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CASE REPORT

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Hidden hemorrhage: A case of idiopathic omental hemorrhage causing spontaneous hemoperitoneum

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Abstract

Idiopathic omental hemorrhage (IOH) is a rare and underexplored entity in current medical literature. Most patients are male, aged 20–65 years, presenting with abdominal pain. Like most presentations of active intra-abdominal bleeding, recognition, stabilization, and definitive management are key. Expedited diagnosis and treatment of this condition is imperative as mortality rates can exceed 30% in cases due to delays of care. Presented here is a case of a young male with abdominal pain and recurrent emesis, ultimately diagnosed with bleeding from the greater omentum. He had been discharged from the emergency department the previous day. This patient's presentation highlights the importance of having high clinical suspicion for IOH in patients with recurrent or intractable nausea and emesis with persistent abdominal pain and utilizing advanced imaging for unexplained symptoms.

1 | BACKGROUND

Idiopathic omental hemorrhage (IOH) is an extremely rare gastrointestinal condition that has only previously been presented in case reports.[1,2] Common causes of omental hemorrhage include trauma, arterial aneurysm, vasculitis, and neoplasm[2,3] This potentially fatal condition typically arises from a spontaneous tear of intraperitoneal vessels.[3] Symptoms of IOH include severe, sudden onset abdominal pain, nausea, vomiting, or diarrhea, with or without signs of acute abdomen.[4–7] Since these symptoms are nonspecific, IOH can be misdiagnosed, and appropriate care delayed.

Ultrasound remains the gold standard for identifying acute intraperitoneal hemorrhage in the unstable patient, while computed tomography allows for localizing the source of the bleeding more easily while simultaneously eliminating other causes of the presenting symptoms.[2] The initial management of a patient presenting with symptoms of IOH is to initially correct hemodynamic instability.[7] Once stabilized, swift intervention in the operating room commonly involves a complete or partial omentectomy or a vessel ligation.[8] Expedited diagnosis and treatment of this condition is imperative as mortality rates can exceed 30% in cases due to delays of care.[9] While early diagnosis and treatment generally have a positive prognosis, possible complications can include hemorrhagic shock or intra-abdominal infection, leading to the high mortality of this condition.

1.1 | Case

A 29-year-old male with a past medical history of asthma and hypertension presented to the emergency department (ED) after waking up at night with nausea and vomiting, which persisted throughout the day. He reported cramping abdominal pain that was worse with vomiting. He did report frequent marijuana use but denied any history of similar presentations. Vital signs were blood pressure 118/90, heart rate 140, respiratory rate 18, temperature 36.6°C, and pulse oximetry 100% on room air. On examination, his abdomen was soft with some

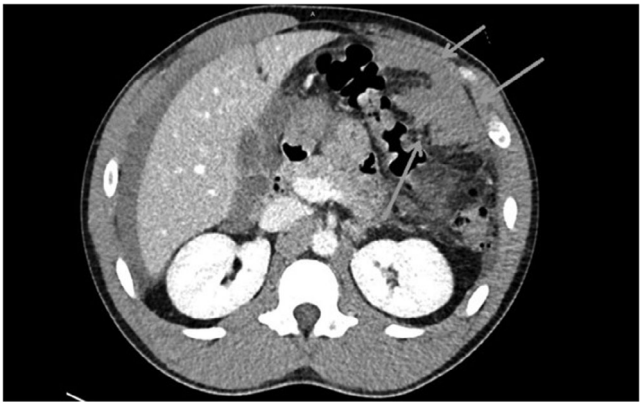

FIGURE 1 Cross sectional computed tomography (CT) scan of patient's abdomen showing idiopathic omental hemorrhage (IOH).

epigastric tenderness. Laboratory studies were significant for leukocytosis of 15.4 × $10^3/\mu$L and normocytic anemia with hemoglobin of 10.2 g/dL. Comprehensive metabolic panel and lipase were within normal limits. No previous laboratory values were available for comparison. Patient was treated with morphine 2 mg intravenous and ondansetron 4 mg intravenous. On reevaluation, the patient had significant improvement in his symptoms, his heart rate had improved to 102 bpm, and he was discharged home.

The patient returned to the ED the next day and reported significant continued vomiting and diffuse abdominal pain. Vital signs were heart rate 140, blood pressure 140/82, respiratory rate 20, oxygen saturation 99% on room air, and temperature 36.8°C. His abdomen was soft, non-distended, but now it was diffusely tender. The patient was treated with a 1 L bolus of lactated ringers with dextrose (5%), haloperidol 2.5 mg IV, famotidine 20 mg IV, and diphenhydramine 25 mg IV with suspicion of cannabis hyperemesis syndrome. His leukocytosis had slightly increased from 15.4 to 16.1 × $10^3/\mu$L, and his hemoglobin dropped from 10.2 to 8.9 g/dL. On reevaluation, the patient reported significant improvement in nausea and vomiting after receiving the medications, but no improvement in abdominal pain. Due to persistent pain, computed tomagraphy scan of the abdomen and pelvis with IV contrast was ordered, which showed free fluid concerning for spontaneous hemoperitoneum without an obvious source (Figure 1).

General surgery was consulted and the patient was immediately taken to the operating room for exploratory laparotomy due to concern for spontaneous hemoperitoneum versus perforated viscus. Intraoperatively, they found 500 cc of old blood and a large baseball-sized blood clot over the greater omentum. The bleeding appeared to be from the omentum itself, as the liver, gallbladder, spleen, and colon all appeared to be healthy. The greater omentum was thickened in appearance, with small blood clots but no active arterial bleeding appreciated. Several dilated omental vessels were found and cauterized. No obvious arterio-venous malformation was noted. Intraoperative esophagogastroduodenoscopy showed mild gastritis and moderate esophagitis, but no perforation, tear, or ulceration as the source of bleeding.

The patient was observed post-operatively on the surgical service. He did experience some delay in return of bowel function, likely due to bowel irritation secondary to hemoperitoneum but eventually returned without other complications. The patient was discharged home in stable condition on postoperative day 7. He followed up in the general surgery clinic on postoperative day 13 for abdominal staple removal without additional complications or concerns.

2 | DISCUSSION

Spontaneous hemoperitoneum is a rare but clinically significant presentation. It has a broad range of etiologies that have been previously classified as gynecologic, hepatic, splenic, vascular and coagulopathic[10] but IOH should also be considered. IOH is a rare and underexplored entity in current medical literature. A brief review on PubMed yields 14 pertinent English-language publications containing "idiopathic omental hemorrhage," all of which are case reports.[1–9,11–18] The majority of patients are male, aged 20–65, presenting with abdominal pain of varied locations and duration ranging from hours to days. Few patients had predisposing conditions. One patient had hemophilia B,[11] one on apixaban for a mechanical cardiac valve,[11] and one with multiple previous C-sections[1] and adhesions noted intra-operatively which may have contributed to omental bleeding.[1,11] Vessel malformation seen on imaging, intraoperatively, or on later pathology reports were present in the majority of cases. These anatomic changes are unpredictable and their prevalence in the general population is unknown.

Like most presentations of active intra-abdominal bleeding, recognition, stabilization, and definitive management are key. Patients may necessitate fluid resuscitation and blood products in addition to pain control. Utilization of Focused Assessment with Sonography for Trauma, or FAST examination, can quickly diagnose free fluid, but further imaging in the form of CT with or without arterial and venous contrast phases may be more useful for source identification and surgical planning. Abdominocentesis was used in one case report[12] but is not routinely indicated. The majority of cases reviewed required laparoscopy or laparotomy with ligation, embolization or omentectomy for bleeding control. One patient was successfully managed conservatively with close observation.[13]

Our patient presented with abdominal pain and recurrent emesis, and was ultimately diagnosed with bleeding from the greater omentum on day 2 of his symptoms. Notably, there was temporal ambiguity between his symptom onset and the hemorrhagic event. His recurrent emesis may have caused, or been the result of, the omental bleed. Although a pathology report to definitively declare vascular malformation is lacking, engorged omental vessels were seen during exploratory laparotomy. Increased intra-abdominal pressure during labor can lead to venous rupture.[10] With repeated emesis, a similar etiology may be at play in this case. Though our patient lacked the proliferation of vessels seen during pregnancy, it is possible he has undiscovered underlying vascular changes. A similar presentation was reported of a young female patient who had

omental bleeding after forceful retching, however the authors suspected she may have torn an adhesion.[1] Thankfully, our patient was successfully treated with vessel cauterization and evacuation of a hematoma in surgery, an outcome that was common in other case reports.

This patient's presentation highlights the importance of having high clinical suspicion for IOH in patients with recurrent or intractable nausea and emesis with persistent abdominal pain. It should be noted also that omental bleeds may not be hemodynamically unstable at initial presentation. Patients can have insidious underlying vascular malformations, which may rupture without notice or precipitating cause. This case exemplifies the importance of utilizing advanced imaging, such as CT, when an explanation for abdominal pain is unclear and intra-abdominal pathology cannot be readily ruled out, even in otherwise healthy and hemodynamically stable patients.

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