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Splenic rupture as a complication of colonoscopy

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Splenic rupture is a rare but potentially lethal complication of colonoscopy. We report a 66-year-old man who developed abdominal pain 6 hours after diagnostic colonoscopy. His clinical status deteriorated rapidly. Splenic rupture was identified at laparotomy. He recovered after surgery. [*Indian J Gastroenterol* 2005;24:264-265]

Perforation and hemorrhage of the colon are the most common complications of colonoscopy.[1] Less commonly reported complications include pneumothorax, pneumomediastinum, volvulus, hernia incarceration, retroperitoneal abscess and emphysema, bacteremia, endocarditis, vasovagal reaction, and bronchospasm.[2] Splenic rupture is a rare but potentially lethal complication.[3]

A 66-year-old man presented to the emergency department with history of left upper quadrant abdominal pain, worse with deep inspiration, 4 hours prior to admission. The patient had undergone outpatient colonoscopy for evaluating cause of anemia, 10 hours prior to admission. The procedure could not be completed due to colon redundancy. It had shown multiple telangiectasias throughout the colon. Six hours after colonoscopy he developed left upper quadrant abdominal pain associated with vomiting.

Past medical history was significant for hypertension, ischemic heart disease and left-sided stroke. He was a cigarette smoker, and had received atenolol, diltiazem, ASA, nitrocantin, and warfarin. Upper GI endoscopy, performed for chronic anemia, showed gastritis and gastroesophageal reflux disease.

Examination revealed an acutely ill man with blood pressure 80/60 mmHg, pulse rate 100 beats/min, respiratory rate 26 per min, and normal temperature. The abdomen was diffusely tender with hypoactive bowel sounds. The rectum was empty. *Investigations*: WBC 6800/mm^3; hemoglobin 7.4 g/dL (value was 10.1 g/dL 1 month ago), and platelet count 79,000/mm^3. Coagulation studies were marginally deranged; blood chemistry was normal.

After resuscitation, laparotomy was done. There was no evidence of colonic perforation, but the spleen showed multiple lacerations. Splenectomy was performed. The 80-gram spleen had multiple lacerations on its medial aspect. Histology showed small and medium-sized vessels with hyaline arteriosclerosis, compatible with long-standing hypertension.

Six days after surgery he developed retrosternal pain with sweating. ECG revealed ST-segment elevation in the inferior and posterior leads associated with elevations of troponin I and CK-MB. The patient was transferred to the CCU and received appropriate care. He recovered uneventfully and was discharged 2 weeks after admission.

Wherry and Zehner[3] reported the first case of splenic rupture after colonoscopy. Splenic rupture is an extremely uncommon complication of colonoscopy; the overall incidence is 0.004%. Although several mechanisms have been suggested,[4] splenic rupture has been reported in cases in which no problems were encountered, the entire colon was visualized, and no biopsy or polypectomy was performed. The complication rate of colonoscopy was not related with either the level of experience or the number of prior or annual colonoscopies.[2]

Most patients with splenic rupture exhibit the usual features of intra-abdominal hemorrhage. However, asymptomatic rupture of the spleen after colonoscopy has been reported.[5] In the vast majority of cases, pain begins within 24 hours after the procedure, but rarely can occur several days after the procedure.[6] A standard chest radiograph should be done first to rule out perforation. Abdominal CT is sensitive and specific and may help decide which patient needs surgery or can be managed nonoperatively as in closed subcapsular hematoma.[6] A bedside ultrasonography can be useful for quickly identifying free fluid in the abdomen in the unstable patient, although gas in the bowels after colonoscopy may limit its usefulness.

After resuscitation, the hemodynamic status of the patient, along with the findings on abdominal CT, will determine the best course of management for the individual patient.

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Ectopic pancreatic tissue mimicking ampullary tumor

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Ectopic pancreas is an anomaly in the fusion of the two pancreatic buds where an ectopic rest develops at a place away from the normal site. We report a 70-year-old lady who presented with obstructive jaundice; she was found to have an ampullary tumor highly suggestive of malignancy, for which she underwent pancreatico-duodenectomy. However, histology showed ectopic pancreatic tissue in the ampulla. [*Indian J Gastroenterol* 2005;24:265-266]

Heterotopic pancreas has no anatomic or vascular connection to the main pancreas and results from altered development of the two primitive pancreatic buds that fuse to form the uncinate-head and body-tail of the normal gland. This results in an ectopic rest being dropped from the dorsal pancreatic rudiment, away from the usual location of the body and tail of the pancreas.

A 70-year-old lady presented with upper abdominal pain and mild jaundice for 2 weeks. There was no history of fever or vomiting. There was no previous attack of upper abdominal pain. She was a known case of atrial fibrillation and hypertension on medications. The liver functions were deranged, with alkaline phosphatase 210 IU/dL and total bilirubin 6.5 mg/dL (direct 4.6). Ultrasonography and CT scan showed dilated common bile duct (CBD) with tapered distal end possibly due to an ampullary tumor, with no liver or distant metastasis. ERCP showed ampullary nodularity with dilated CBD and abrupt distal narrowing. Biliary cytology and biopsy from the ampulla showed highly dysplastic cells suspicious of carcinoma.

Fig: Heterotopic pancreatic tissue beneath ampullary mucosa (H & E, 10 X)

A decision to perform pancreatico-duodenectomy was taken. Intraoperatively, the liver was normal; there was no ascites or evidence of distant metastasis. Proximal jejunum showed a lesion resembling an extra-pancreatic rest. In the postoperative phase the patient developed atrial fibrillation on the second day, which was treated with medications. She recovered uneventfully thereafter.

Grossly, the ampulla showed evidence of nodularity. The CBD showed a stricture in the distal 1 cm. On microscopy, ampulla showed ulceration in the epithelium. Proliferation of mucous glands with reactive changes was present. Beneath this, ectopic pancreatic tissue was seen within the muscularis propria in the region of the nodularity (Fig). Sections from the CBD showed fibrosis. Tissue from the jejunum showed ectopic pancreatic tissue within the smooth muscle.

The patient is asymptomatic one year later.

Ectopic pancreatic tissue (EPT) found during surgical explorations is rare, accounting for <0.5% of laparotomies, but it is found in 1%-2% of autopsies.[1] EPT is rarely found in children, possibly due to the tendency to remain small along with the slow growth rate. Most symptoms attributable to EPT are not associated with pancreatic disease. Hammarstromm and colleagues[2] described 10 cases of ampullary EPT.

Upper gastrointestinal hemorrhage and intestinal obstruction have been ascribed to EPT. Obstruction to the biliary tract has rarely been described.[1,3] The presentation of our case was similar to the one reported by Kubota *et al*.[4]

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