normal diet without pain. She was discharged on warfarin 5 mg per day and oral pentoxifylline. Three months later, she is asymptomatic. Repeat color Doppler study showed flow across the celiac artery. Barium study showed good distensibility and emptying of the stomach.

The commonest etiology of gastric angina is celiac artery compression, where 70% of patients may suffer from gastric angina.1 It is usually seen in the chronic form in patients with multivessel occlusion.3 Despite the high incidence of atherosclerotic occlusion of mesenteric vessels, most such patients are asymptomatic because of highly efficient collateral circulation.3

Our patient presented with acute manifestation due to celiac artery occlusion, probably due to embolic blockage of intramural branches of the left gastric artery in the antral region, secondary to thrombotic occlusion of the celiac artery. This can explain the failure of development of collaterals at the muscular and mucosal level.

Spiral CT angiography could establish the diagnosis in this case. Real-time duplex scanning is also useful. Arteriography is done to provide anatomic details for surgical therapy.4 Thrombolytic or anticoagulant therapy has been described for acute mesenteric thrombosis, but has not been reported for gastric ischemia as most cases present late. The present case presented early and hence responded to anticoagulation and pentoxifylline.

To conclude, our patient developed gastric angina following thrombotic occlusion of the celiac axis and responded to anticoagulation.

References

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Enteric duplication cyst associated with melanosis peritonei

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Melanosis peritonei is usually associated with benign cystic teratomas of the ovary. We describe a one-and-a-half-year-old girl with melanosis peritonei associated with enteric duplication cyst. Melanophages were seen in aggregates in and around the serosal blood vessels, nerve bundles, and scattered within the muscular wall of the cyst. Presence of hyperplastic nerve bundles associated with melanophages suggests their origin from the neural crest. [Indian J Gastroenterol 2000;19:140-141]

Key word: Melanophage

Enteric duplication cyst is a congenital anomaly, which can occur in any portion of the alimentary tract. Diffuse pigmentation of the peritoneum, known as melanosis peritonei, is an extremely rare condition. Only six cases have been reported to date, and four of these have been associated with benign cystic teratoma of the ovary.1-4 Only one case of melanosis peritonei has been associated with enteric cyst.5 We report a case of melanosis peritonei associated with enteric duplication cyst.

A one-and-a-half-year-old girl presented with one-month history of intermittent pain in the abdomen with abdominal distension and occasional constipation, suggestive of intermittent partial mechanical obstruction. There was no history of fever, vomiting, diarrhea or urinary symptoms. On examination, there was a palpable, non-tender, firm mass in the periumbilical region, measuring 2 cm x 2 cm. Bowel sounds were normal. There was no palpable organomegaly. There was no vertebral, skeletal or genitourinary anomaly.

With a clinical impression of extrinsic compression of the intestines by a mass, laparotomy was performed. On exploration, a 2 cm x 2 cm, non-communicating, spherical cyst was found in the ileo-cecal region, attached to the umbilicus by a fibrous cord. Multiple blackish nodules, 1-5 mm in size, were seen on the adjacent peritoneum as well as on the cyst wall. Regional lymph nodes were not enlarged. The cyst was excised. It was covered by serosa with multiple 1-5 mm blackish granules. Wall thickness was 0.8-1 cm and the lumen was empty. The patient had an uneventful postoperative course.

Histologically, the cyst had both colonic and small intestinal lining. In addition, there was neuromatoid hyperplasia on the serosal surface. These nerve bundles and blood vessels were surrounded by collections of macrophages containing brownish-black pigment (Fig). Similar cells were also seen scattered within the muscularis propria and submucosa. A moderate degree of lymphomatosic infiltrate was also seen. The pigment was found to be Schmorl's-positive; however Perl's prussian blue and PAS staining were non-contributory, thereby confirming the pigment to be melanin.

Enteric duplication cysts are found adherent to any portion of the alimentary tract and have smooth muscle wall and a mucosa which may be different from that of the adjacent segment of alimentary tract.5

In melanosis peritonei, the melanotic pigmentation can be a result of metastatic or primary malignant melanoma of the ovary or secondary to benign lesions. Till now, only six cases associated with benign conditions...
have been documented. In four cases macrophages containing melanin were present within the peritoneum possibly as a result of spillage from adjacent pathology like a benign cystic teratoma of the ovary. A case of melanomas peritonei associated with enteric duplication cyst adjacent to the esophagus has also been reported.

Pseudomelanosis is characterized by presence of lipomelanin within the lamina propria that is Schmorl's and PAS positive but Perls' prussian blue negative. The pigment in the present case was PAS-negative but Schmorl's-positive, thereby ruling out melanosis.

The distribution pattern of the pigment in the present case in the submucosa and muscularis propria suggests its formation in the cyst itself. Associated nevomaioid hyperplasia in the serosa surrounded by melanin-containing cells suggests an aberration in development of the neural crest. These types of enteric cysts are known to be associated with various neuro-vertebral defects, which was not seen in the present case.

References

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Paraganglioma of extrahepatic biliary tract causing obstructive jaundice

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We report a young woman with paraganglioma arising from the extrahepatic bile duct presenting with acute obstructive jaundice. The patient underwent excision of the gall bladder and extrahepatic bile duct with the tumor, and Roux-en-Y hepaticojejunostomy. She is asymptomatic 9 months later, with normal biochemical investigations and imaging. [Indian J Gastroenterol 2000;19:141-142]

Key words: Bile duct tumor

Paragangliomas of the extrahepatic biliary system are very rare, with only two case reports in the literature. We report a young woman presenting with obstructive jaundice due to paraganglioma arising from the extrahepatic biliary tract.

A 21-year-old woman was admitted after two episodes of pain in the right upper quadrant, 5 days prior to admission. Each episode lasted 6-7 hours and the patient required intravenous analgesics. On the fourth day of pain, she developed jaundice. She had no similar episodes in the past and there was no family history of gallstone disease. Physical examination was unremarkable but for mild icterus and tenderness in the right upper quadrant.

Investigations: Hemoglobin 11.5 g/dl, total leukocyte count 10,000/mm³, serum AST/ALT 70/59 IU/L, serum alkaline phosphatase 521 U/L. Ultrasonography revealed mild hepatomegaly with extrahepatic biliary radicles (IHBR) dilatation. The common hepatic duct (CHD) measured 9 mm proximally and could not be traced in the distal portion. Gall bladder was thick-walled, with no calculus or mass in the lumen. Contrast-enhanced CT (CECT) scan showed IHBR dilatation and a mass with whorled appearance in the region of the common bile duct (CBD) extending till its lower portion. ERCP showed a crescentic eccentric filling defect in the CBD near the junction of the cystic duct, with no contrast in the IHBR.

At surgery, a nodular mass, 4 cm x 2 cm, was seen arising from the CBD and extending till the lower end of the CBD. The mass was pushing the CBD anteriorly and was eroding into its posterior lateral wall. There were no lymph nodes. Excision of the gall bladder and extrahepatic bile duct along with the tumor was done. Roux-en-Y hepaticojejunostomy was done.

The resected specimen was a well-circumscribed mass measuring 4 cm x 2.5 cm x 2.5 cm. The external surface was smooth and cut surface was dark brown and friable. On histology, a