A Case of Spontaneous Splenic Rupture after a Hemicolectomy on Anticoagulation

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Introduction

Atraumatic splenic rupture (ASR) is rare. The incidence is considered unknown although one study suggested in cases of splenic rupture approximately 3.2% are spontaneous, with a mortality of around 12%. The cause of ASR is often pathological, but iatrogenic causes have been demonstrated. Severe splenomegaly is the most common cause with etiologies including infections (e.g., mononucleosis), leukemia, inflammatory causes, medications (e.g., anticoagulation) and iatrogenic causes. The cause of ASR was likely multifactorial. This patient had a complex history of neoplasm, inflammation secondary to appendicitis and intra-abdominal abscess, Afib with anticoagulation and hemicolectomy. Inflammation, anticoagulation and iatrogenic causes may have played a role in the rupture of this patient's spleen. Analysis of definitive etiology is limited due to the complexity of care given.

Figure 1: Large splenic hematoma



Case

The patient, a 66-year-old female smoker with hypothyroidism status post hysterectomy came into the emergency department with a three-day history of worsening right upper quadrant abdominal pain. She was hemodynamically stable on arrival. Abdominal ultrasonography showing cholelithiasis with positive murphy sign, without wall thickening or fluid collection. Surgery was consulted for symptomatic cholelithiasis, and cholecystectomy was planned. Upon entering the abdomen, there was purulence throughout. After careful isolation of the gallbladder, it was unlikely source. Upon careful exploration, an acutely perforated appendix was found, and a subsequent appendectomy was performed.

Her postoperative period was complicated with new onset AFib with RVR, dilated cardiomyopathy, and heart failure. Given her history, an unfractionated heparin drip was started. On hospital day six, her leukocytosis persisted and was thought to be due to multiple intra-abdominal abscesses. IR was consulted to drain the abscesses. On hospital day 10, pathology returned with appendiceal goblet cell adenocarcinoma. A right hemicolectomy with side-to-side ileocolic anastomosis was performed on hospital day 12. The patient tolerated the procedure well. On hospital day 22, the patient went for a cardiac cath for three-vessel coronary artery disease. She was found to have heart failure with an EF of 19% After cardiac catheterization, the patient transitioned from heparin to apixaban.

Three days after her cardiac catheterization and twelve days after hemicolectomy, she had left upper quadrant pain with radiation to her left shoulder. She was diaphoretic and hypotensive. Post-catheterization myocardial infarction was worked up and ruled out. A CT abdomen and pelvis (Figure 2) demonstrated a large splenic hematoma with rupture and hemoperitoneum. The patient was taken for emergent open splenectomy. The abdomen was explored over one liter of hemoperitoneum and a ruptured spleen. The spleen was medialized by releasing the splenophrenic and splenocolic ligaments and the splenic hilum was stapled. Hemostasis was then achieved. The patient required two units of pRBC and one unit of FFP. After the case, the patient was hemodynamically stable.

The patient was placed in the ICU. She was monitored with serial hemoglobin and hematocrit. She received another three units of pRBCs (total of five given). Necessary post-splenectomy vaccinations given on hospital day 30. The remainder of her hospital stay was uncomplicated with discharge to a long-term acute care center on hospital day 31.

Conclusion

Splenic rupture in this patient is likely multifactorial

- History of goblet cell adenocarcinoma (inflammatory)
- Subsequent hemicolectomy (iatrogenic)
- appendicitis with rupture (inflammatory)
- Multiple intra-abdominal abscesses (inflammatory)
- afib with therapeutic apixaban (anticoagulative)

The complexity of care given prevents a definitive cause from being defined. Caution with anticoagulation in the post-operatively of a hemicolectomy should be considered. Careful monitoring of newly developing symptoms may address the atraumatic splenic rupture earlier.

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