Inflammatory pseudotumor of the colon

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Inflammatory pseudotumor refers to a nonmalignant or low-grade neoplastic lesion characterized by the presence of spindle-cell proliferation with abundant inflammatory cells. Lung and orbit are the most frequent sites of occurrence, but the lesions may originate in nearly every site in the body, including the abdomen. We present a rare and interesting case of inflammatory pseudotumor of the colon in a 21-year-old male who presented to the emergency room with abdominal pain.

Case report

A 21-year-old man presented to the emergency department with right upper- and lower-quadrant abdominal pain. Symptoms were intermittently present for one month, with acute exacerbation in the last four days. There was no history of fever, nausea, or vomiting, and no change in bowel habits or blood in the stool. Vital signs at presentation were: temperature of 36.4°C, pulse of 88/minute, respiratory rate of 16/minute, and blood pressure of 119/75 mmHg. Jaundice and pallor were absent.

On physical examination, the abdomen was soft. Palpation of the right upper quadrant demonstrated a soft-tissue mass with mild associated tenderness. Normal bowel sounds were audible. Laboratory studies revealed a white-cell count of 10.2x 10³/µL, neutrophils 85%, lymphocytes 11%, monocytes 4%, eosinophils 1%, and basophils 0%. Total bilirubin was 9 µmol/L (normal range, 3-17). Liver enzymes were normal, with Alanine aminotransferase level of 16 U/L (normal range, 0–29 U/L), Aspartate aminotransferase level was 12 U/L (normal range, 15–37 U/L), and alkaline phosphatase level 57 U/L (normal range, 50–136 U/L).

An ultrasound followed by contrast-enhanced CT of the abdomen and pelvis were performed. Transabdominal ultrasound revealed a complex heterogeneous mass in the right abdomen in close relation to the ascending and descending colon (Fig. 1). The mass was approximately 10 x 6cm in its AP and transverse dimensions, respectively. The mass was predominantly cystic, with some solid components. On color Doppler sonography, the solid component demonstrated hypervascularity. The adjacent ascending colon and hepatic flexure were thick-walled. The cecum and transverse colon were identified separately from the mass. However, the appendix was not visualized.
acquisitions. 100 ml of iopamidol (Isovue 370; Bracco Diagnostic) was injected at the rate of 4ml/sec. On unenhanced CT, the mass was hypoattenuating, and no calcification was evident. Contrast-enhanced CT demonstrated a complex, multiseptated cystic mass lesion with enhancing septations occupying most of the right upper and mid abdomen, in close apposition to the ascending colon and hepatic flexure (Fig. 2). Anteriorly, the mass abutted the abdominal wall; posteriorly, it abutted the right psoas muscle. The adjacent ascending colon demonstrated mucosal hyperenhancement and submucosal edema. There was no associated bowel obstruction. Multiple lymph nodes measuring less than one centimeter were identified in the retroperitoneum. There was no metastatic disease in the abdomen or pelvis.

A differential diagnosis of mesenteric mesenchymal tumor, gastrointestinal stromal tumor, or inflammatory pseudotumor was entertained. The referring surgeons felt that colonoscopy would not be helpful and that biopsy would not be a good idea in the setting of a predominantly cystic mass. Thus, a decision was made to proceed to operative management.

At laparotomy, a mass was found adherent to the ascending colon, retroperitoneum, and proximal transverse mesocolon. Surgical resection with right hemicolectomy was performed. Pathologically, gross inspection of the specimen revealed a 14.5-cm lobulated mass, purple to tan in color (Fig. 3). A 9.5-cm intact cystic structure was identified centrally within this mass. On cut surface, this had a relatively thin-walled multiloculated cystic appearance with variable intracystic contents ranging from tan serous fluid to pasty dark-brown material. Note relationship with the adjacent colon (C).

Microscopically, the tumor showed pseudozystic cavities with signs of recent and remote hemorrhage (Fig. 4). Between these, there was a mixed inflammatory infiltrate including eosinophils and plasma cells. In some areas, a bland spindle-cell proliferation was noted. The spindle cells revealed typical myofibroblast morphology with large, ovoid nuclei and abundant cytoplasm. The spindle-cell compo-
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The imaging features of inflammatory pseudotumor are nonspecific. Although the majority of the cases reported in the literature are solid lesions, our case was predominantly cystic. Sonographically, inflammatory pseudotumor appears as mixed-echotexture solid or cystic masses with well- or ill-defined borders. The CT appearance of the inflammatory pseudotumors is variable. The mass is typically heterogeneous in attenuation. The majority of the cases in the literature have reported well-defined margins. On unenhanced scans, the mass may be hypo- or isodense compared to the muscle. Calcification has been observed in tumors involving the pancreas, stomach, and liver. An inflammatory pseudotumor usually has a variable enhancement pattern with intravenous iodinated contrast ranging from no enhancement, to heterogeneous enhancement, to peripheral enhancement. Larger lesions may reveal central, nonenhancing, necrotic areas (5, 8, 10).

In summary, inflammatory pseudotumor should be considered in the differential diagnosis of abdominal or pelvic mass with nonspecific imaging features. It can mimic malignant tumors both clinically and radiologically. Radiologists should be familiar with this entity to avoid unnecessary radical surgery whenever possible.

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