

Transmesenteric Internal Abdominal Hernia Multi-detector row computed tomography findings

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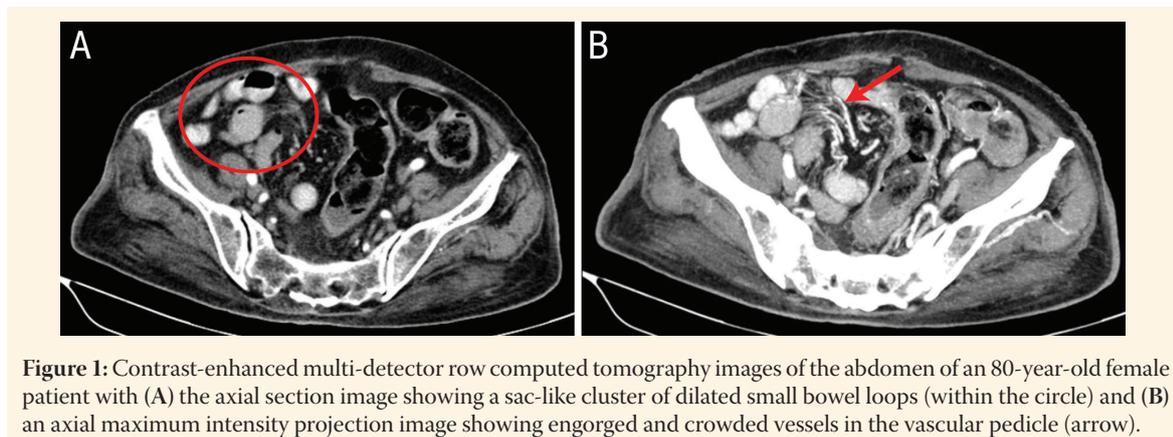


Figure 1: Contrast-enhanced multi-detector row computed tomography images of the abdomen of an 80-year-old female patient with (A) the axial section image showing a sac-like cluster of dilated small bowel loops (within the circle) and (B) an axial maximum intensity projection image showing engorged and crowded vessels in the vascular pedicle (arrow).

AN 80-YEAR-OLD FEMALE PATIENT PRESENTED to the Emergency Department of the All India Institute of Medical Sciences, Bhubaneswar, in 2016 with sub-acute intestinal obstruction features. There was no history of surgery, diabetes, hypertension or previous exposure to tuberculosis. A multi-detector row computed tomography (MDCT) with an angiography showed a cluster of mild dilated small bowel loops containing air-fluid levels on the right side of the abdomen. Engorged and crowded vessels were seen in the pedicle. The vessels converged at the hernia entrance with a twisted vascular pedicle [Figures 1A, 1B and 2A].

Another case of a 56-year-old female patient, who had undergone a hepaticojejunostomy for a post laparoscopy common bile duct injury six years back, presented to the Emergency Department of the All India Institute of Medical Sciences, Bhubaneswar, in 2017 with features of intestinal obstruction. There was no other significant medical history. MDCT angiography showed a cluster of mild dilated small bowel loops in the mid-abdomen without features of bowel ischemia. Twisting of the vascular pedicle (whirlpool sign) was suggestive of volvulus [Figures 2B and 3].

Defect closure with repositioning of the bowel loops and fixation of the mesentery was done surgically with uneventful postoperative recovery in

both patients. Both patients were doing well during follow-up.

Consent was obtained from both patients for publication purposes.

Comment

A transmesenteric hernia (TMH) is an uncommon type of an internal hernia that can occur through a congenital or an acquired defect in the mesentery.¹ It most commonly presents with intestinal obstruction and is highly prone to volvulus and strangulation. Congenital causes account for nearly 8% of all TMHs.² TMH usually occurs near the origin of mesentery, at the ligament of Treitz or close to the ileocecal valve. The defect size ranges from 2–5 cm in diameter.¹ The acquired mesenteric rents are mostly secondary to surgery, trauma or inflammation.¹ Internal hernias are considered dormant as long as they reduce spontaneously. Symptoms range from mild digestive complaints, abdominal distension, continuous vague discomfort in the epigastric region, intermittent periumbilical pain, nausea and vomiting to recurrent episodes of intestinal obstruction.³ They become clinically apparent only when there is small bowel obstruction; herniated bowel loops may present as a palpable tender lump.² Non-specific clinical features make the diagnosis challenging but a contrast-

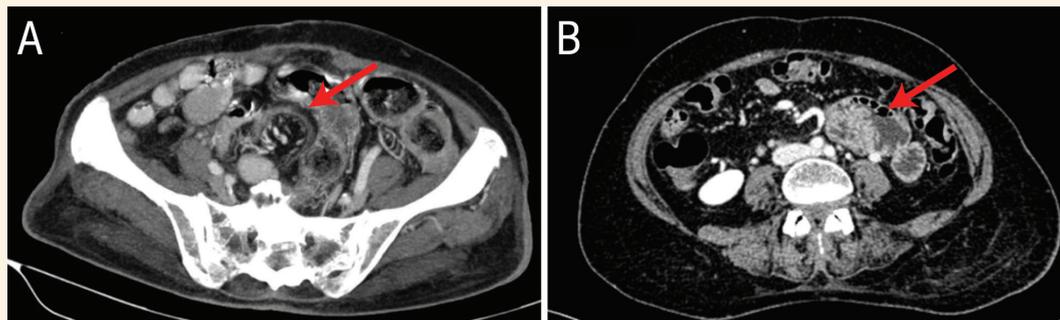


Figure 2: A: Axial maximum intensity projection of the abdomen with angiography of an 80-year-old female patient during contrast-enhanced multi-detector row computed tomography showing twisting of the vascular pedicle with engorged vessels (arrow). B: Axial section image of the abdomen of a 56-year-old female patient during contrast-enhanced multi-detector row computed tomography showing a cluster of dilated small bowel loops (arrow).



Figure 3: Axial maximum intensity projection of the abdomen with angiography of a 56-year-old female patient during contrast-enhanced multi-detector row computed tomography showing twisting of the vascular pedicle (arrow).

enhanced MDCT scan with angiography is very helpful in diagnosing the condition. The characteristic MDCT finding of an internal hernia is a sac-like cluster of dilated small bowel loops.⁴ The absence of a sac or a surrounding membrane differentiates it from an abdominal cocoon.⁵ A transition zone can be seen between the proximal dilated small bowel loops and the normal or collapsed distal bowel. The vessels in the vascular pedicle of the herniated bowel loops appear crowded and stretched on a CT angiography. The mesenteric vessels converge at the entrance of the hernial sac, with whirling of the vascular pedicle (whirlpool sign) at the point of the mesenteric twist. In cases of strangulation, bowel ischaemia signs, such as wall thickening and enhancement, pneumatosis and

ascites, may be seen.⁴ Identification of the characteristic MDCT findings can help in early diagnosis of TMH and rescue the affected bowel loops.

AUTHORS' CONTRIBUTION

SM drafted the manuscript as well as collected the images and patient history. AS provided the case diagnosis. TSM and MS performed the clinical and surgical management of the patients and follow-up. All authors edited and reviewed the manuscript. All authors approved the final version of the manuscript.

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