterior aspect of stomach. Splenectomy along with primary repair of hernia was done [FIG 7]. Post operatively patient recovered well.

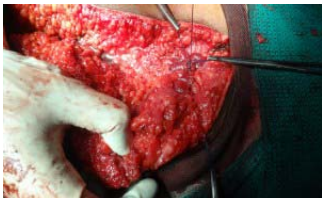

FIG 7 - PRIMARY REPAIR

DISCUSSION : There are three major types of traumatic abdominal wall hernias based on the mechanism of injury and the size of the defect. Type I abdominal wall hernia involves a small defect caused by blunt trauma. Type II hernia is a larger defect developed during the high-energy transfer events such as motor vehicle crash or fall from a height. Type III hernias are those defects that involves intraabdominal bowel herniation that has been described for deceleration injuries. Handlebar hernias are often under type I abdominal wall hernias and associated intraabdominal injuries are rare. [7] The abdominal wall hernia is usually found at weak anatomical locations such as the region encompassing the lower lateral abdomen to the rectus sheath. This explains that in the majority of the reported cases of handlebar hernia, the abdominal wall defect was in the lower abdomen.[7] Traumatic hernia involving upper quadrant of the abdomen is rare. The overall incidence of associated intra-abdominal injuries in handlebar hernia has been reported to be as high as 30%. [8] The most commonly reported injuries were mesenteric and serosal tears.[7] Damschen *et al*. found that 17 of 28 patients had no associated injury in their review. The other 11 patients had associated injuries, including five in the small intestine (45.5%), three in the colon (27.3%), two in the liver (18.2%), and one in the kidney (9.1%).[6] Splenic injury associated with handle bar injuries is rare. Prada Arias M *et al.* in their review of literature found 31 cases from a total of 24 studies over a period of 35 years. Patients were aged 5 to 15 years with peak incidence at 7 to 9 years. Most (93%) were male. Site of hernia was predominantly lower abdominal (77%), with most of these on the right (75%). Overlying skin contusion or handlebar imprint was present in 45%. Associated intraabdominal injury was uncommon (5/31). There was 1 case of traumatic abdominal wall hernia with associated splenic and renal injury[9].

The diagnosis is usually made on the basis of history and physical examination. However, ultrasonography and CT scans may be helpful in difficult cases. In rare cases, the hernia would not be identified until exploratory laparoscopy or laparotomy was performed for the associated injuries.[7] Immediate exploration and repair, however, has generally been accepted as a more favourable choice in the treatment of traumatic abdominal wall hernias.[2,3] Moreover, early repair through midline exploration has been advocated even in the absence of intra-abdominal injuries. [7] There are some reports in which mesh repairs have given good results.[10] Although no prosthetic materials are required for small defects, it may be safer to apply mesh in large hernias, even in cases in which primary closure may be done without it. However, primary mesh repair should be considered only in cases with no hollow viscus injuries, relatively large defects, and the presence of tension for direct closure.[11]

CONCLUSION :

Handlebar hernia in adults is rare. Imaging, with the use of CT scan or ultrasound will confirm the diagnosis as well as identify any associated injuries. The management plan usually requires surgical exploration and repair of the defect. The prognosis is favourable presuming that there is no significant underlying injury.

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