



DUODENAL OBSTRUCTION SECONDARY TO POST TRAUMATIC RETROPERITONEAL HEMATOMA: A CASE REPORT AND LITERATURE REVIEW

Gastroenterology

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ABSTRACT

Retroperitoneal hematoma is caused by blunt abdominal injuries in a small percentage of the population. Obstruction of the duodenum by intramural haematoma has often been described, however, duodenal obstruction due to retroperitoneal hematoma is uncommon. Signs and symptoms are sometimes ambiguous and deceiving. In diagnosing this, a thorough history and clinical examination, as well as supplementary assistance with investigations, are all beneficial. A strong index of suspicion and a multidisciplinary approach are required for timely care. With a review of the literature, we provide an interesting case that demonstrates the rarity and severity of this illness.

KEYWORDS

Retroperitoneal, Hematoma, duodenal obstruction, case report

INTRODUCTION

Patients who have suffered gastrointestinal injury as a result of traumatic abdomen frequently experience immediate symptoms secondary to bowel rupture and/or bleeding, necessitating emergency surgery. Small bowel stenosis or obstruction might emerge days or months after the event in rare situations. [1-3]

The urinary tract is the most common site of retroperitoneal injuries, but the pancreas, spine, arteries, adrenals, and duodenum are all at risk. Although abdominal trauma is common in patients aged 20 to 50, duodenal injury is more common in the younger population. The majority of cases of duodenal obstruction caused by retroperitoneal or intramural haematoma have a benign course. With a mortality rate of 20-30%, blunt abdominal trauma is more dangerous than penetrating injury. This could be due to difficulty in early detection, concomitant injury, or slow resuscitative measures delaying laparotomy. [4]

Abdominal pain (67.5 percent), leg pain (22.5 percent), flank, back, and groin pain are all common symptoms of a retroperitoneal haematoma. Dizziness, light-headedness, nausea, and vomiting are all secondary to intravascular volume depletion and intra-abdominal compartment syndrome. Hypotension, tachycardia, Abdominal distension and tenderness, and cutaneous ecchymosis are among the clinical signs observed. [5-8]

Surgical exploration is advised for all zone one central retroperitoneal haematomas, according to a study of the management of traumatic retroperitoneal haematomas. [9] Although, literature says, Surgery is suggested in individuals who have failed to respond to conservative treatment, such as those who are still unstable and haemorrhage or have developed pressure symptoms as a result of the haematoma.

Several factors contribute to death after retroperitoneal haemorrhage, including difficult or delayed diagnosis and multiple other associated injuries. Its mortality rate ranges from 19 to 38%. [10] This case report reviews the literature on blunt abdominal trauma and describes a case of retroperitoneal haematoma-induced duodenal obstruction.

Case Report

A 6 year old male child came to the emergency department with complaints of sudden onset severe epigastric pain and multiple episodes of bilious vomiting since 4 days. Patient also gives a history of blunt trauma to the abdomen by the iron rod of a seesaw, while playing, 4 days back. The epigastric pain was non-radiating, not associated with any aggravating or relieving factors. He also had 3-4 episodes of non-bilious vomiting daily post trauma, exacerbated by food, with contents being ingested food.

On examination, he was vitally stable, with tenderness with localized guarding over the epigastrium with minimal distension seen over

epigastrium. Nasogastric tube was inserted which revealed thick bilious content at the time of admission. Initial routine blood investigations showed a normal hemoglobin range with mild leukocytosis (Hb- 14.2, WBC- 13200 (neutrophils=80), Platelets- 4.2L). Initial chest and abdominal radiographs were unremarkable.

An abdominal ultrasonography was done showing a large oblong horizontal lesion predominantly cystic in nature measuring 87x53x30mm, seen centrally over the supra-umbilical region with few septations and vascular echogenic component within; severely compressing the 3rd and 4th parts of duodenum, giving rise to mild dilatation of proximal duodenum and stomach, suggestive of a probable diagnosis of a Complicated or hemorrhagic duplication cyst or a Complex mesenteric cyst.

Patient was admitted to the surgical ward with a nasogastric tube in situ and a IV contrast enhanced computed tomography of the abdomen (as blunt trauma abdomen is suspected, oral contrast avoided) was done, suggestive of a large retroperitoneal collection measuring 8.7x2.5cm noted between the SMA and Aorta, pushing the bowel loops anteriorly, with a hypodense central focus measuring 3.9x3.4cm suggestive of Retroperitoneal Haematoma.

No Evidence of any active retroperitoneal bleed visualized. The collection was seen compressing the IVC posteriorly and small bowel loops anteriorly limited by the lesser sac. Superiorly, the collection was seen to reach up to the tail of pancreas. (Figure 1A and 1B)

The patient was later operated electively with intraoperative findings suggestive of dilated proximal segments D1 and D2 of duodenum, a mass was identified behind the second part of the duodenum upto the ligament of treitz, with a dark hue, soft to firm on palpation.

Beyond D4, distal bowel was collapsed. To approach the mass, the Foramen of Winslow was widened, Kocherisation of duodenum was done and the ligament of Treitz was cut and the retroperitoneal juxta aortic hematoma was decompressed. A collection of around 30-40ml blood clots was evacuated. Duodenum and rest of the abdomen revealed no other abnormality other than mild congestion of Hepatic Flexure and ascending colon. (Figure 2A and 2B)

Patient recovery postoperatively was uneventful. The child was kept nil per oral for 5 days along with a nasogastric tube. On post op day 5, clear liquids were started, day 7, the Nasogastric tube removed and was started on soft feeds from post operative day 8.

The child tolerated the feeds well and a repeat contrast computed tomography of the abdomen was done suggestive of minimal residual collection. The child was discharged on post op day 11 after removal of all sutures. The Follow-up period was unremarkable.

DISCUSSION

The duodenal obstruction is then essentially an anatomical hazard that manifests as 'duodenal compartment syndrome,' a concept proposed by a case series of three cases, making it an extremely rare condition [11] Multiple causes of spontaneous retroperitoneal haematoma include leaking vascular aneurysms or ruptures, surgical or radiological interventions, renal or adrenal malignancy, bleeding disorders, or haemodialysis. [8,12]

A plain abdomen radiograph can be used to identify gastric distension, loss of renal outline, and psoas shadow of a retroperitoneal hematoma as a first step.

Although ultrasound has a limited role, it can detect free fluid in the abdominal and pelvic cavity as a result of retroperitoneal bleed and can help rule out other causes of gastric outlet obstruction.

[8,12] In such instances, multiphasic multidetector CT is the investigation of choice. It is painless and can determine the type, location, and extent of fluid collection as well as the cause of gastric outlet obstruction. [13]

A CT angiography, Magnetic resonance imaging and upper gastrointestinal endoscopy have also been utilised to rule out intraluminal causes of obstruction in cases where diagnosis has been challenging. [14]

Fluid resuscitation, nasogastric decompression, and nutritional supplements are the initial steps in treating a retroperitoneal haematoma. It is possible to do endovascular procedures such as selective arterial embolisation of the active vessel. In certain circumstances, CT-guided hematoma drainage is possible, but in others, open surgery is required.

Surgery is frequently recommended in cases of actively bleeding patients who have failed to respond to resuscitation attempts or have failed to respond to conventional radiology treatments, or in cases of a big hematoma producing abdominal compartment syndrome or a gastric outlet obstruction. [13,14]

CONCLUSION

Due to the wide range of symptoms, post-traumatic retroperitoneal hematoma producing duodenal blockage is a rare clinical phenomenon that might be difficult to diagnose. A strong index of suspicion and a multidisciplinary approach are required for timely care.

Non-operative therapy is generally recommended for stable, non-expanding retroperitoneal hematomas. Patients who fail to respond to conservative treatment may need surgical intervention.

Authors Contributions

- (I) Conception and design: All authors
- (II) Administrative support: All authors
- (III) Provision of study materials or patients: All authors
- (IV) Collection and assembly of data: All authors
- (V) Data analysis and interpretation: All authors
- (VI) Manuscript writing: All authors
- (VII) Final approval of manuscript: All authors

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The authors have completed the reporting checklist.

Data Sharing Statement

None needed

Conflicts Of Interest

All authors have completed the ICMJE uniform disclosure form. The authors have no conflicts of interest to declare.

Ethical Statement

- The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.
- A Written informed consent for publication was obtained.
- The study (Case report) conformed to the provisions of the Declaration of Helsinki (as revised in 2013).

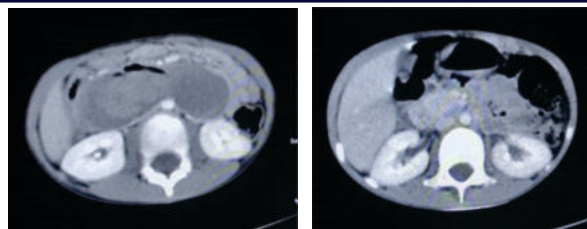


Figure 1A and 1B: (1A) Contrast Computed Tomography of the abdomen showing a Large retroperitoneal collection between the SMA and Aorta, compressing the IVC posteriorly and small bowel loops anteriorly, with a hypodense central focus. (1B) Post-operative Contrast Computed Tomography of the abdomen suggestive of minimal residual collection

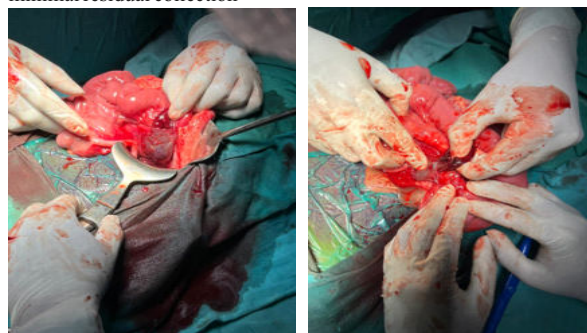


Figure 2A and 2B: Intraoperative Retroperitoneal juxta aortic hematoma compressing the duodenum evacuated

Abbreviations And Symbols

HB- Hemoglobin
WBC- White Blood Cells
SMA- Superior Mesenteric Artery
IVC- Inferior Vena Cava
CT- Computed Tomography

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