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Visual Case Discussion

Acute thrombosis of the superior mesenteric vein associated with back pain

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A 42-year-old male seven days status post right wrist arthroscopy bounced back to the Emergency Department (ED) with a chief complaint of back pain. Five days earlier, ED providers evaluated him for generalized abdominal pain, constipation, and nausea. Laboratory tests were only significant for elevations in alanine transferase (ALT) of 120 U/L and aspartate transferase (AST) of 69 U/L. An acute abdominal series was unremarkable. The patient was diagnosed with abdominal pain and constipation, prescribed magnesium citrate and bisacodyl suppository, and instructed to return for worsening symptoms. On ED return, the patient primarily complained of right-sided midback pain. He also endorsed fever, chills, right flank pain, urinary hesitancy, right-sided abdominal pain, nausea, and vomiting. Past medical history included a provoked lower extremity deep vein thrombosis with embolization to the pulmonary vasculature within the past year. Vital signs were pulse-84, respiratory rate-18, blood pressure-140/88, temperature-36.7, pulse oximetry-99% room air. On exam, the patient was non-toxic appearing, in mild distress secondary to pain, and exhibited tenderness to palpation in the right upper quadrant (RUQ) of the abdomen with a positive Murphy's sign. Consequently, a formal RUQ ultrasound was performed and interpreted as normal. Laboratory tests were significant for the following results: white blood cell (WBC) count of 12.1; ALT of 49 U/L; and 5 red blood cells on urinalysis microscopy. Therefore, a computed tomography (CT) renal stone protocol was obtained that demonstrated stranding about the superior mesenteric vein (Fig. 1). Radiology recommended a CT

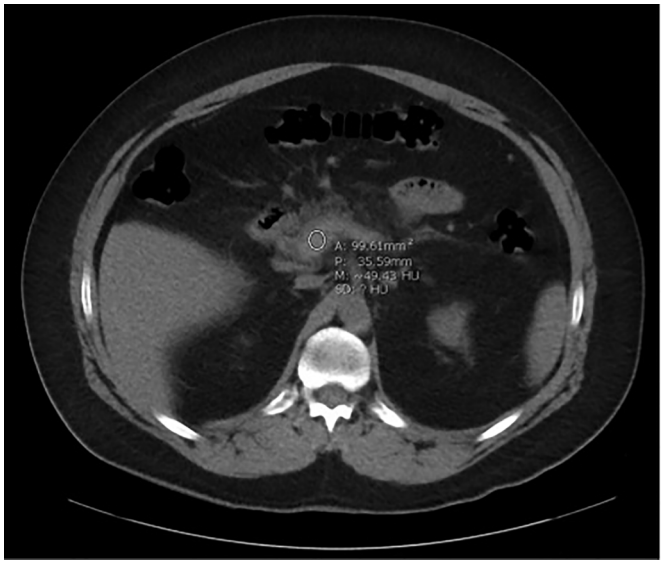

Fig. 1. CT abdomen without contrast displays inflammatory stranding about the confluence of the superior mesenteric and splenic veins. Additionally, inflammatory changes are seen surrounding the distal mesenteric vein.

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Fig. 2. CT abdomen and pelvis with IV contrast displays venous thrombosis involving the superior mesenteric vein and its branches, the portal splenic confluence with extension into the right portal vein, and splenic vein with associated inflammatory changes.

with intravenous (IV) contrast that revealed venous thrombosis of the superior mesenteric vein (Fig. 2). Vascular surgery was consulted, recommended administration of unfractionated heparin without a loading dose, and admitted the patient for treatment. The patient's hospital course was uncomplicated and he was discharged on oral anticoagulation seven days later with vascular surgery followup.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.visj.2019.01.002.

Questions

1. What is the first-line treatment for acute thrombosis of the superior mesenteric vein?
   a. Antiplatlet
   b. Surgery
   c. Fibrinolytic
   d. Anticoagulant

2. Which of the following are clinical manifestations of mesenteric vein thrombosis?
   a. Abdominal pain
   b. Diarrhea
   c. Hematemesis
   d. All of the above

Answers

1. Anticoagulant. Explanation: Treatment aim is similar to other venous thombosis in that the primary aim is to inhibit further clot formation and provide time for fibrinolytic activity. This is completed by heparinization once diagnosis is made. Antiplatlet can be used as adjunctive therapy in appropriate populations but is not first line. Surgery is reserved for complex cases involving ischemic bowel. Fibrinolysis would not be first line as there could be bleeding present with necrotic mucosa. Reference: D. Bergqvist and P.J. Svennson, Treatment of mesenteric vein thrombosis [electronic version], Semin Vasc Surg 23 (1), 2010, 65-68, doi: 10.1053/j.semvascsurg.2009.12.008.

2. All of the above. Explanation: The manifestations of MVT are dictated by clot size, location and extent of bowel-wall ischemia. All of the above symptoms may be present at some point in the clinical course. If transmural ischemia develops the patient can display hematemesis, hematochezia or symptoms of peritonitis secondary to bowel perforation. Reference: K.H. Lim, J. Jang, H.Y. Yoon and J. Park, Acute superior mesenteric vein thrombosis associated with abdominal trauma: a rare case report and literature review, Medicine 96 (47), 2017, e8863, doi: 10.1097/MD.0000000000008863 (Figs. 1 and 2).