

Handlebar Hernias: Case Reports of Rare Traumatic Abdominal Wall Hernias

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ABSTRACT

Abdominal wall hernias caused by direct trauma from handlebar-like objects, are therefore called handlebar hernias, are a rare occurrence.

There have been few reports in the literature of traumatic trans-rectus herniation [1]. The presentation can vary substantially and the diagnosis is difficult.

Key Words: Hernia, Abdominal wall, Trauma

CASE 1

A five year old boy presented with a history of lower abdominal swelling after being hit by a bicycle handle bar four days back. The case was referred by a local paediatrician on suspicion of a haematoma of the abdominal wall. He was conscious and haemodynamically stable. The examination of his head, neck, chest, back and limbs was unremarkable. There was ecchymosis with a tender bulge over the left iliac fossa, but otherwise the abdomen was normal [Table/Fig-1]. The swelling was tender and partially reducible. The laboratory and radiological investigations were within the normal limits. Ultrasound revealed a herniation of the small bowel loops through the abdominal wall defect, which measured 2cm and the rest of the viscera was normal [Table/Fig-2]. A local exploration was performed incorporating the site of the injury. An irregular defect of 2 cm size was found involving all the layers of the abdominal wall muscles in the left iliac fossa with intact skin and subcutaneous tissue. A segment of the jejunal loop had herniated which was reduced and the defect was approximated with simple tissue repair. The patient's recovery was uneventful and he had no recurrence after 1 year of follow-up.

CASE 2

A 22 year old patient sustained a blunt injury in the abdomen which was caused by a handle bar while cycling, following which he



[Table/Fig-1]: Paediatric traumatic hernia with ecchymosis



[Table/Fig-2]: USG showing abdominal wall defect

developed a swelling on the right side of the lower abdomen. Incision and drainage was done by a local surgeon, while suspecting that it was a haematoma. Two weeks later, the patient presented with a persistent swelling above the operated site. On examination, the patient was found to be haemodynamically stable and the swelling measured 3 × 3 cm with a linear scar below it, which was positive for a cough impulse [Table/Fig-3]. USG showed an abdominal wall defect of size 1cm with abdominal wall hernia. After routine investigations, a local exploration at the site of the swelling was done. A defect of 1.5cm at the junction of the semicircular line and the semilunar lines and the omentum was present as content [Table/Fig-4]. Anatomical repair was done and the follow up till date is unremarkable.

DISCUSSION

Traumatic abdominal wall hernias remain a rarely reported event, despite the high prevalence of blunt abdominal trauma. A review of English literature on this subject showed approximately 50 reported cases since the first report in 1906.² They are produced by direct blunt trauma from an object that has insufficient force to penetrate the skin but is able to disrupt the deeper tissues of the muscles and the fascia. This is possible because the skin is more elastic than the rest of the layers.



[Table/Fig-3]: Hernia with scar below it



[Table/Fig-4]: Intraoperative finding of abdominal wall defect

There are three major types of traumatic abdominal wall hernias which have been identified based on the mechanism of the injury and the size of the defect [3]. Type I abdominal wall hernia involves a small defect caused by blunt trauma. Type II hernia is a larger defect which develops during high-energy transfer events such as a motor vehicle crash or fall from a height. Type III hernias are those defects that involve the intraabdominal bowel herniation that has been described for deceleration injuries. Abdominal wall hernias are usually found at weak anatomical locations such as the region which encompasses the lower lateral abdomen to

the rectus sheath. This explains that in a majority of the reported cases of handlebar hernias, including our case the abdominal wall defect was in the lower abdomen. A majority of the cases which have been described as handlebar hernias were caused by low-energy mechanisms such as being hit by bicycle or motorcycle handlebars [4].

The diagnosis is usually made on the basis of the history and the physical examination. Handlebar hernias can be mistaken for haematomas [5]. However, ultrasonography and CT scans may be helpful in diagnosing the difficult cases. In our cases, CT scan was not done because of the delayed presentation in these cases. A repair can be performed with primary closure if the tissue allows or with prosthetic material if the defect is too large [6]. Debate exists regarding the local wound exploration vs. midline exploratory laparotomy to rule out the intraabdominal injuries [7]. The associated intraabdominal injuries would necessitate exploratory laparotomy or extensive local incision. If all the indicators of intraabdominal injury are negative, local wound exploration provides the best anatomical layered repair with subsequent minimal residual defect and improved long-term cosmesis. Delayed herniations, as a result of the weakening of the abdominal wall from a haematoma or wound infection have also been reported.

In conclusion, this study highlights the need for a high index of suspicion for a traumatic abdominal wall herniation in patients who have sustained low velocity blunt abdominal trauma and it also illustrates how a rectus sheath haematoma may mimic a traumatic abdominal wall herniation.

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