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Case Report

Surgery Section

Right Paraduodenal Hernia Causing Small Bowel Obstruction in an Adult with Down Syndrome: A Rare Case Report

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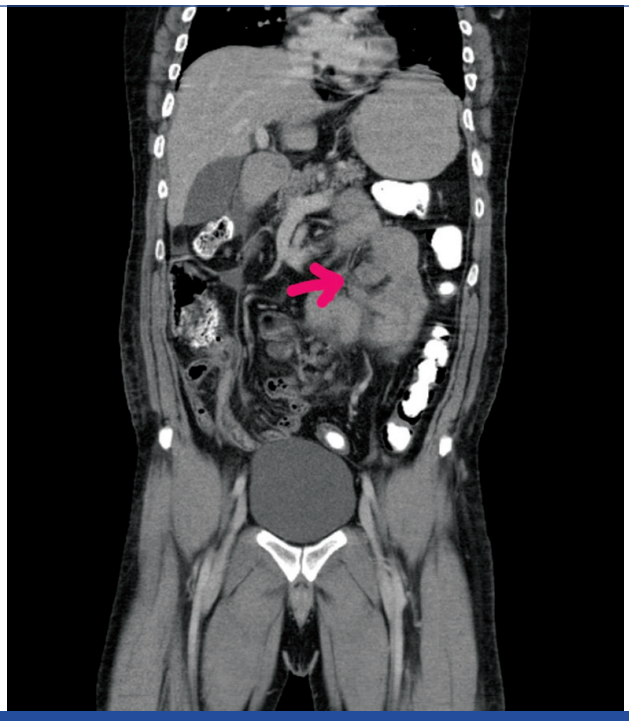
ABSTRACT

Out of all internal hernias, Paraduodenal Hernia (PDH) is the variety but in PDH right sided one is not that common. In Down Syndrome, morgagni hernias are often seen as compared to right PDHs. A 41-year-old male patient, a known case of Down Syndrome presented with chief complaints of abdominal pain, nausea, vomiting and abdominal distension since two days. Patient was surgically managed for the right PDH and later re-explored for adhesive intestinal obstruction on postoperative day 12 and later presented with small bowel obstruction symptoms due to adhesions and hence, relaprotomy for postoperative adhesive obstruction was performed. Right PDH is a rare entity encountered in Down Syndrome which makes it even rare.

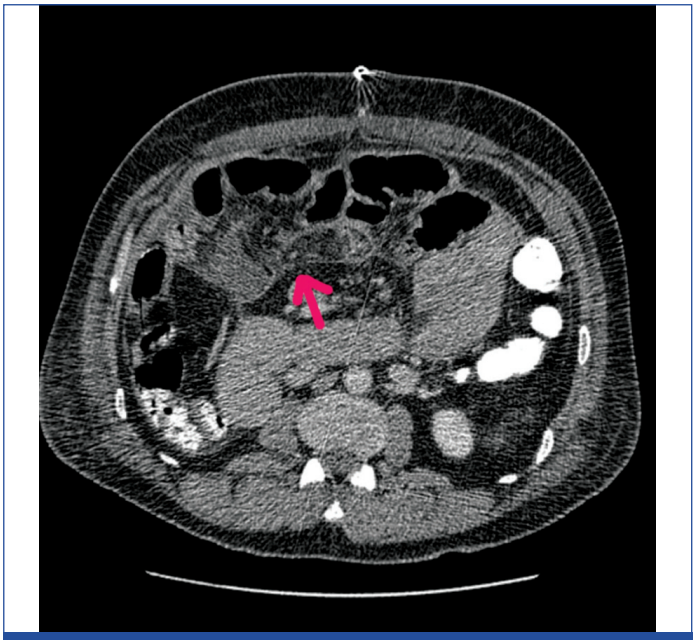
Keywords: Congenital, Internal hernia, Malrotation

CASE REPORT

A 41-year-old male patient, a known case of Down Syndrome presented with chief complaints of abdominal pain, nausea, and abdominal distension since two days. On clinical examination, patient was dehydrated, abdomen was distended with right inguinal scar of herniotomy for congenital hernia. Haematological investigations showed lymphocytopenia and neutrophilia and biochemical investigations were normal. C-Reactive Protein (CRP) was elevated. Plain X-ray abdomen showed few dilated small bowel loops with air fluid level, possibility of small bowel obstruction. Ultrasound abdomen was done which revealed few dilated small bowel loops in upper abdomen with air fluid levels suggestive of small bowel obstruction. A Multidetector Computed Tomography (MDCT) scan was done which revealed focal dilatation of illeal loops in right hypochondrium and periumbilical region measuring approximately 4 cm maximum diameter with mild surrounding fat stranding, possibility of PDH [Table/Fig-1,2].



[Table/Fig-1]: Coronal CT image of right Paraduodenal Hernia (PDH) with obstruction.



[Table/Fig-2]: Axial CT image of right Paraduodenal Hernia (PDH) with obstruction and cluster of small bowel showing behind superior mesenteric artery and vein.

Exploratory laparotomy was done. Proximal jejunal loops were identified with short and thick mesentery herniating through waldeyer's fascia. Hernia sac identified, was excised along with duodenal straightening, mesenteric lengthening and inter bowel adhesiolysis was also performed. Patient developed adhesive small bowel obstruction on day 12 for which he was re-explored and inter bowel adhesiolysis was done and was discharged on day 28 with stable haemodynamics. Intraoperative images cannot be presented in this paper as the patient didn't give consent for the same.

DISCUSSION

Internal hernias are of following types- paraduodenal, pericaecal, foramen of winslow, transmesentric, intersigmoid, supravesical/pelvic, retroanastomotic and transomental. Out of all internal hernias, PDH is the predominant type; out of which left PDHs are more commonly seen as compared to right PDHs. Hernia of Lanzert (left PDH) is most commonly seen as congenital defect. Waldyer's hernia (right PDH) has few common complications such as midgut malrotation and failure of fusion of mesentry to parietal peritoneum [1,2].

PDH or mesocolic hernias are congenital and are derivative of peritoneal anomalies and linked with abnormal intestinal rotation [3]. Chronic abdominal pain and vomiting with or without signs of intestinal obstruction are the usual presentation of most of the patients, as we encountered in our case where patient came with acute abdominal pain with vomiting and abdominal distension [4]. It is necessary to investigate for radiological signs of hypoperfusion and intestinal ischaemia, as there can be associated risk of strangulation and infarction of intestines for more than 50% over course of lifetime [5]. The high death rates associated with these complications make timely identification, vital and justifies the role of abdominal CT in the early pre-operative diagnosis of PDH. Multislice Computed Tomography (CT) provides high resolution and multiplanar images which may be very conclusive and characteristic providing a precise and timely diagnosis, useful for planning the surgical intervention [3,6]. CT images of PDH demonstrates a cluster of dilated bowel segments with engorged and displaced mesenteric vessels at the hernial orifice [7]. For acute cases, it is crucial to undergo early surgical intervention to avoid future complications because patients with PDH have a 20-50% mortality, in present case, patient's presentation was acute which was managed timely with surgical intervention [8,9].

Entire removal of sac is injudicious because of high risks of damage to the Superior Mesenteric Artery (SMA) and its branches and a possibly enormous blood loss. Laparotomy is the most used among several causes [10,11].

CONCLUSION(S)

Paraduodenal hernia associated with Down Syndrome is rare than other documented congenital abnormalities. This case report raises the apprehension as in managing this rare clinical entity and the advantages of CT imaging and treating the essential components like bowel reduction and obliteration of hernia.

REFERENCES

[1] Xu H, Nie N, Kong F, Zhong B. Large left paraduodenal hernia with intestinal ischemia: A case report and literature review. The Journal of International Medical Research. 2020;48(9):300060520955040. https://doi.org/10.1177/0300060520955040.

[2] Martín-Lagos-Maldonado A, Ruiz-Escolano E, Martínez-Tirado M, Salmerón-Escobar J. Right-sided paraduodenal hernia: Rare cause of recurrent abdominal pain. Revistaespanola de enfermedadesdigestivas: Organooficial de la Sociedad Espanola de PatologiaDigestiva. 2013;105(3):177-78. https://doi.org/10.4321/s1130-01082013000300013.

[3] Takeyama N, Gokan T, Ohgiya Y, Satoh S, Hashizume T, Hataya K, et al. CT of internal hernias. RadioGraphics: A review publication of the Radiological Society of North America, Inc. 2005;25(4):997-1015. https://doi.org/10.1148/rg.254045035.

[4] Assenza M, Rossi D, Rossi G, Reale C, Simonelli L, Romeo V, et al. Laparoscopic management of left paraduodenal hernia. Case report and review of literature. Il Giornale di chirurgia. 2014;35(7-8):185-89.

[5] Downes R, Cawich SO. A case of a paraduodenal hernia. International Journal of Surgery Case Reports. 2010;1(2):19-21. https://doi.org/10.1016/j.ijscr.2010.06.003.

[6] Martin LC, Merkle EM, Thompson WM. Review of internal hernias: Radiographic and clinical findings. AJR. American Journal of Roentgenology. 2006;186(3):703-17. https://doi.org/10.2214/AJR.05.0644.

[7] Blachar A, Federle MP, Brancatelli G, Peterson MS, Oliver JH, Li W. Radiologist performance in the diagnosis of internal hernia by using specific CT findings with emphasis on transmesenteric hernia. Radiology. 2001;221(2):422-28. https://doi.org/10.1148/radiol.2212010126.

[8] Al-Khyatt W, Aggarwal S, Birchall J, Rowlands TE. Acute intestinal obstruction secondary to left paraduodenal hernia: A case report and literature review. World Journal of Emergency Surgery: WJES. 2013;8(1):5. https://doi.org/10.1186/1749-7922-8-5.

[9] Socas Macías M, Alamo Martín JM, Suárez Grau JM, Suárez Artacho G, Tejada A, Martín Cartes J, et al. Atypical left paraduodenal hernia. Rev Esp Enferm Dig. 2006;98(6):473-75. https://doi.org/10.4321/s1130-01082006000600008.

[10] Uematsu T, Kitamura H, Iwase M, Yamashita K, Ogura H, Nakamuka T. Laparoscopic repair of a paraduodenal hernia. Surgical Endoscopy. 1998;12(1):50-52.

[11] Antedomenico E, Singh NN, Zagorski SM, Dwyer K, Chung MH. Laparoscopic repair of a right paraduodenal hernia. Surgical Endoscopy. 2004;18(1):165-66.

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