



G8 Mesenteric Venous Thrombosis as a Cause of Rapid and Unexpected Death

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After attending this presentation, attendees will learn about mesenteric vein thrombosis as a rare cause of abdominal pain and death. Attendees will review a case report of a middle-aged woman that presented to the emergency room with abdominal pain and died approximately three hours after admission.

This presentation will impact the forensic science community by discussing the underlying causes of mesenteric vein thrombosis and reviewing the general work up for thrombophilic states in the context of the postmortem examination.

Mesenteric venous thrombosis is an unusual cause of abdominal pain and bowel ischemia that may not be initially suspected because of its vague clinical presentation. In this presentation, a fatal case of a woman with extensive abdominal venous thrombosis who died within a few hours of her arrival to the emergency department is reported.

A 45-year-old Hispanic female was transported to the hospital for abdominal pain of three days duration. Earlier that day, she had presented to an outside clinic with the same complaint, where she was diagnosed with a urinary tract infection and given an intramuscular injection of ceftriaxone. Throughout the day, her abdominal pain became increasingly severe requiring hospitalization. On admission, she was oriented but complaining of severe abdominal pain and nausea. She was afebrile and tachycardic. Physical examination showed a pale, distressed female with diffuse abdominal tenderness and moderate distension, without guarding or rebound. The patient was nulliparous, took no medication, and had no past medical or surgical history. She denied tobacco, alcohol, or illicit drug use.

Laboratory testing showed an elevated white blood cell count (36.0 K/mm^3) and anemia (hemoglobin - 6.9 g/dL ; hematocrit - 24.9%). Her platelet count was within normal range (246 K/mm^3). Additional laboratory studies were unrevealing. She was given intravenous fluids and morphine for pain. Antibiotics were ordered. The patient refused blood products on religious grounds. A CT scan of the abdomen was ordered; however, she suddenly became distressed, bradycardic, and hypoxic. Following intubation she became pulseless. Despite resuscitative efforts, she was pronounced dead two hours and 50 minutes after admission.

An autopsy was performed at the county medical examiner's office. She weighed 133 pounds and had a body mass index of 28.8 kg/m^2 . Diffuse ischemia and infarction were evident in the small intestine, from the ligament of Treitz to the proximal ileum, and in the cecum, ascending colon, and the corresponding mesentery. The spleen and right lateral lobe of the liver were also infarcted. Thrombi occluded the superior mesenteric vein, the portal vein, and its branches throughout the liver parenchyma, and the splenic vein. Thrombi were also noted in the smaller peripheral branches of the mesenteric vein. Additionally, the uterus was enlarged, weighing 625 grams, and contained multiple leiomyomata, the largest measuring 9cm. The left ovary was enlarged, weighing 550 grams and measuring 14cm in greatest dimension, and contained a benign cystic teratoma. The liver was not cirrhotic. Postmortem laboratory testing of hospital blood revealed mild to moderate prolongation of the prothrombin and partial thromboplastin time (PT - 14.9 seconds, PTT - 45.9 seconds) with an INR of 1.5. A lupus anticoagulant screen was negative. Upon further questioning of the family, the patient had no history of deep venous thromboses, abdominal trauma, oral contraceptive use, or prior malignancy.

Mesenteric venous thrombosis (MVT) has been described in the medical literature since 1895. It was first characterized as a clinical entity in a 1935 publication by Warren and Eberhard. Primary forms occur when there is no underlying etiology or associated condition. Secondary forms have an associated condition such as thrombophilia associated with antithrombin III deficiency, protein C or S deficiency, factor V Leiden or prothrombin gene mutations, and the antiphospholipid antibody syndrome. Other associated conditions include liver cirrhosis, prior abdominal trauma, asplenia, oral contraceptive use, malignancies, pancreatitis, intraabdominal infections, and congestive heart failure.

The signs and symptoms of MVT are nonspecific and mimic a large number of abdominal processes. Patients can present with diffuse abdominal pain of several days duration, abdominal distension, nausea and vomiting, and bloody diarrhea in cases that have already progressed to intestinal infarction. Laboratory studies are nonspecific; however, may reveal an elevated WBC count. Diagnosis of MVT is made by CT, MRI, or mesenteric angiography.

In this patient, the thrombosis was extensive, which led to visceral infarctions. No underlying etiology was established; however, coagulation studies were limited by postmortem samples. Venous stasis secondary to her enlarged uterus and left adnexal mass may have been factors. It has been suggested that MVT is a heterogeneous disease, whereby both hereditary and local factors may play a role in the development of the thrombosis. With an early diagnosis and appropriate medical and surgical intervention, the mortality of mesenteric venous thrombosis can be reduced.

Venous Thrombosis, Mesenteric Ischemia, Thrombophilia