



Case report of traumatic interparietal spigelian hernia in a toddler: an unusual presentation.

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Abstract

Traumatic interparietal hernias are rare injuries of the abdominal wall muscle planes following blunt trauma, with an incidence of about 0.1% in children. When they occur through the spigelian fascia, they form a traumatic interparietal spigelian hernia (TISH). The junction of the semilunar and arcuate lines is the weakest part of the spigelian fascia and accounts for most spigelian hernias. We report a 19-month-old boy who developed an anterolateral thoracoabdominal swelling and respiratory distress after a pedestrian–vehicle collision. Examination showed asymmetry of the chest wall with a pyriform swelling from the left hypochondrium to the left hemithorax. Chest radiograph demonstrated hyperlucent bowel patterns in the left anterolateral chest wall with intact diaphragmatic domes. After resuscitation, he underwent laparotomy, which revealed a 3 cm defect at the linea semilunaris with transverse colon herniation. The defect was repaired primarily. Recovery was uneventful. Early recognition of TISH is vital for timely intervention. Aortic aneurysms (VAAs) are rare vascular lesions associated with a substantial risk of rupture and high mortality. Splenic artery aneurysms (SAAs) are the most common and best studied, with relatively well-established risk factors and management strategies. In contrast, uncommon VAAs arising from the hepatic, celiac, superior mesenteric, gastroduodenal, pancreaticoduodenal, gastroepiploic, gastric, jejunal, ileal, colic, and inferior mesenteric arteries are exceedingly rare, and their natural history and rupture predictors remain poorly defined. Rupture has been reported at small diameters, challenging size-based thresholds derived largely from SAA data.

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Introduction

Traumatic-Interparietal-Spigelian-Hernia (TISH) is a rare type of traumatic abdominal wall hernia, where the hernia sac and its contents protrude through a defect along the linea semilunaris and dissect between the planes of the anterior abdominal wall^{1,2}. It is exceedingly rare amongst children, with an incidence of 0.1%¹. Given the clinical ambiguity and rarity of this condition, it

can be difficult to diagnose preoperatively². Diagnosis is aided by clinical evaluation and radiological investigations such as X-ray and CT scan. The role of diagnostic laparoscopy is also of immense value in its evaluation and management³. We report a rare case of TISH following a blunt abdominal injury in a toddler.



Case Report

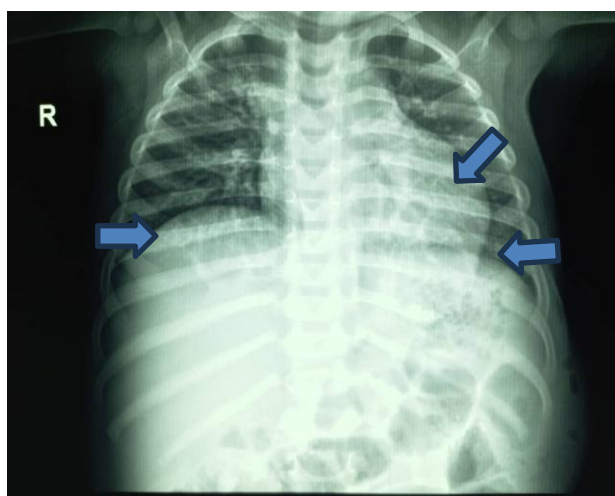
A 19 month old male toddler who presented following a pedestrian-motor-vehicular accident an hour earlier, with complaints of respiratory distress and an associated anterolateral thoracoabdominal swelling. On examination, he was tachypneic, with a respiratory rate of 30 breaths per minute and a heart rate of 140 beats per minute. His chest wall was asymmetrical with a pyriform swelling, which was soft, tender, and reducible, extending from the left hypochondrial region to the left hemithorax (Figure 1).

Figure 1: Clinical picture at presentation



We made an assessment of blunt thoracoabdominal injury with suspected diaphragmatic hernia; however, the chest radiograph revealed hyperlucent bowel patterns in the left anterolateral chest wall with intact domes of the diaphragm (Figure 2).

Figure 2: Chest X-ray done at presentation

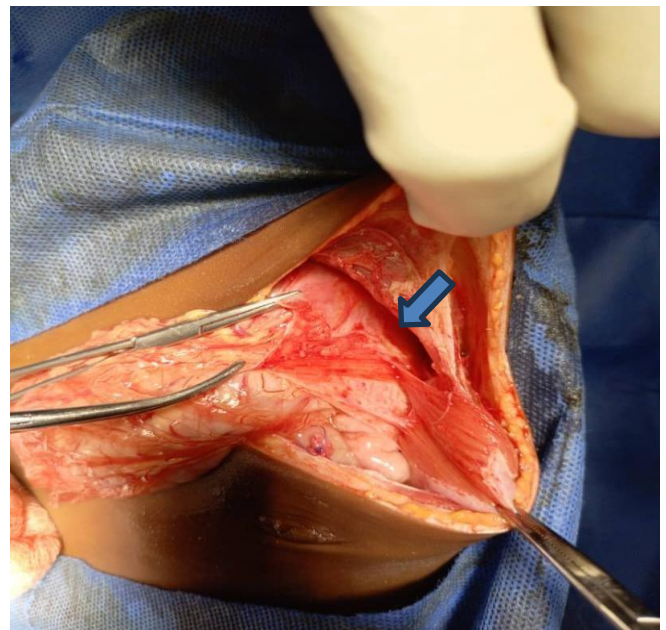


A diagnostic laparoscopy could not be done due to logistics delay and the urgent nature of the surgery. Following resuscitation, he had an exploratory laparotomy, with intra-operative findings of a 3cm defect in the anterior abdominal wall around the Linea semilunaris, through the transversus abdominis, internal oblique, and external-oblique muscles (Figure 3).

Findings revealed herniation of the transverse colon through the defect, tracking through the subcutaneous plane to the left subcostal region.

The defects were repaired in layers using interrupted nylon-0 suture to close the fascia defect and continuous vicryl-3/0 suture for the muscles, as well as subcuticular skin closure. The post-operative period was uneventful, and he was discharged to be followed up in the clinic.

Figure 3: Intraoperative finding of a defect in the anterior abdominal wall around the apex of the Linea semilunaris



Discussion

This report highlights the challenges in the diagnosis and management of TISH. Although the chest X-ray aided in identifying the abnormal location of the bowel, laparoscopy would have aided in confirming the diagnosis and repair of the defect. However, in low-resource-settings like ours, laparoscopic surgery is not readily accessible, hence we had to perform an exploratory-laparotomy. The management approach of TISH depends on its severity; asymptomatic patients with isolated TISH can be successfully managed non-operatively^{4,5}. However, if the hernia is



symptomatic, surgical repair is necessary^{4,5}. Furthermore, depending on the size of the hernia defect and degree of surgical field contamination, primary or mesh repair can be done^{5,6}.

Small defects, especially in children, are closed primarily, while large defects in adults can be closed with the use of mesh⁵.

TISH is a rare and complex type of Traumatic abdominal wall hernia that requires careful diagnostic evaluation and appropriate surgical intervention. Awareness of this condition and its potential presentation can aid in early diagnosis and appropriate treatment.

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References

1. Ozawa H, Hara A, Hayashi K, et al. Two cases of interparietal inguinal hernias undergoing laparoscopic treatment: a case series. *J Surg Case Rep* 2023;2023(2):rjad051.
2. Kangabam B. Traumatic spigelian hernia following blunt abdominal trauma. *Cureus* 2023;15(2).
3. Misiakos EP, Patapis P, Zavras N, Tzanetis P, Machairas A. Current trends in laparoscopic ventral hernia repair. *JLS* 2015;19(3):e2015-00048.
4. Coleman JJ, Fitz EK, Zarzaur BL, Steenburg SD, Brewer BL, Reed RL, et al. Traumatic abdominal wall hernias: location matters. *J Trauma Acute Care Surg* 2016;80(3):390–7.
5. Yee AM, Jazayeri SB, Mac O, Arabian S, Neeki M, Neeki MM. Management of traumatic spigelian hernia: a case report and literature review. *Cureus* 2019;11(11).
6. Aravinda PS, Saha S, Saurabh G, Andley M, Kumar A. Traumatic spigelian hernia: a rare clinical scenario. *J Clin Diagn Res* 2014;8(5):ND01.