

Two cases of the rare para-hiatal hernia: An intra-operative finding to be aware

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Background and Aim

Parahiatal hernias are a rare type of diaphragmatic hernia where a defect is located within the fibres of the crus lateral to the oesophageal hiatus. The hernia is distinct from the hiatus within the muscle fibres of the crus. The finding is often diagnosed intraoperatively and as a result the surgeon should be aware of this rare type of hernia and methods of repair. Parahiatal hernias can be either acquired (trauma or previous surgery to the diaphragm or oesophageal hiatus) or primary, where no history of surgery or trauma is present. There is an increased risk of incarceration associated with these hernias which commonly contain stomach, transverse colon and omentum. Laparoscopic repair is the most common surgical approach to treatment with either suture repair or the use of mesh, however the placement of tacks / mesh should be used with caution given the proximity of the oesophagus and pericardium and associated complications of erosion or pericardial effusion. This rare type of hernia was recently described by *Junsheng et al.* (2020) in the ANZ Journal of Surgery - where 27 reported cases were identified over the last 30 years¹. Here, we contribute two cases of para-hiatal hernia to the literature. One primary and one acquired. Both patients proceeded to laparoscopic surgery for presumed hiatus hernia. Intraoperative findings were of a defect lateral to the left crus, within the muscle fibres. Repair technique relied on the principles of tension free repair and reflected the quality of the tissues. Providing post-repair laparoscopic images and discussing the presentation and management of this rare intraoperative finding.

Case 1 – primary parahiatal hernia

A 52 year old male presented to the emergency department on two occasions during the COVID level 4 lockdown with symptoms of chest and epigastric pain and was found to have a hiatus hernia on CXR. He had previously been admitted to hospital for pneumonia but had no other medical or surgical history including no history of trauma. In the emergency department his symptoms resolved and he was referred to outpatient clinic where a CT chest was performed suggesting a moderate hiatus hernia.

The patient proceeded to elective surgery in the private setting where a left crural defect was found containing stomach and omentum (see Image 2). A cruroplasty was performed with suture repair. A Nissen fundoplication was also performed as the patient had described symptoms of oesophageal reflux (Image 3).

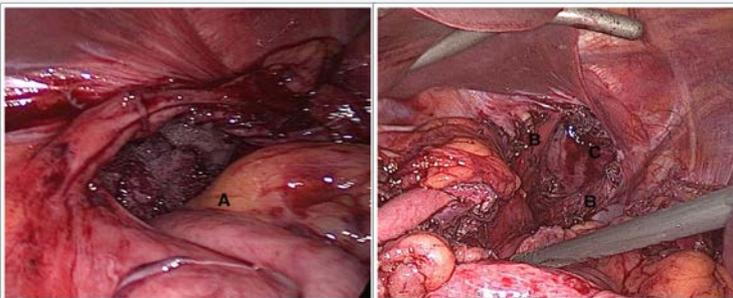


Image 1: Contents passing into hernia
(A) Gastric fundus and Omentum

Image 2: Post reduction image
(B) Separated fibres of left crus lateral and distinct from oesophageal hiatus.
(C) Hernia defect

Image 3: Post repair
(D) Suture repair / hernioplasty with 2.0 ethibond suture.

Case 2 – secondary / acquired parahiatal hernia

A 30 year old female presented for elective surgery for presumed epigastric hernia. She had a significant history of a previous trauma in 2002 (MVA) and subsequent acquired sliding hiatus hernia repaired with Nissen fundoplication via thoracotomy in 2011. In 2014 she developed recurrent epigastric pain and symptoms of oesophageal reflux. A pre-operative CT demonstrated a large recurrent hiatus hernia with stomach and a loop of transverse colon in the chest. However, intraoperative findings were of both a hiatus hernia containing stomach and a concurrent yet distinct para-hiatal hernia containing both transverse colon and omentum. This was repaired with both sutures and mesh (see Image 4). The patient was advised that further pregnancy would likely compromise the repair, however in 2016 she became pregnant with twins and during pregnancy developed symptoms suggestive of hernia recurrence. The twins were delivered via emergency caesarean section at 32 weeks due to severe epigastric pain from incarceration of stomach within the hernia. Her symptoms resolved with decompression via nasogastric tube and delivery of the twins. The patient has an ongoing complex retrocardiac paraoesophageal hernia confirmed on CT and endoscopy with the wrap intact. She has had multiple presentations to hospital requiring decompression via nasogastric tube and is awaiting elective surgical repair.

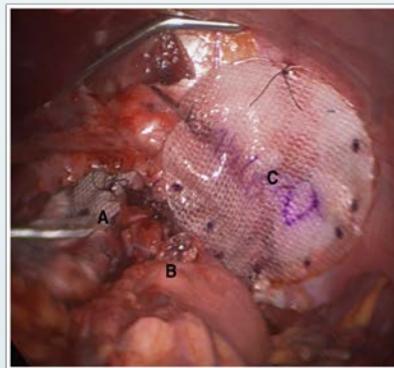


Image 4. Post-repair laparoscopic photograph and. surgical repair technique:

(A) A posterior cruroplasty was performed using interrupted ethibond sutures, a 360 degree wrap (B) was secured to the oesophagus. Paritex mesh was placed in a U-shape behind the oesophageal hiatus not in contact with the oesophagus. (C) The para-hiatal defect in the left crura was closed with an interrupted V-lock suture. This was secured with interrupted vicryl and absorbatack. A 9cm round paritex mesh was used to secure the left crural defect.

Conclusions

Parahiatal hernia may be either congenital or acquired and have a high risk of organ incarceration¹. The approach to surgical repair depends on the quality of the tissues and relies on the principle of tension free closure. There is no current literature reporting recurrence or outcomes following mesh or direct suture repair. The risks associated with mesh placement and fixation are important considerations due to the proximity of the defect to oesophagus and pericardium and associated risks of erosion and cardiac tamponade². Within the current literature all cases have been diagnosed intraoperatively and therefore it is important that the surgeon be familiar with this rare type of diaphragmatic hernia.

References

1. J. L, C. G, X. S, T. C, Y. W. Another type of diaphragmatic hernia to remember: parahiatal hernia. ANZ J Surg. Published online 2020.
2. Köckerling F, Schug-Pass C, Bittner R. A word of caution: never use tacks for mesh fixation to the diaphragm! Surg Endosc. Published online 2018. doi:10.1007/s00464-018-6050-2