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Painful Abdominal Mass Showing Internal Hernia on CT scan

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Abstract **Case Report**

We report a case of a left para-duodenal internal hernia in order to describe the role of a CT scan in its diagnosis. It was a 19-year-old boy with no known personal medical history. He was received at "The stars clinic'' in Bamako (Mali) on 01/15/2020 for an abdominal CT scan for the assessment of diffuse abdominal pain on mass on palpation. The CT scan revealed agglutination of the small intestinal loops with its mesentery and its mesenteric vessels in the left paramedian location without complications. Faced with this semiological CT scan, the diagnosis of a left para-duodenal internal hernia was retained. Surgical management confirmed this diagnosis. Since the clinical diagnosis of an internal hernia is often unrecognized, cross-sectional imaging methods with multiplanar reformatting, in particular CT scan, remain essential in the management of this pathology.

Keywords: Paraduodenal hernia, TC scan, abdominal mass.

INTRODUCTION

Internal hernias are defined by the protrusion of a viscus through a normal or abnormal peritoneal or mesenteric opening within the boundaries of the peritoneal cavity [1]. These are protrusions of the hollow abdominal viscera in an intraperitoneal orifice which remain inside the abdominal cavity [2].

An internal abdominal hernia differs from both an external abdominal hernia, in which the protrusion occurs through an opening in the abdominal wall, and a diaphragmatic hernia, which involves weakness of the diaphragm [3].

Since internal abdominal hernias are rare, their diagnosis remains a challenge for both the clinician and the radiologist [3]. Computed tomography (CT) facilitates the diagnosis of internal abdominal hernias. Subtle transmesenteric internal abdominal hernias can be difficult to diagnose laparoscopically [3].

We report the case of a left para-duodenal intern in order to describe the role of medical imaging, particularly computed tomography, in its precise diagnosis.

OBSERVATION

It was a 19-year-old boy with no known personal pathological history. He was seen at the Les Etoiles clinic in Bamako (Mali) on 01/15/2020 for an abdominal CT scan. The reason for this indication was diffuse abdominal pain on a liquid-like mass on palpation.

CT scanning was performed before and after intravenous injection of contrast product. We observed an agglutination of the small intestinal loops of circular appearance with its mesentery and the mesenteric vessels in left paramedian localization extended from the hypochondrium to the left flank. Only the CT images after the injection of the contrast product are

illustrated here (Figures 1 and 2). No CT signs of complications were observed.

Surgical management confirmed the CT scan diagnosis of internal hernia (Figure 3).

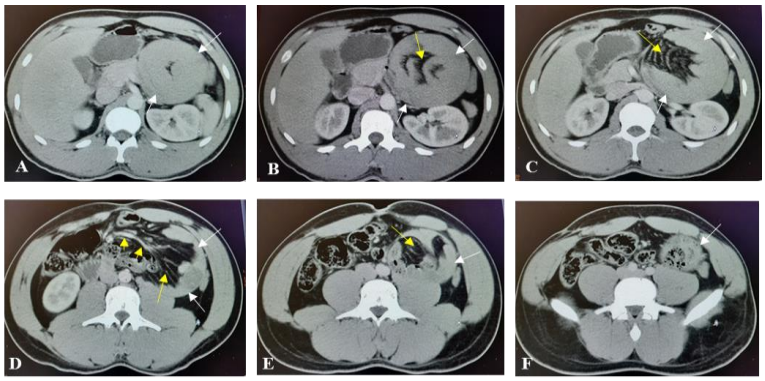

Figure 1: Abdominal computed tomography in axial sections after injection of contrast product, arterial phase (A to F). Agglutination of small bowel loops of circular appearance (white arrows), mesenteric fat (yellow arrows) mesenteric vessels (yellow arrowheads) in left paramedian location occupying the hypochondrium and left flank

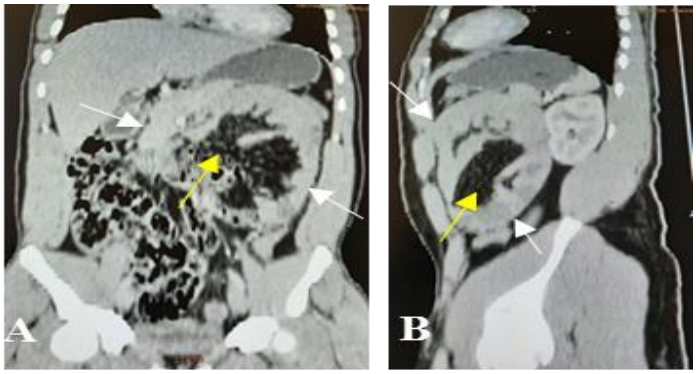

Figure 2: CT images in coronal (A) and sagittal (B) reconstructions in the arterial phase showing agglutination of small bowel loops with a circular appearance (white arrows) and mesenteric fat (yellow arrows)

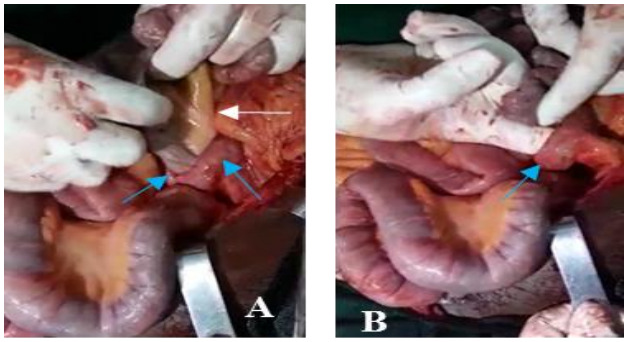

Figure 3: Intraoperative photographic images. The blue arrows illustrate the hernial neck and the white arrow shows the intestinal loops

DISCUSSION

An internal abdominal hernia differs from both an external abdominal hernia, in which the protrusion occurs through an opening in the abdominal wall, and a diaphragmatic hernia, which involves weakness of the diaphragm [3].

The orifice may be either acquired, such as a post-surgical, traumatic, or post-inflammatory defect, or congenital, including both normal openings, such as the Foramen of Winslow, and abnormal openings resulting from internal rotation abnormalities and peritoneal attachment [1]. No traumatic or surgical history was found in our patient.

In the literature, several types of internal hernia are described: para-duodenal hernias, trans-mesocolic hernias, trans-omental hernias, trans-meso-sigmoid hernias, Winslow's hiatus hernias and peri-hernias caecal. Internal paraduodenal hernias are the most common, at 50-55% [2, 4]. About 80% of these paraduodenal hernias are observed on the left side [2]. They interest men three times more often than women [2, 4]. The case reported here by the authors was a boy.

Anatomically, paraduodenal hernias correspond to slowly developing processes of detachment of the left or right fascia of Toldt from initiating zones corresponding to localized adhesion defects of the duodenopancreatic block or fascia of Treitz [2]. Left anterior para-duodenal hernias are the most common. They alone account for 53% of internal hernias and 75% of paraduodenal hernias [2]. They develop from the Landzert fossa, located at the level of the duodenojejunal angle, in the descending and transverse mesocolons by detaching the left fascia of Toldt which contributes to constitute the hernial sac. The arrangement of the intra-hernial loops reflects their inclusion in a bag of large volume placed in the left hypochondrium. On CT, the intrahernial small bowel loops are grouped together in a more or less typically circular or oval fashion in the left hypochondrium between the pancreas behind, the stomach in front and to the left of the angle of Treitz in general. It is essential to seek to identify the vascular landmarks of the anterior wall of the hernial sac, which are the trunk of the inferior mesenteric vein displaced forwards and upwards, as well as that of the left superior colonic artery, which is less easy to specify. This landmark is an essential element of the diagnosis, simple and little cited in the literature [2].

Right anterior paraduodenal hernias are 2 times less frequent than their left counterparts, they develop from Waldeyer's fossa and are very easy to diagnose on CT because their neck passes under the proximal truncal segment of the superior mesenteric artery which is neatly stretched both forward and to the right. When the hernial neck is located lower than in the typical form, the positional changes of the proximal segment of the superior mesenteric artery may be less obvious and the multiplanar reformations are then invaluable to analyze precisely the herniated intestinal structures [2].

In our patient, we observed circular agglutination of the small intestinal loops with his mesentery and the mesenteric vessels in an extended left paramedian location from the hypochondrium to the left flank suggesting a left anterior para-duodenal hernia.

The presentation of internal hernias depends on their mode of constitution. Internal hernias developed in a peritoneal detachment are characterized by their inclusion in a spherical sac (para duodenal and intersigmoid hernias). Internal hernias by incarceration of loops in an orifice of a mobile peritoneal segment simulate a flanged volvulus. It is the seat of the point of convergence of the distended loops which makes it possible to differentiate transmesenteric hernias from transomental hernias or hernias of the falciform ligament. The identification of vascular structures is an indispensable guide for the characterization of internal hernias [5, 6].

Symptoms of internal abdominal hernias are nonspecific and consist of mild abdominal discomfort alternating with episodes of intense periumbilical pain and nausea [3]. Internal hernias can be revealed by an acute picture of intestinal obstruction. Most often with an ischemic component by vascular strangulation, and they are responsible for 0.2 to 5.8% of small bowel obstructions in published series [2]. Our patient was seen for abdominal pain on a palpable mass. Computed tomography facilitates the diagnosis of internal abdominal hernias and helps to avoid clinical diagnostic errors, particularly in subtle trans-mesenteric hernias [3, 7].

CONCLUSION

The clinical diagnosis of an internal hernia being most often unknown, cross-sectional imaging methods with multiplanar reformatting, particularly computed tomography, are essential in the management of this pathology.

Conflicts of interest: The authors declare that they have no conflicts.

REFERENCES

1. Martin, L. C., Merkle, E. M., & Thompson, W. M. (2006). Review of internal hernias: radiographic and clinical findings. *American Journal Of Roentgenology-New Series*, *186*(3), 703-717.
2. Mathias, J., Phi, I., Bruot, O., Ganne, P. A., & Laurent, V., & Regent, D. (2008). Internal hernias. *EMC - Radiol Imag Medical - Abdominal – Dig*, 3(4):1-8.
3. Mathieu, D., & Luciani, A. (2004). Internal abdominal herniations. *American Journal of Roentgenology*, *183*(2), 397-404.
4. Medarhri, J., Ounani, M. E., Rachid, K., Jaafar, A., Iken, A., & Echarrab, M. (1997). Left internal para-duodenal hernia. About a new observation. Maghreb Medicine, 62, 19-22.
5. Bedioui, H., Daghfous, A., Ksantini, R., Nouira, K., Chebbi, F., Fteriche, F., ... & Bensafta, Z. (2007). Internal herniation through the falciform ligament revealed by acute intestinal obstruction. *Presse Medicale (Paris, France: 1983)*, *37*(1 Pt 1), 44-47.
6. Régent, D., Laurent, V., Barbary, C., Corby-Ciprian, S., Kermarrec, E., & Mathias, J. (2007). Internal hernias: the keys to CT diagnosis. *J Radiol*, 88(10):1533.
7. Ouedraogo, S., Ouedraogo, S., Kambire, J. L., Zida, M., & Sanou, A. (2017). Occlusion by congenital transmesenteric internal hernia: about two cases. *Pan Afr Med J*, 27:1-5.