

DELAYED PRESENTATION OF POST TRAUMATIC DIAPHRAGMATIC RUPTURE IN A 9 YEAR-OLD-BOY: A DISTRICT HOSPITAL EXPERIENCE



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Introduction:

Diaphragmatic rupture occurs in less than 5% of traumatic injuries and may present in the acute or delayed setting¹. Commonly caused by penetrating or blunt thoraco-abdominal trauma, this injury may cause significant morbidity and mortality. We report a case of delayed traumatic diaphragmatic rupture in the paediatric population to expand current literature.

Case Report:

A 9-year-old boy presented with left hypochondriac pain, vomiting and dyspnoea following blunt abdominal trauma from striking a motorcycle handle during a road traffic accident. Clinical examination revealed reduced breath sounds over the left hemithorax and left hypochondriac tenderness with bruising. Computed tomography confirmed a ruptured left hemidiaphragm with transthoracic visceral herniation (figure 1). The child was stabilized and taken for exploratory laparotomy. Intra-operatively, a 15 cm defect was seen over the posterolateral left hemidiaphragm causing herniation of the stomach, pancreas, spleen, transverse colon and omentum (figure 2). The herniated viscera were reduced and concomitant injuries include a shattered spleen, pancreatic body and tail necrosis, fundal and prepyloric gastric perforations as well as serosal tear over the transverse colon. Splenectomy, distal pancreatectomy, and primary repair of the stomach and transverse colon were performed. The diaphragmatic defect was repaired with a single layer of interrupted figure of eight non-absorbable sutures. The child's post-operative period was complicated with Klebsiella bacteraemia but was discharged well following antibiotic therapy.

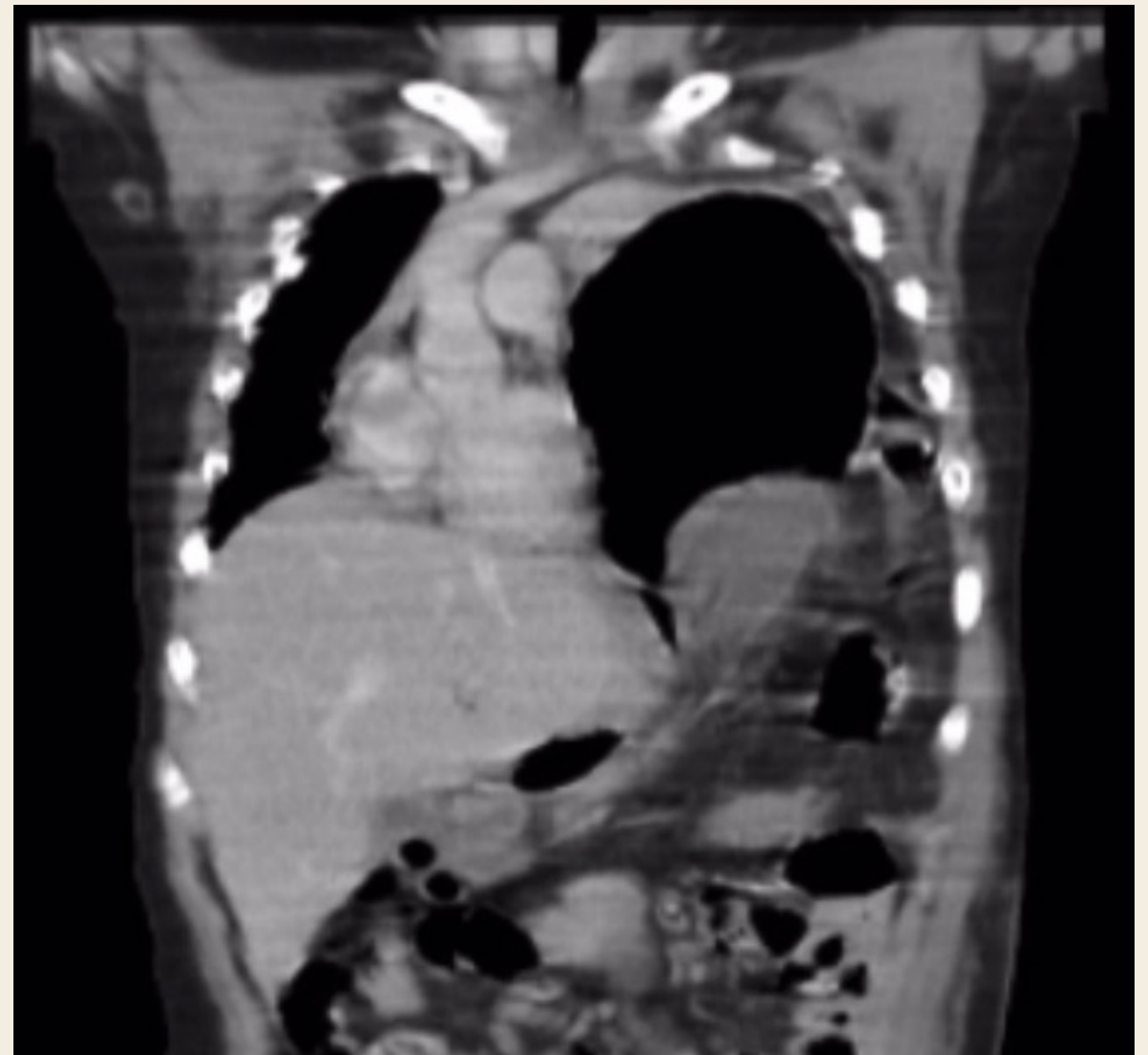


Figure 1. Computed tomography showing mediastinal displacement and transdiaphragmatic abdominal visceral herniation.

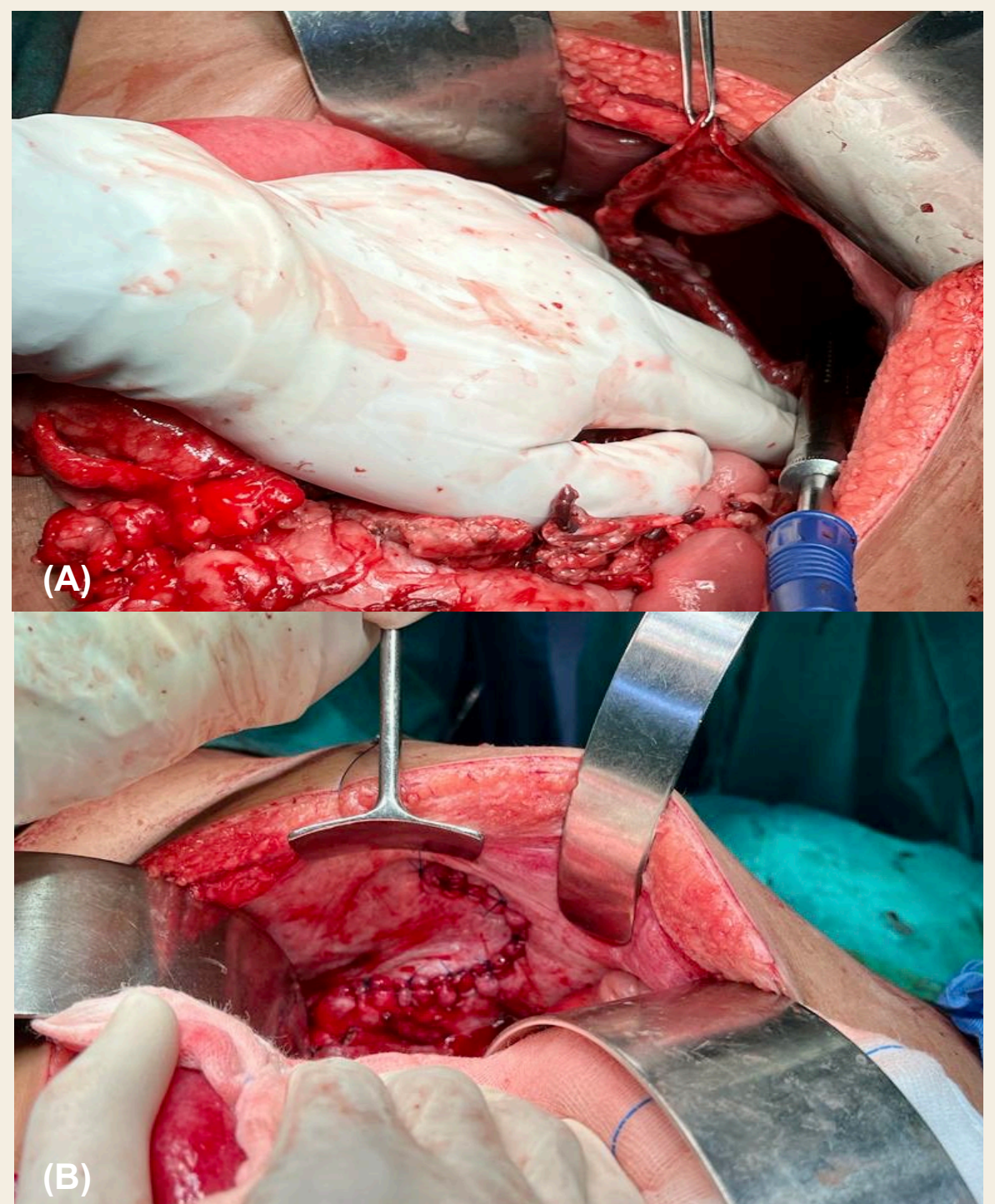


Figure 2. Traumatic diaphragmatic injury. (A) 15 cm posterolateral diaphragm defect. (B) Diaphragmatic injury repaired with non-absorbable sutures.

Discussion:

Blunt abdominal trauma increases the transdiaphragmatic pressure gradient and may shear and avulse the stretched diaphragm². This may lead to herniation of abdominal viscera into the thorax, displacing the mediastinum and compromising ventilation¹. Surgical repair may be done via thoracotomy, laparotomy or both depending on concomitant injuries. Laparoscopic and thoracoscopic approaches have also been successfully reported but is limited to smaller lesions^{3,4}. Mesh repair have also been reported to reduce the risk of recurring hernias².

Conclusion:

We share a case of a huge diaphragmatic rupture with transthoracic herniation of abdominal viscera that was successfully repaired in the district hospital setting. A high index of suspicion is needed to ensure that this injury is not missed as further delay in operative treatment may lead to high mortality rates.

Reference:

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4. Athanassiadi K, Kalavrouziotis G, Athanassiou M, Vernikos P, Skrekas G, et al. Blunt diaphragmatic rupture. *Eur J Cardiothorac Surg.* 1999; 15(4): 469-74.