CASE REPORT

Mucinous Cystic Neoplasm in Heterotopic Pancreas Presenting as Colonic Polyp

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ABSTRACT

Context Pancreatic heterotopia in itself is rare in the colon and to the best of our knowledge a neoplasm arising in a heterotopic tissue in the colon has not been reported. We herein report a pancreatic cystic neoplasm arising from heterotopic pancreatic tissue in colon. **Case report** A 44-year-old lady presented with a history of lower abdominal colic, associated with mucoid loose stools 10-15 times/day. Fecal occult blood was positive on two occasions. On examination, a vague mass was palpable in the left upper quadrant of abdomen. Colonoscopy showed a polypoid growth at the splenic flexure of colon, which on biopsy was reported to be an inflammatory polyp. She underwent a laparoscopic converted to open left hemicolectomy. Post-operatively she developed a intra-abdominal collection which formed a controlled pancreatic fistula after percutaneous drainage. Histopathology revealed pancreatic heterotopia with pancreatic mucinous cystic neoplasm. **Conclusion** Despite advances in patient care, preoperative diagnosis of heterotopic pancreas is difficult.

INTRODUCTION

Pancreatic heterotopia in itself is rare in the colon and to the best of our knowledge a neoplasm arising in a heterotopic tissue in the colon has not been reported.

CASE REPORT

A 44-year-old female presented with lower abdominal colic since two months, associated with mucoid loose stools 10-15 times/day and weight loss of approximately 5 kg in two months. On examination, a firm mass was felt in the left upper quadrant moving with respiration. On further evaluation, she was found to be anemic with hemoglobin of 7.0 g/dL (reference range: 12-16 g/dL). Fecal occult blood was positive on two occasions. Colonoscopy revealed a large polypoidal growth near the splenic flexure of colon almost completely obstructing the lumen. Biopsy was suggestive of inflammatory polyp. Contrast enhanced computed tomography scan (Figure 1) showed an irregular enhancing mass lesion in the colon at the splenic flexure of colon. There was no evidence of significant lymphadenopathy or adjacent organ involvement. The differential diagnoses were adenomatous polyp of the colon or adenocarcinoma of the colon.

She underwent a laparoscopic converted to open left hemicolectomy. On laparoscopy, growth was felt at the splenic flexure with intense desmoplastic reaction extending into the pancreas; hence colonic mobilization could not be completed laparoscopically. On laparotomy, findings of laparoscopy were confirmed. Mass was shaved off

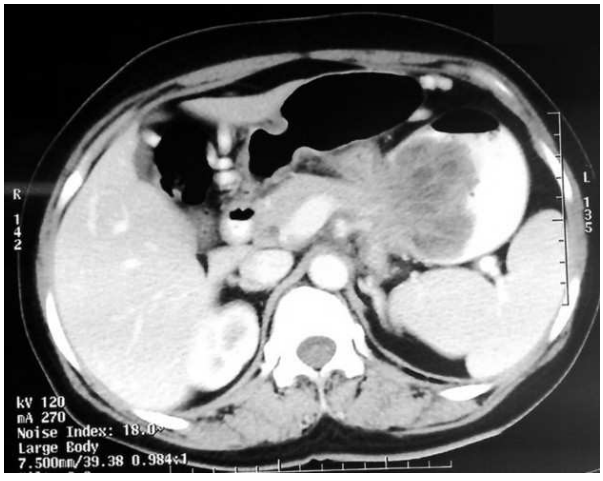

Figure 1. CECT of the abdomen revealed a polypoidal lesion in the splenic flexure of colon.

Received September 15th, 2013 – Accepted October 12th, 2013
Key words Choristoma; Colonic Neoplasms; Pancreas
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from pancreas. A left hemicolectomy followed by a side-to-side colocolic anastomosis was done. Cut section (Figure 2) revealed a large polypoid growth with overlying smooth mucosa on a long stalk at the splenic flexure. Margins were macroscopically free. Post-operatively she developed an external pancreatic fistula, which closed spontaneously. She also had intra-abdominal collection that was managed with culture-based antibiotics and a percutaneous drain placed in the pelvis.

Histopathology

On macroscopic examination the mucosal surface of the colon showed a pedunculated polypoid growth measuring 6x5x2 cm. Outer surface of growth was bosselated and smooth. Cut section of growth showed multi-loculated cystic areas filled with mucin separated by solid areas. Histology (Figure 3). showed mucosal granulation tissue and growth composed of cysts lined by columnar mucinous epithelium with basal mildly anisomorphic round to oval nuclei and abundant pale cytoplasm with apical mucin. At places the cysts showed small papillary projections in the lining epithelium displaying low to high-grade dysplasia with loss of polarity. The sub-epithelial spindle cells stroma was ovarian-like, dense and cellular. The stalk and base of the tumor showed ectopic pancreatic tissue composed of pancreatic acini, islet cells and ducts. No invasive tumor was present. Intra-operative biopsy from the desmoplastic tissue showed fibro-adipose tissue, no evidence of malignancy was noted.

DISCUSSION

Heterotopic (ectopic, aberrant) pancreas is defined as the presence of pancreatic tissue, outside its usual anatomical location and is devoid of any anatomical and vascular continuity with the pancreas proper.

The origin of heterotopic pancreas is most likely because of the several abnormalities of

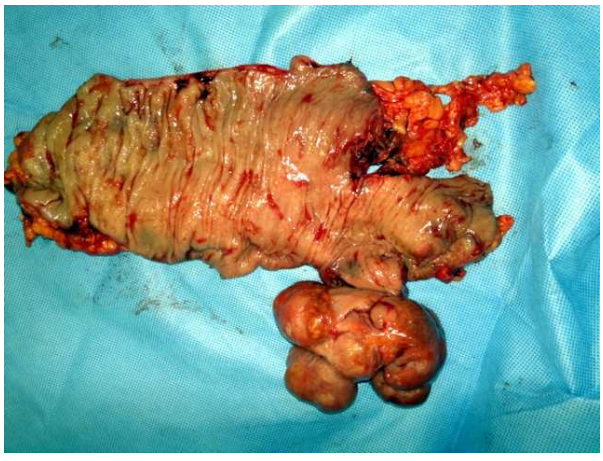

Figure 2. On cut section, pedunculated polypoidal mass arising from the splenic flexure of colon.

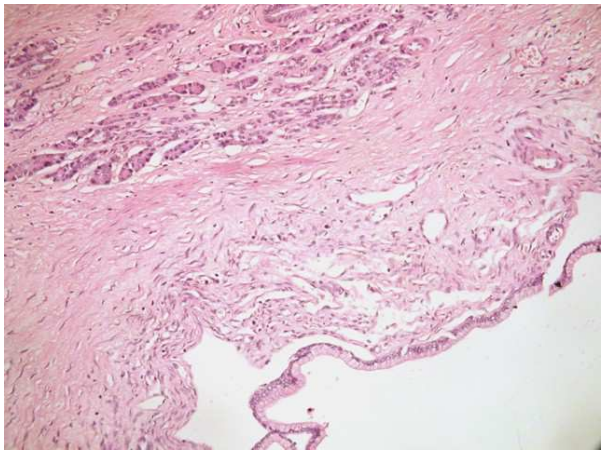

Figure 3. Section from colonic polyp showing a mucinous cystic neoplasm composed of cysts lined by cuboidal to columnar mucinous epithelium associated with pancreatic heterotopic tissue composed of pancreatic acini, islet cells and ducts. (Hematoxylin and eosin 200x).

embryological development, although the reason for their various locations cannot be clearly explained. Abnormal migration of the pancreas as it rotates around the gut may account for some of the heterotopic locations [1].

Ectopic pancreatic tissue may be found in approximately one case per 500 explorations of the upper abdomen or 0.6-13.7% of autopsies [2, 3]. They are found mostly along the upper gastrointestinal tract within the stomach, duodenum, and jejunum. It is found in much smaller proportions in the ileum and Meckel's diverticulum, and rarely in the esophagus, liver, gallbladder, omentum, umbilicus and colon [4, 5, 6]. Occasional findings of pancreatic rest in extra-gastrointestinal tract sites like fallopian tubes, lungs, mediastinum and brain have also been reported [7, 8, 9].

Histologically, heterotopic pancreas can contain acinar tissue, islets, ducts, or any combination thereof. Seventy five percent the rests are submucosal in location. They are seen as firm, yellow nodules, 2-4 cm in diameter, underlying the mucosa [10]. They may have a central umbilication, probably due to the presence of a vestigial duct. This appearance helps in its diagnosis endoscopically. In 1909, Heinrich *et al.* [11] classified heterotopic pancreas into three types: type I is similar to normal pancreatic tissue defined by the presence of ducts, acini and endocrine islets; type II contains a large number of acini, a few ducts and no islets; type III is characterized by the presence of numerous ducts, a few acini and no islets.

Most patients with ectopic pancreas are asymptomatic and diagnosis is incidental during an endoscopy or laparotomy. Occasionally they may present with abdominal pain, nausea and vomiting [10, 12, 13]. Peptic ulcer disease and upper

gastrointestinal bleeding also have been described. Ectopic pancreas may manifest with complications like perforation, bleed, obstruction and malignant transformation [14, 15, 16]. Malignant transformation of heterotopic pancreatic tissue has been mentioned in the liver, stomach and duodenum [16, 17, 18]. Pancreatic heterotopia in itself is rare in the colon [6] whereas malignancy arising in a heterotopic tissue in the colon has not been reported in the English literature to the best of our knowledge.

Conflicts of interest The authors have no potential conflicts to disclose

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