International Surgery Journal
Kakkar D et al. Int Surg J. 2020 Jul;7(7):2410-2413
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: http://dx.doi.org/10.18203/2349-2902.isj20202859

Case Report

Right para duodenal hernia presenting as small bowel obstruction: a rare case report

Dipanshu Kakkar*, Shubra Kochar, Sanjeev Prasad

Department of General Surgery, PT BDS PGIMS, Rohtak, Haryana, India

Received: 15 April 2020
Revised: 16 May 2020
Accepted: 18 May 2020

***Correspondence:**
Dr. Dipanshu Kakkar,
E-mail: dipanshukakkar89@yahoo.com

ABSTRACT

Internal hernias are rare congenital anomalies. The most common internal hernias are para duodenal hernias (53%) followed by pericaecal hernias 13%. Para duodenal hernia, a rare congenital anomaly that arises from an error of rotation of the midgut, is the most common type of intra-abdominal hernia. There are two types, right and left para duodenal hernia, the right being less common. Here we present a case of a 21 years old male presented in surgical emergency department non-passage of flatus and stools since, 5 days with associated nausea, vomiting and abdominal pain. Abdominal CT demonstrated signs of small bowel obstruction. A midline laparotomy was performed. Intra operative findings suggestive of right sided para duodenal hernia. Careful reduction of hernia and plication of sacs done with new D-J flexure formation. Para duodenal hernias are rare congenital entities. Left para duodenal hernia is more common than right. The right para duodenal hernia occurs when the pre arterial limb of the mid gut loop fails to rotate around the superior mesenteric artery. Symptoms may vary according to degree of obstruction or gut ischemia. Reduction of contents of the sac and plication of the sac to prevent further hernia formation and resection of small bowel in cases of gut gangrene remains the mainstay of the treatment.

Keywords: Mesocolic hernias, Para duodenal, D-J flexure, Ligament of trietz, Congenital

INTRODUCTION

Para duodenal hernias are uncommon and they are the most common type of intra-abdominal hernias accounting for half of reported cases. Para duodenal hernias occur more commonly on the left side than on the right. They are associated with a high lifetime risk of causing obstruction, and in cases that present with obstruction, the mortality rate is up to 20%, probably due to a delay in diagnosis. The diagnosis should be considered when examining a patient with acute small bowel obstruction without a history of prior abdominal surgery. CT scan is the method of choice for diagnosing para duodenal hernia of small bowel loops.

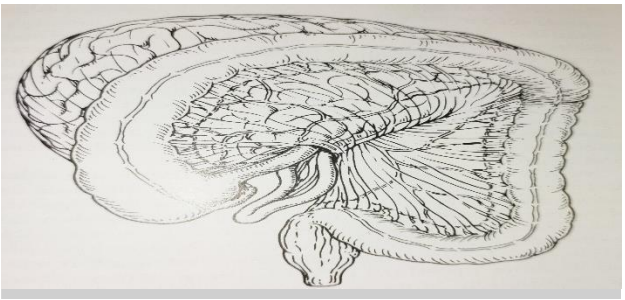

Figure 1: Right para duodenal hernia, the terminal ileum is seen to disappear through a foramen behind the ascending mesocolon, the mesentery of the right colon bulges because most of the small bowel lies behind it.

If diagnosed, the herniated loops should be reduced and the hernia orifice either closed or widened.[1]

CASE REPORT

A 21 years old male presented in surgical emergency Department of Pt B. D. Sharma PGIMS, Rohtak with chief complaints of dark red coloured stools since, 15 days and non-passage of flatus and stools since, 5 days with associated nausea, vomiting and abdominal pain.

On examination, patient was found to have tachycardia (PR-120/min), and blood pressure within normal range (BP-134/74 mmHg) and absence of any fever. Patient was having palpable lump in the right upper quadrant region which was smooth in contour, tender to touch and non-reducible. On per rectal examination no significant findings were noted. On investigations, WBC counts were raised (TLC-14000) and CRP was raised. Plain abdominal X-ray showed small fluid levels within bowel walls and subsequent abdominal CT demonstrated signs of small bowel overdistension in meso-gastrium, presence of fluid levels and thickening in mesentery walls (Figure 2). Patient was kept nil per os (NPO) and nasogastric tube was inserted for gastric aspiration. A foley's catheter was inserted to monitor urine output of the patient. Patient was stabilized vitally and shifted to emergency operation room.

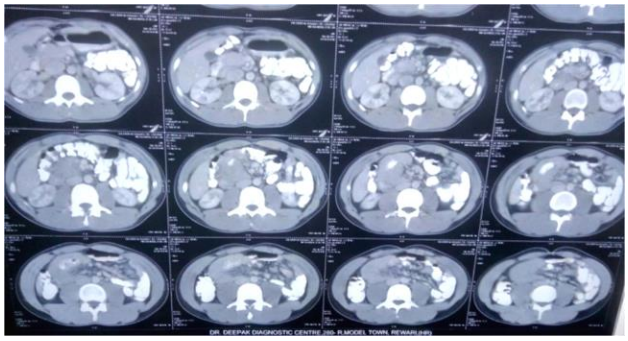

Figure 2: Contrast-enhanced computed tomography abdomen of the patient showing para duodenal hernia and proximal small bowel obstruction.

Figure 3. Para duodenal mass after opening the abdomen.

A decision to perform an exploratory laparotomy was made. A midline laparotomy incision was given. Abdomen opened into layers and after opening the peritoneum a large sac was found on right side and anterior wall of sac was formed by ascending colon and hepatic flexure (Figure 3).

On careful examination ligament of treitz was not traceable, D-J flexure, distal duodenum and proximal jejunum was found to be contents of sac. Neck of the sac identified at base near mesenteric vessels and sac was opened contents were reduced. Whole of proximal jejunum and D-J flexure were reduced (Figure 4).

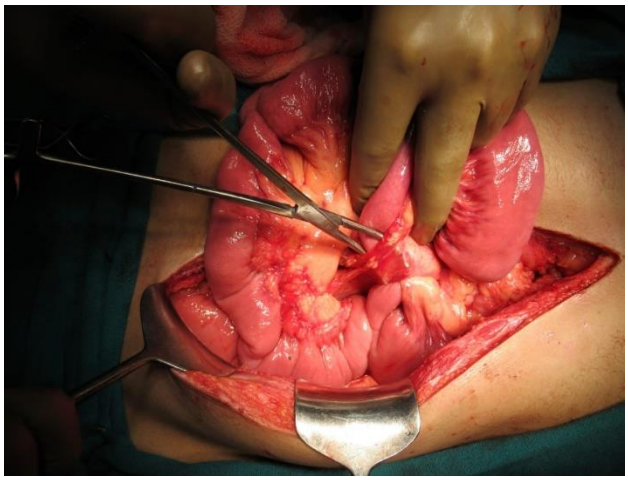

Figure 4: Neck of the sac identified and proximal bowel reduced present in the sac.

The contents of the sac i.e., proximal jejunum and distal duodenum were found to be healthy with no gangrenous changes (Figure 5).

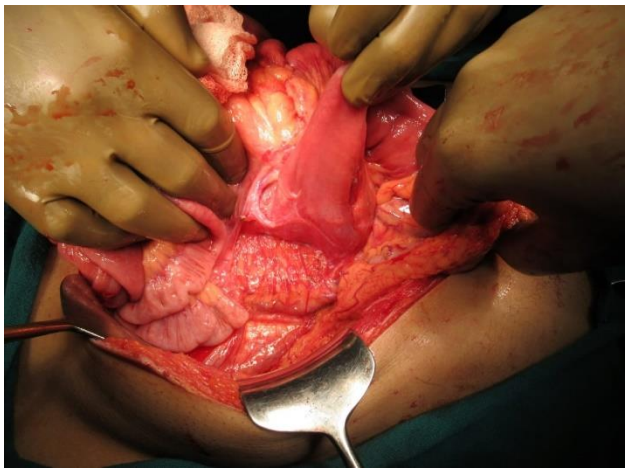

Figure 5: Distal duodenum and proximal jejunum are healthy.

The sac was excised and plicated and D-J flexure was fixed to the base of mesentery to form new ligament of treitz (Figure 6 and 7).

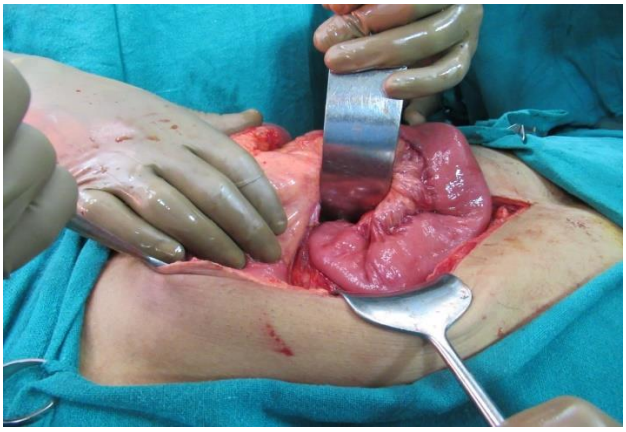

Figure 6: Complete reduction of the contents of the sac with distal tracing of bowel upto ileo-cecal junction.

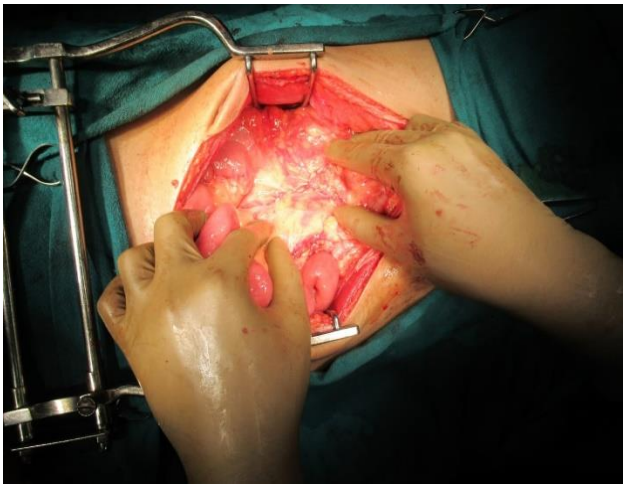

Figure 7: Final picture after plication of all sacs and new ligament of treitz formation.

All the possible sacs were plicated. Multiple haemorrhagic spots were found on mesentery of small bowel. Haemostasis was achieved and abdomen closed into layers.

Patient was kept NPO till 3 days post op and nasogastric tube was removed on 3rd post-operative day after commencement of bowel movement heard by presence of bowel sounds. Patient passed stools and oral feed started on 4th post-operative day and patient was discharged on 6th post-operative day. A post-operative OPD appointment was fixed after 1 week and patient's wound was examined and found to be healthy. Skin staplers were taken out on 10th post-operative day.

DISCUSSION

Plesiochronous digital hierarchy (PDH) also known as mesocolic hernias are congenital and derived from embryological peritoneal anomalies and associated abnormal intestinal rotation.[2] These patients usually present with chronic abdominal pain and vomiting with or without signs of intestinal obstruction.[3] There is an associated risk of strangulation and intestinal infarction for more than 50% over the course of a lifetime, making it necessary to investigate radiological signs of hypoperfusion and intestinal ischemia.[4] The high rate of mortality associated with these complications make early identification indispensable and justifies the role of abdominal CT in the early pre-operative diagnosis of para duodenal hernia. Multi slice computer tomography (CT) offers high resolution and multiplanar images which may be very demonstrative and characteristic providing a precise and early diagnosis, useful for surgical treatment planning. In typical CT images, PDH shows a cluster of dilated bowel segments with engorged and displaced mesenteric vessels at the hernial orifice.[5] Early surgical intervention is essential to avoid future complications because patients with PDH have a 20-50% mortality for acute presentations.[6,7]

The most accepted mechanism of right para duodenal hernias involves malrotation of the midgut during the early weeks of gestation. In the 5th week of embryonic development, the rapidly elongating midgut herniates into the umbilical cord. Later, the herniated midgut undergoes a counter-clockwise rotation of 90° around the superior mesenteric artery (SMA), leaving the pre-arterial limb on the left side. The herniated intestinal loop, first the pre-arterial then the post-arterial limb, returns to the abdominal cavity by the 10th week. During this process, the intestinal loop undergoes another 180° counter clockwise rotation. In the end, the pre-arterial limb lies left to the SMA and the post-arterial limb lies superior and right to the SMA.[8]

CONCLUSION

Para duodenal hernias also known as mesocolic hernias are rare congenital entities. They are the most common types of internal hernias, left para duodenal hernia being more common than right. They result from abnormal rotation of mid gut. The right para duodenal hernia occurs when the pre arterial limb of the mid gut loop fails to rotate around the superior mesenteric artery. Symptoms may vary according to degree of obstruction or gut ischemia and diagnosis require clinical expertise and radiological investigation like contrast-enhanced computed tomography scan abdomen can be helpful in making the diagnosis. Mortality rates are high specially when diagnosed late due to gut ischemia and gut gangrene.

Reduction of contents of the sac and plication of the sac to prevent further hernia formation and resection of small bowel in cases of gut gangrene remains the mainstay of the treatment. Studies have revealed that when the diagnosis is made preoperatively, a laparoscopic approach is possible. In our set up we performed a laparotomy due to non-availability of laparoscopic equipment's in the emergency services.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Blachar A, Federle MP, Dodson SF. Internal hernia: Clinical and imaging findings in 17 patients with emphasis on CT criteria. Radiology. 2001;218:68-74.
2. Takeyama N. CT of internal hernias. Radiographics. 2005;25(4):997.
3. Assenza M. Laparoscopic management of left paraduodenal hernia. Case report and review of literature. G Chir. 2014;35(7-8):185-9.
4. Ross D, Cawich SO. A case of a para duodenal hernia. Int J Surg Case Rep. 2010;1(2):19.
5. Blachar A. Radiologist performance in the diagnosis of internal hernia by using specific CT findings with emphasis on trans mesenteric hernia. Radiology. 2001;221(2):422-8.
6. Khyatt AW. Acute intestinal obstruction secondary to left para duodenal hernia: a case report and literature review. World J Emerg Surg Wjes. 2013;8(1):1-5.
7. Socas MM. Atypical left para duodenal hernia. Rev Esp Enferm Dig. 2006;98(6):473.
8. Berardi RS. Para duodenal hernias. Surg Gynecol Obstet. 1981;152:99-110.

Cite this article as: Kakkar D, Kochar S, Prasad S. Right para duodenal hernia presenting as small bowel obstruction: a rare case report. Int Surg J 2020;7:2410-3.