Duodenal Tuberculosis Mimicking Superior Mesenteric Artery Syndrome

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Abstract

Gastrointestinal tuberculosis is an important health problem in developing countries. Isolated duodenal involvement is uncommon. Duodenal tuberculosis can mimic various gastrointestinal diseases. Herein we report a case of isolated duodenal tuberculosis the presentation of which resembled superior mesenteric artery syndrome (SMAS) with obstruction of duodenum.

Introduction

Although gastrointestinal (GI) tuberculosis (TB) is a major health problem in India, involvement of the duodenum in the tuberculosis is considered rare. In fact, the duodenum is the least commonly affected segment of the small bowel. Clinically, duodenal TB mimics various other GI pathologies. There is a lack of specific clinical, radiological and endoscopic signs of duodenal TB. High index of suspicion supported by radiological investigation, exploratory laparotomy and histopathological examination of the tissue biopsy can only lead to a definitive diagnosis of this rare condition. We present a case of duodenal tuberculosis mimicking superior mesenteric artery syndrome (SMAS) or Wilkies syndrome.

Case Report

A 21 year old male presented with symptoms of pain and fullness after meals since 6 months off and on. Patient had immediate relief after bilious vomiting. Symptoms increased in intensity subsequently. Patient used to vomit initially solid food about 2 hrs after meals, liquids were well tolerated. However, lately he was not tolerating liquids also. Appetite was poor. Patient’s weight had come down from 60 Kg to 52 Kg. in 6 months. Motions were irregular. He was previously treated with antacids and proton pump blockers without much relief. There was no past history of tuberculosis.

Physical examination revealed dehydration. There was no lump in the abdomen. No jaundice. Routine blood investigations showed elevated BUN and serum creatinine with hypokalaemia and hyponatraemia. No anaemia, ESR was 25 mm. at 1 hour. Liver profile was normal. Patient was hydrated with correction of fluid and electrolyte balance. His renal profile came back to normal. His barium investigation showed extrinsic obstruction at the junction of second and third part of duodenum classically seen in SMAS (Fig.1). Endoscopy revealed ulcero-proliferative lesion completely obliterating the lumen. Biopsy taken showed tuberculous granuloma. CT scan abdomen showed extrinsic obstruction at the junction of second and third part of duodenum with multiple enlarged lymph nodes in the peripancreatic tissue (Fig. 2).

Patient was subjected to laparotomy for obstruction. On exploration there were multiple enlarged matted lymph nodes in the peripancreatic area as well as in small bowel mesentery suggestive of tuberculosis. Biopsy of lymph node was taken. Gastrojejunostomy was done to relieve obstruction. Histopathology of biopsy specimen confirmed tuberculosis. Postoperative period was uneventful and patient went home on the 7th day after the operation. He was put on antituberculosis drugs.

Subsequent follow-up showed complete recovery from symptoms and weight gain.

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Discussion

The incidence of GI TB in India is approximately 1% of all general hospital admissions.\(^2\) Duodenal involvement constitutes 2% of all GI TB.\(^3\) This uncommon duodenal involvement is supposedly related to the inhibitory influence of gastric acid on the mycobacteria, rapid transit time through the duodenum allowing for a reduced contact time and the comparative paucity of the lymphoid tissue in the duodenal segment as compared to the other segments of the gastrointestinal tract.\(^4\)

The clinical manifestations of duodenal TB are varied and non-specific. Our patient had features of outlet obstruction. Pain and vomiting are common symptoms of duodenal TB, weight loss may occur as in our case and some patients may present with upper GI bleeding.\(^5\) An epigastric mass may be palpable in 33% of patients.\(^6\) Active pulmonary tuberculosis can be seen in 10-50% of patients. Our patient did not have any evidence of pulmonary TB.

The disease may be either extrinsic or intrinsic or both.\(^7\) In the extrinsic type there can either be primary duodenal involvement or compression due to enlarged periduodenal lymph nodes. In our case the radiological features had pointed to a suspected SMAS. Three types of lesions are recognized with intrinsic involvement ulcerative, hypertrophic and ulcerohypertrophic. The third part is the most commonly affected site in the duodenum.\(^8\) Our patient had ulcerohypertrophic lesion.

According to one study,\(^9\) the contributions of enlarged lymph nodes and of intrinsic involvement (through ulcerations and cicatrisation) in the causation of duodenal obstruction are difficult to estimate. Most of the time the obstruction is the result of both the processes-extrinsic compression by enlarged lymph nodes and narrowing by intrinsic affection acting together. However, an individual process can cause obstruction in isolation.

Lymph node enlargement around the superior mesenteric artery (SMA) produces a sharp band-like cut-off of the D2-D3 portion and simulates the SMA syndrome. According to another study,\(^10\) the cause of the duodenal

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Fig. 1 : Barium study showing obstruction at D2-D3 junction mimicking SMAS.

Fig. 2 : CT scan showing paraduodenal lymph nodes and obstruction at D2 – D3 junction.
obstruction is more likely to be due to the caseating mass than the lymph nodes themselves.

In conclusion, duodenal TB should be considered as one of the differential diagnoses in patients presenting with features of duodenal obstruction and in patients with dyspepsia not responding to medical therapy in countries where TB is endemic. Duodenal TB lacks specific clinical and radiological features, barium studies help to localise and define the area of narrowing and ulcerations, which cause obstruction or dyspepsia. High index of suspicion should be kept in mind for early diagnosis and treatment.

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References