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Mesenteric Ischemia Presenting as Acalculous Cholecystitis: A Case Review of a Rare Complication and Aberrant Anatomy

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Abstract : Introduction: Mesenteric ischemia is an uncommon condition that can be challenging to diagnose in the acute setting, with the potential for significant morbidity and mortality. Very rarely has acute acalculous cholecystitis been described in the setting of mesenteric ischemia. Case: This was the case in a 78-year-old male, who initially presented with clinical and radiological evidence of small bowel obstruction, thought likely secondary to malignancy. The patient had a 6-week history of anorexia, worsening lower abdominal pain, and ~30kg of unintentional weight loss over a 12-month period and a CT- scan demonstrated a transition point in the distal ileum. The patient became increasingly hemodynamically unstable and peritonitic, and an emergency laparotomy was performed. Intra-operatively, however, no obvious transition point was identified, and instead, the gallbladder was markedly gangrenous and oedematous, consistent with acalculous cholecystitis. An open total cholecystectomy was subsequently performed. The patient was admitted to the Intensive Care Unit post-operatively and continued to deteriorate over the proceeding 48 hours, with two re-look laparotomies demonstrating progressively worsening bowel ischemia, initially in the distribution of the superior mesenteric artery and then the coeliac trunk. On review, the patient was found to have an aberrant right hepatic artery arising from the superior mesenteric artery. The extent of ischemia was considered non-survivable, and the patient was palliated. Discussion: Multiple theories currently exist for the underlying pathophysiology of acalculous cholecystitis, including biliary stasis, sepsis, and ischemia. This case lends further support to ischemia as the underlying etiology of acalculous cholecystitis. This is particularly the case when considered in the context of the patient's aberrant right hepatic artery arising from the superior mesenteric artery, which occurs in 11-14% of patients. Conclusion: This case report adds further insight to the debate surrounding the pathophysiology of acalculous cholecystitis. It also presents acalculous cholecystitis as a complication of mesenteric ischemia that should always be considered, especially in the elderly patient and in the context of relatively common anatomical variations. Furthermore, the case brings to attention the importance of maintaining dynamic working diagnoses in the setting of evolving pathophysiology and clinical presentations.

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