

CT Findings of Gastrointestinal Stromal Tumor in Meckel's Diverticulum - a Case Report

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Citation

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Abstract

Although the small bowel constitutes about 75% of the gastrointestinal (GI) tract, primary tumors in it are relatively rare, making up only a small percentage of all GI neoplasms. Neoplasms of Meckel's diverticulum are rare and gastrointestinal stromal tumors are very uncommon malignant tumors occurring in this site. We report a case of a small-bowel tumor with an extremely rare histological type and uncommon location which was diagnosed on 64 MDCT scan and subsequently confirmed at surgery and histopathology.

A 46-year-old male nonsmoker and nondiabetic presented to the emergency department with 3 massive gastrointestinal bleeding episodes in the form of melena. On examination, the patient was afebrile and was having tachycardia and pallor with a blood pressure of 80/30mmHg. He had no past history of hematemesis or melena. The patient was resuscitated by 6 fresh blood transfusions and underwent abdominal x-ray and ultrasonography which were unremarkable. In 24 hours, the patient underwent three EGDs which failed to reveal any cause of bleeding from upper gut. Next day, colonoscopy was done which showed colon smeared with altered blood; however, no mucosal abnormality was visualized up to the ileocecal valve. In addition, however, blood was seen pouring out through the ileocecal valve and about 10cm of terminal ileum were filled with blood. No mucosal lesion was seen. On the second day in evening, the patient again had two massive bleeding episodes, again went into shock and four more blood transfusions were given to combat shock. The patient was sent to the department of radiodiagnosis for CT scan which was done by Siemens Somatom Sensation 64 Multislice CT and showed a highly enhancing pelvic mass, exophytic, projecting from the small-gut wall, likely arising from a Meckel's diverticulum (figures 1, 2 and 3).

Figure 1

Figure 1: Axial MDCT image showing an exophytic, briskly enhancing pelvic mass arising eccentrically from the small gut.



Figure 2

Figure 2: Coronal MDCT image showing an exophytic pelvic small-gut mass inferomedial to the left common iliac artery.



Figure 3

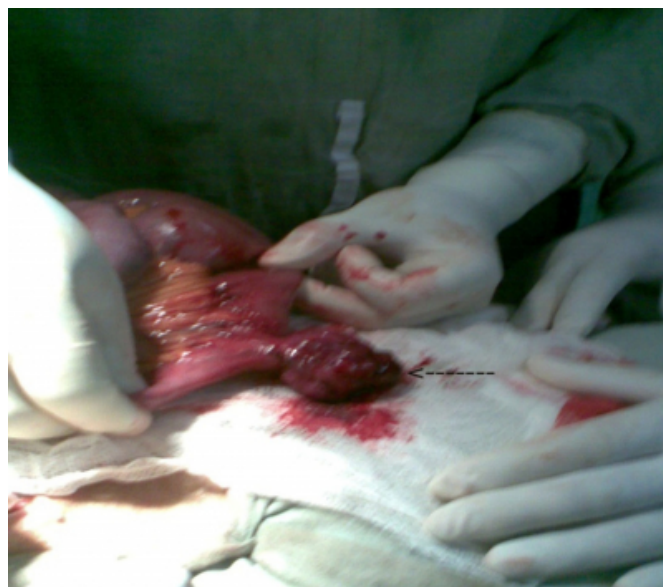
Figure 3: Sagittal MDCT image showing an exophytic small-gut mass.



At emergency laparotomy, a perforated Meckel's diverticulum with a necrotic wall was found. A 10cm-long bowel segment including the perforated diverticulum was resected and a side-to-side anastomosis performed (figure 4).

Figure 4

Figure 4: Peroperative photograph showing a mass lesion arising from Meckel's diverticulum



Postoperative recovery was smooth, and the patient was

discharged 10 days after surgery. Subsequent histopathological examination revealed a gastrointestinal stromal tumor arising from Meckel's diverticulum.

DISCUSSION

Meckel's diverticulum, a remnant of the omphalomesenteric duct, is present in 1-3% of the population. Tumors of Meckel's diverticulum, though uncommon but well recognized, are found with an incidence of 0.5-3.2% [1234]. GISTs comprise the large majority of mesenchymal tumors including leiomyomas and schwannomas [5]. Radiological appearances of GIST may include asymmetrical thickening of the bowel wall initially, but more commonly an exophytic soft-tissue mass with relatively well defined margins is seen [6]. Areas of necrosis are present in up to 70% of tumors [7] and particularly in larger tumors that frequently undergo central necrosis, due to rapid growth, and subsequent ischemia [9]. These also demonstrate heterogeneous contrast enhancement [6]. Areas of calcification and hemorrhage are seen within 7% and 64% of tumors, respectively [7]. CT is of limited use in diagnosis owing to difficulty in distinguishing a diverticulum from intestinal loops [89]. However, CT may demonstrate a Meckel's diverticulum complicated by tumor or inflammation. Less commonly, calcification specifically related to a Meckel's diverticulum may be seen in the form of either enteroliths [10] or as milk of calcium [11]. Both are thought to be caused by stasis of intestinal contents. The diagnosis of Meckel's diverticulum may also be suspected if attachment of the diverticulum to the umbilicus is seen [9]. Although rare, a Meckel's diverticulum tumor should be considered when CT or ultrasound demonstrates a pelvic mass closely associated to small bowel loops.

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