Case Report: Omental Infarction: An Unusual Cause of Left-Sided Abdominal Pain

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Abstract
Left-sided omental infarction (OI) is rare in both the adult and pediatric patients. To our knowledge, only 2 pediatric cases of a left-sided OI have been reported in the literature. We report a case of an obese 13-year-old male who presented with a 6-day history of intermittent, colicky, left upper quadrant abdominal pain.

Introduction
Omental infarction (OI) is an uncommon but increasingly recognized cause of right-sided abdominal pain in pediatric patients.1 However, left-sided OI is rare in both adults and children. To date, only 2 pediatric cases of left-sided OI have been described in the literature.2,3 Of the 400 reported cases of OI, only 50 involved pediatric patients, with the majority presenting as right lower quadrant abdominal pain.1

Case Report
An obese 13-year-old male presented with a 6-day history of intermittent, colicky, left upper quadrant abdominal pain. There was no history of trauma, anorexia, nausea, vomiting, or diarrhea. His weight was greater than the 95th percentile, and his body mass index (BMI) was 31 kg/m2. He had left upper quadrant tenderness to palpation with no signs of rebound tenderness, guarding, or rigidity. Routine labs, including complete blood count, metabolic panel, and coagulation profile, were normal. The erythrocyte sedimentation rate was increased at 17 seconds. Stool for occult blood and calprotectin were normal. Computed tomography (CT) revealed a hypodense, homogeneous mass with fat stranding in the left upper quadrant (Figure 1).

Based on radiological findings, he was diagnosed with OI. The patient was conservatively managed with pain control, intravenous fluid hydration, and antibiotics. The patient was discharged 48 hours later with improvement in symptoms. To our knowledge, the patient has remained asymptomatic.

Discussion
Predilection of OI to the right side may be attributed to the longer length and increased mobility of the greater omentum. The right half of the omentum consists of anatomically altered vasculature, which is less tolerant of spontaneous venous stasis and is prone to thrombosis secondary to stretching of omental veins.4 Given the location and nonspecific symptoms, patients are often misdiagnosed with other right-sided diseases such as acute appendicitis, epiploic appendagitis, intussusception, malrotation, and acute cholecystitis.3,5 More than 0.1–0.5%
of patients admitted with appendicitis are diagnosed with OI on laparoscopy.\textsuperscript{1,5} However, with the emergence of newer, sophisticated imaging techniques and increased awareness among health care providers, more children are being diagnosed with OI earlier in the disease course, preventing misdiagnosis and subsequent complications.\textsuperscript{5}

It is possible that, combined with changes in the epidemiology of known risk factors such as pediatric obesity, the advent of these improved diagnostic tools may have led to an increase in the prevalence of OI in children.\textsuperscript{5} Park et al reported a prevalence of OI of 32.6%, a two-fold increase among all patients over the past decade.\textsuperscript{4,5} Most of the children were younger than 15 years and presented with right lower quadrant abdominal pain.\textsuperscript{5} Male sex has also been reported as a common risk factor for the development of OI; the likelihood of greater omental fat accumulation in males compared with females may explain the male predilection.\textsuperscript{6} Local trauma, heavy food intake, coughing, sudden body movements, laxative use, and hyperperistalsis are other reported risk factors.\textsuperscript{6}

CT scan demonstrating a heterogeneous fatty mass can help differentiate OI from other lesions. Abdominal ultrasound is less specific, as imaging findings for this entity can be subtle on sonography and recognition is operator-dependent. CT offers a distinct advantage over sonography in the evaluation of OI, as the mass is reliably identified in the characteristic location between the anterior abdominal wall and the colon.\textsuperscript{7} In the largest pediatric case series of 19 children reported by Rimon et al, the sensitivity of ultrasound to detect OI was 64% compared to the 90% sensitivity of abdominal CT.\textsuperscript{8} Various case reports advocate a conservative management approach.\textsuperscript{8} Rimon et al reported success from a conservative approach in 14 of 19 pediatric patients treated with IV antibiotics, hydration, and pain control.\textsuperscript{8} Symptoms resolved without any complications. Surgical exploration in 5 patients was performed due to a clinical suspicion of appendicitis.\textsuperscript{8} OI is now described as a self-limiting condition supported by CT imaging data at 1–3 years follow-up. The comparative risks of leaving the necrotic tissue within the peritoneal cavity versus the risks of surgery are unknown, so long-term follow-up studies in children comparing conservative versus operative treatment for OI are required.

**Disclosures**

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**References**

1. Tsunoda T, Sogo T, Komatsu H, Inui A, Fujisawa T. A case report of idiopathic omental infarction in an obese child. \textit{Case Rep Pediatr.} 2012. doi: 10.1155/2012/513634.
2. Foscolo S, Mandy D, Galttoy MA, et al. Segmental omental infarction in childhood: An unusual case of left-sided location with extension into the pelvis. \textit{Pediatr Radiol.} 2007;37(6):575–7.
3. Aoun N, Nader L, Haddad-Zebouni S, et al. Left segmental omental infarction in a child: Conservative treatment [in French]. \textit{Arch Pediatr.} 2006;13(7):1040–2.
4. Helmraith MA, Dorfman SR, Minifie PK, et al. Right lower quadrant pain in children caused by omental infarction. \textit{Am J Surg.} 2001;182(6):729–32.
5. Park TU Oh JH, Chang IT, et al. Omental infarction: Case series and review of the literature. \textit{J Emerg Med.} 2012;42(2):149–54.
6. Varjavandi V, Lessin M, Kooros, K, et al. Omental infarction: Risk factors in children. \textit{J Pediatr Surg.} 2003;38(2):233–5.
7. Nubi A, McBride W, Stringel G. Primary omental infarct: Conservative versus operative management in the era of ultrasound, computerized tomography, and laparoscopy. \textit{J Pediatr Surg.} 2009;44(5):953–6.
8. Rimon A, Daneman A, Gerstle JT, et al. Omental infarction in children. \textit{J Pediatr.} 2009;155(3):427–31.