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CLINICAL VIGNETTE

An Interesting Case of Right Lower Quadrant Abdominal Pain

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A 27-year-old male presents to the Emergency Department with a 24-hour history of right lower quadrant abdominal pain. The patient reports the pain is exacerbated by body movement and associated with nausea and two episodes of non-bloody, non-bilious emesis. No fever or chills. No diarrhea, constipation, or urinary symptoms. No prior similar history. Past Surgical and Medical histories are essentially negative.

Physical Examination

Alert and Oriented x 3, obviously uncomfortable, otherwise in no acute cardiopulmonary distress

Vital Signs: BP 123/70, Pulse 87, Temp 98.3°F, Respiratory Rate 16

His exam was unremarkable except for ABDOMEN; Obese, soft, diminished bowel sounds. Palpation revealed moderate right lower quadrant tenderness *with* guarding and variable rebound,

Positive Rovsing's and Positive Psoas signs. No masses, hernias or hepatosplenomegaly. No costovertebral angle tenderness

GENITOURINARY: No testicular tenderness or swelling

Labs

CBC, CMP, UA unremarkable, WBC count 9.4 without left shift

ED Course

Patient required IV morphine for pain control and IV ondansetron for nausea.

At this point, our weighted differential diagnosis included appendicitis as the most likely etiology of the patient's symptoms, but we also considered diverticulitis, mesenteric adenitis, small bowel obstruction (lower likelihood in light of no prior surgical history), mesenteric ischemia (however no overt risk factors for such), ureterolithiasis/renal colic (less likely due to negative UA), iliopsoas abscess/hematoma or rectus sheath hematoma (no risk factors, no fever, not on anticoagulants).

Because of concerning symptoms as well significant right lower quadrant tenderness on examination and despite the absence of abnormal labs, a **CT Abdomen and Pelvis with IV contrast** was ordered and resulted as "A rounded area of fat attenuating structure is seen within the right lower quadrant demonstrating adjacent inflammatory changes. This is situated immediately contiguous with the sigmoid colon, without diverticuli visualized. Findings are most suggestive of Epiploic Appendagitis. Normal appendix is visualized, no significant intraabdominal or pelvic adenopathy."

His pain was controlled with morphine, nausea controlled with the ondansetron and he was discharged home in stable condition with prescriptions for oral hydrocodone with acetaminophen, ibuprofen and ondansetron, as needed.

Discussion

Epiploic appendages, anatomical structures first described by Vesalius as "Appendices Epiploicae" in 1543, are small peritoneal serosal fat pouches of the colon which are supplied by 1 or 2 small end arterioles accompanied by a single venule.¹ They are distributed throughout the entire colon, but tend to cluster in the cecal and sigmoid regions.² They are generally larger in size and more abundant in the transverse and left sided colon (4:1 compared to the right side). They typically number 50-100 in the average person, and are between 0.5 to 5cm in length.

Pathophysiology

Epiploic Appendagitis (EA) is caused by a twisting, kinking or stretching of epiploic appendages along their long axis with impairment of vascular supply and subsequent venous thrombosis and necrosis of the appendage.³ Because of the aforementioned anatomic distribution of appendages, patients who develop EA universally present with abdominal pain, typically of the lower abdomen, left sided > right. It is usually localized and acute in onset (hours to days) and can be associated with rebound tenderness. Nausea and vomiting *may* be present. The WBC count is typically normal. It is rare for the patient to have fever. The patients are more commonly male. Then mean age of occurrence is mid-40's (range 12-80 years). There are no predisposing factors other than gender.

Radiography

Prior to the evolution of CT scanning, EA was typically an incidental diagnosis made intra-operatively during exploratory laparotomy. With advancement of CT imaging technique and resolution, this diagnosis is now almost always made *prior to* an unneeded surgical exploration, and today is treated as a benign and self-limited condition. The classic and unique contrast enhanced CT appearance of EA is that of a well-defined, rounded or ovoid focus of paracolic fat enclosed by a higher attenuation rim (the “hyperattenuating ring” sign), with adjacent edema/fat stranding. Occasionally a small “central dot” representing a thrombosed vessel will be noted in the appendage.⁴⁻⁷ It can sometimes be detected by ultrasound as an oval, noncompressible hyperechoic mass.

Clinical Gems

The disease is almost always self-limiting and is treated with opiate analgesics and NSAIDS on an outpatient basis. Antibiotics do not play a role in management. Symptoms generally resolve in 3-14 days. Surgical intervention is almost never indicated, save for isolated cases associated with complications such as abscess formation, intussusception, bowel obstruction or recurrence. Importantly, since RLQ pain has the highest Likelihood Ratio (LR(+)) = 8) of any symptom or laboratory result in patients with acute appendicitis, pursuing this diagnosis with CT imaging is often appropriate.^{8,9}

Summary

Epiploic Appendagitis (formerly Appendagitis Epiploica) is something of a “red-herring” condition that should be added to clinicians’ differential diagnosis of patients who present for evaluation with lower abdominal pain. It is not a diagnosis that is typically made clinically. In this era of multi-slice, high-resolution CT technology, it is primarily a radiographic diagnosis that, as with mesenteric adenitis, is made to the exclusion of more clinically significant pathology. In retrospect, this patient did not have the classic vague visceral pain that then localizes somatically as is common with acute appendicitis. The pain was focal and relatively abrupt in onset, typical of an EA presentation. The most satisfying part of making this diagnosis is that the patient generally arrives in significant discomfort and distress, with concern for an abdominal catastrophe, but typically, and often unexpectedly, is able to be discharged home to fully recover *without* surgical intervention.

Hyperattenuating Ring Sign:



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