Extrapulmonary tuberculosis is rare and often difficult to diagnose. We report a case of duodenal tuberculosis, who presented with upper gastrointestinal symptoms. There was evidence of obstruction in the third part of duodenum (D3) on oesophagogastric endoscopy, barium meal follow through and CT scan of abdomen. On exploration there was thickening of D3 and D4 causing luminal obstruction. Resection of stricturous segment with end-to-side duodenojejunostomy was done. Biopsy of the diseased segment was tubercular. Antitubercular treatment was given to the patient for 6 months and he is doing well on follow up (1 year after surgery).

Duodenal tuberculosis being the rarest form of intestinal tuberculosis poses great difficulty in diagnosis. High index of suspicion supported by radiological investigation, exploratory laparotomy and histopathological examination of the tissue can only lead to a definitive diagnosis of this rare condition. Treatment is both surgical which involves resection or by-pass for an obstructive lesion and medical which includes antitubercular therapy.

Key words: duodenal tuberculosis, duodenal obstruction

Isolated duodenal tuberculosis (DTB) involvement is uncommon. Herein we report a case of isolated duodenal (D3-D4) tuberculosis who presented with symptoms of upper gastrointestinal (GI) tract obstruction.

CASE REPORT

A 23 year male patient presented with symptoms of fullness after meals since 6 months, which was associated with self-induced bilious vomiting every second or third day initially. These symptoms increased in severity gradually. Liquids were well tolerated than solid or semisolid food. There was no loss of appetite but there was significant weight loss of 16 kg in 6 months. He was treated with antacids and proton pump inhibitors during this time. Patient did not have any comorbid illness, no history of tuberculosis (TB) in the past, and no contact history of TB. Physical examination was unremarkable. There was visible peristalsis from left to right of abdomen but no palpable lump in the abdomen. Blood tests were within normal limits. Tubercular work up (ESR, Chest X-ray, Montoux test) was negative. Oesophagogastric endoscopy showed massively dilated stomach and duodenum with retained food and marked narrowing in distal duodenum and scope was not negotiable beyond. Biopsy revealed non-specific inflammation and acid-fast bacilli (AFB) stain was negative. Barium meal follow through study (fig. 1) showed persistent narrowing at the distal D3 with proximal dilatation of duodenum and stomach; however there was flow of contrast distally. CECT abdomen (fig. 2) was suggestive of duodenal obstruction at D3 in the midline with marked dilatation of stomach and proximal duodenum. There was no evidence of mass or mural thickening or mesenteric lymphadenopathy.

Patient was operated with provisional diagnosis of benign duodenal obstruction. On
Duodenal tuberculosis – a rare case report and review of literature

There was massive dilatation of the stomach and duodenum up to the left to SMA with thickened distal part of D3, D4 & DJ flexure causing luminal obstruction. There were multiple mesenteric and peripancreatic lymph nodes. There was no peritoneal disease. Ileocaecal region was normal. No other abnormality was identified intraperitoneally. Thickened duodenum and DJ flexure was resected and end to side duodenojejunostomy was done (fig. 3). Biopsy sample was reported as granulomatous lesion suggestive of tuberculosis. Anti-tubercular treatment (ATT) was given subsequently for 6 months. Patient is doing well on follow up, i.e. 6 months after completing ATT.

**DISCUSSION**

GI tuberculosis is rare (5%) and most commonly affects ileocaecal region. Duodenal tuberculosis has been reported in about 2.5% of these patients (1, 2). Third part is the most commonly affected site in the duodenum (1). Duodenal lesion may be intrinsic (ulcerative, hypertrophic or ulcerohypertrophic) or extrinsic (i.e. compression of duodenum by enlarged peri-duodenal lymph nodes from the outside) (2, 3).

Most of these patients are from endemic areas. They present in 3rd or 4th decade of life and duration of symptoms may vary from 2 days to 15 years. Increasing incidence has been reported in HIV infected individuals. Clinical manifestations of duodenal TB are non-specific and can mimic that of other GI diseases. They may present with dyspeptic symptoms (4), ulcer bleed, ulcer perforation (5), gastric outlet obstruction, or duodenal obstruction (6, 7). Pain (56.5%) and vomiting (60.8%) are common symptoms of duodenal TB which may be associated with fever, weight loss and palpable epigastric mass (33%). (8) Internal GI fistulation or fistulae with kidney and aorta have also been described (3, 9-13). They may also present with obstructive jaundice (13). Active pulmonary tuberculosis can be seen in 10-50% of patients. This patient presented with duodenal obstruction and did not have any evidence of pulmonary TB.

Diagnosis is difficult to establish on the basis of clinical features, endoscopy, and imaging as there are no pathognemonic features of this disease. Radiological features of duodenal TB are non-specific (14). Endoscopy may not be diagnostic as in this case and biopsies obtained show only nonspecific inflammatory changes (15). In this case both barium studies as well as CT scan abdomen were suggestive of duodenal obstruction which on exploration

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**Fig. 1.** Contrast study of Upper Gastrointestinal tract: Barium meal follow through study showed persistent narrowing at the distal D3 with proximal dilatation of duodenum and stomach; however there was flow of contrast distally.

**Fig. 2 a, b.** CECT abdomen suggestive of duodenal obstruction at D3 in the midline with marked dilatation of stomach and proximal duodenum.
turned out to be tuberculous with caseating granulomas. Differential diagnosis can be Crohn’s disease, neoplasia, or lymphoma.

Management of DTB is still medical primarily if there is tissue diagnosis. Majority respond to ATT. Balloon dilatation of stricture is successful and a good treatment option along with ATT. Laparotomy is usually necessary to diagnose the disease and for the relief of obstruction (15, 16). Obstruction is commonly relieved either by resection or by by-pass procedures. Surgical treatment should always be followed by a complete course of ATT.

CONCLUSIONS

Duodenal tuberculosis being a rarest form of intestinal tuberculosis poses great difficulty in diagnosis. High index of suspicion supported by radiological investigation, exploratory laparotomy and histopathological examination of the tissue can only lead to a definitive diagnosis of this rare condition. Treatment is both surgical which involves resection or bypass for an obstructive lesion and medical which includes anti-tubercular therapy.

REFERENCES