Surgery Journal 5 (3-4): 36-39, 2010
ISSN: 1816-3211

Gastroduodenal Tuberculosis: A Rare Cause of Gastric Outlet Obstruction

[1]Pankaj Gupta, [1]Sandeep Guleria, [2]Sandeep R. Mathur and [3]Vineet Ahuja
[1]Department of Surgical Disciplines, [2]Department of Pathology,
[3]Department of Gastroentology, All India Institute of Medical Sciences, New Delhi, India

Abstract: Gasrtroduodenal tuberculosis is a rare entity with few cases reported in literature. It poses a great diagnostic dilemma and has no clear management guidelines. We report a case of gastro duodenal tuberculosis in a 17 years old male patient who presented with features of gastric outlet obstruction. Oesophago-gastro-duodenoscopy (UGIE) revealed deformed pylorus with stricture in 1st part of duodenum. Abdominal CT showed distended stomach with transition in 1st part of duodenum without any mass lesion or significant lymphadenopathy. Endoscopic biopsy showed non-specific duodenitis. Exploratory laparotomy revealed puckered pylorus, enlarged juxta pyloric lymph nodes without any mass lesion. Intra-operative frozen section biopsy from juxta pyloric lymph node was suggestive of granulamatous inflammation. Truncal vagotomy with gastro-jejunostomy was done and juxta pyloric lymph nodes were sampled for histopathological examination. Final histopathological findings were consistent with features of tuberculosis. Patient was started on anti-tubercular therapy and was cured of the disease.

Key words: Gastroduodenal tuberculosis, gastric outlet obstruction, therapy, abdonied, mass lesion, India

INTRODUCTION

Tuberculosis (TB) is an endemic disease in India and with the advent of the Acquired Immune Deficiency Syndrome (AIDS); its incidence in the developed countries is also on the rise. Extra-pulmonary TB account for 10-15% of all cases but this incidence reaches 50% in patients with AIDS. Gastro-Intestinal tract (GI) is the 6th most frequent site of extra pulmonary TB after lymphatic, genitourinary, bone and joint, miliary and meningeal tuberculosis. Abdominal tuberculosis accounts for 0-8% of all hospital admissions in India. Tuberculosis (TB) can involve any part of the gastrointestinal tract. About 85% of abdominal TB cases manifest in the ileocecal region followed by the ascending colon, jejunum, appendix, duodenum, stomach, sigmoid colon and rectum. Gastro duodenal tuberculosis is a rare clinical entity with a reported incidence of 0.003-0.21% of all routine autopsies (Tromba *et al*., 1991).

In presence of pulmonary tuberculosis, incidence of gastro duodenal TB increases to 0.3-2.3% of autopsies (Sharma *et al*., 2000). Primary cases are rare with only a few cases reported in the literature (Amarapurkar *et al*., 2003; Kim *et al*., 2006; Wig *et al*., 2000; Lin *et al*., 1999; Gheorghe *et al*., 2002; Talukdar *et al*., 2006). About 0.4 million people in India are co-infected with TB and HIV. In areas where tuberculosis is endemic, diagnosis of duodenal tuberculosis must be kept in mind, particularly in patients with upper gastrointestinal obstruction and in those with peptic ulcer-like symptoms not responding to medical therapy. We hereby report a rare case of gastro duodenal TB where patient presented with gastric outlet obstruction.

Case report: A 17 years old male presented with complaints of upper abdominal pain, recurrent vomiting and dyspepsia for last 1 year. Pain was in epigastric region, colicky in nature, aggravated by food intake and relieved by vomiting. Vomiting was projectile in nature and contained food particles taken 24-48 h earlier. There was history of significant weight loss. There was no history of cough, fever, hemetemesis, haemoptysis, maelena or past history of tuberculosis.

General physical examination was normal. Abdominal examination reveled epigastric fullness with visible peristalsis, waves moving from left to right and increasing after ingestion of water and positive succession splash, suggestive of gastric outlet obstruction. Laboratory examinations and chest radiograph were normal. Oesophago-gastro-duodenoscopy (UGIE) revealed dilated stomach with food residue, grossly edematous and deformed pyloric ring with 1×1 cm active ulcer at pyloric ring and D1. The scope was not negotiable beyond (Fig. 1).

Corresponding Author: Sandeep Guleria, Department of Surgical Disciplines, 5th Floor, Teaching Block, All India Institute of Medical Sciences, New Delhi, India

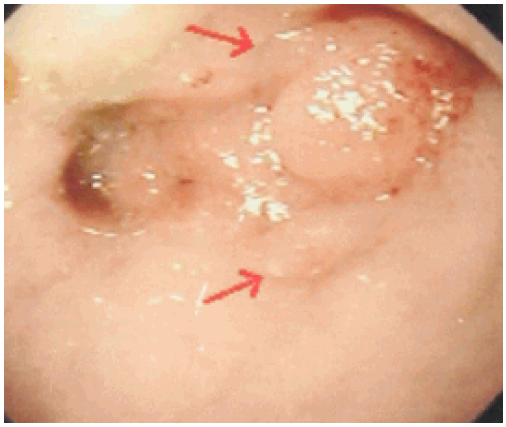

Fig. 1: Oesophago-gastro-duodenoscopy showing grossly odematous and deformed pyloric ring with 1×1 cm active ulcer

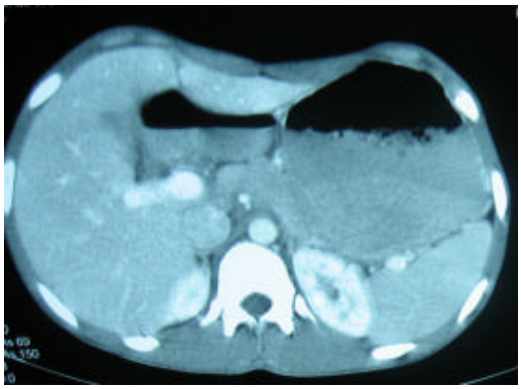

Fig. 2: CECT Abdomen showing over distended stomach with abrupt transition in the region of pyloric antrum

Endoscopic biopsy suggested features of mild non specific chronic duodenitis with no evidence of malignancy. Contrast enhanced abdominal CT showed markedly distended stomach with abrupt transition in the region at the first part of duodenum with no wall thickening, mass lesion or significant lymphadenopathy (Fig. 2). At exploratory laparotomy thickened and puckered pylorus was found with enlarged juxtapyloric nodes. Rest of the abdomen was normal. Truncal vagotomy with ante colic gastro-jejunostomy was done. Juxtapyloric nodes were taken for histopathological examination which showed multiple necrotizing epithelioid cell granulomas (Fig. 3). Patient developed gastroperesis in post operative period. Frucas jejunostomy tube was inserted for feeding which was removed 4 weeks later. Patient was put on four drugs anti-tubercular therapy, Rifampicin isoniazid, Ethambutol and Pyrizinamide. He has been on the follow up for the last 1 year and was cured.

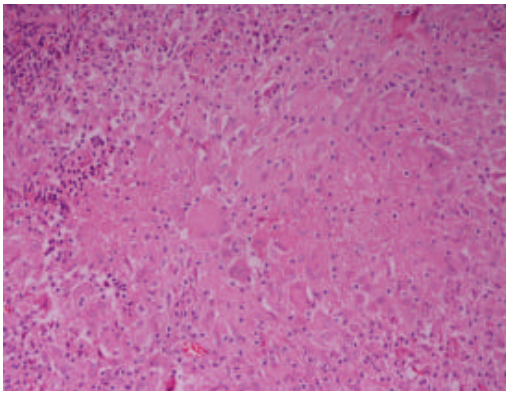

Fig. 3: Microphotograph of lymph node showing epithelioid granulomas, giant cell and foci of necrosis compatible with a diagnosis of tuberculous lymphadenitis (Hematoxylin and Eosin ×200)

DISCUSSION

TB is an important medical, social and economic problem in developing countries. According to the World Health Organization (WHO) in India alone there are 3-4 million new cases of TB every year, 2-5% of these are abdominal. It is estimated that there would be approximately 100-200,000 cases of abdominal TB in India every year. The commonest site for gastro-intestinal Tuberculosis (TB) is the ileo-caecal region Gastroduodenal TB is uncommon even in parts of world where TB is endemic. Stomach and duodenum each accounts for 1% cases of abdominal TB. Gastroduodenal TB usually occurs in immunocompromised patients especially those with HIV. In stomach, antrum and prepyloric regions are most common sites involved and duodenum is rarely involved (Subei *et al*., 1987). More than 80% of cases gastroduodenal TB is associated with pulmonary TB.

Rarity of gastroduodenal TB is due to bactericidal property of gastric acid, continuous motor activity of the stomach and scarcity of lymphoid tissue in gastric wall (Palmer, 1950). The possible routes of infection are direct invasion through the mucosa. The most likely route in primary gastroduodenal tuberculosis is haematogenous spread, lymphatic spread and spread from the serosa by continuity from adjacent structures, especially the lymph-nodes. Gastric tuberculosis is classified pathologically into ulcerative, hypertrophic, solitary or miliary tubercles, larger nodular foci and diffuse tuberculous gastritis. Duodenal tuberculosis is classified into Ulcerative, Hyperplastic, Enteroperitoneal and Infiltrative types. Duodenal obstruction in the case was probably due to

fibrous stricture caused by hyperplastic variety. Gastroduodenal tuberculosis may mimic peptic ulcer disease with symptoms like abdominal pain, vomiting and gastric outlet obstruction as occurred in the case. Gastric outlet obstruction is the most common presentation in most cases obstruction is due to extrinsic compression by tuberculous lymph node rather than by intrinsic tuberculous duodenal stenosis.

Other symptoms are weight loss, upper GI bleeding and fever. Disease may present with fistula formation with adjacent organs, there are isolated reports of bilio-duodenal (Chaudhary *et al*., 1989), aortoduodenal (Kodaira *et al*., 1997) and mesenteric artery duodenal fistula. Rao *et al*. (2004) and Gupta *et al*. (1988) reported largest series of 30 cases of duodenal tuberculosis (Berney *et al*., 1999).

About 22 patients (73%) presented with gastric or duodenal obstruction, obstruction was due to extrinsic compression by matted tuberculous lymph nodes in 17 cases whereas 5 patients had intrinsic duodenal strictures. About 8 patients (27%) presented with dyspepsia suggesting peptic ulceration.

In patients with dyspepsia, there were bulbar and post-bulbar ulcers accompanied by more widespread mucosal changes, induration and periduodenal lymphadenopathy. Two of these patients presented with hemetemesis and none had fistulae. Perforative peritonitis is rare due to very dense fibrosis around the lesion. Berney *et al*. (1999) reported a case of duodenal tuberculosis which presented as ulcer perforation (Chowdhary *et al*., 1999). Gastroduodenal TB may also simulate gastric carcinoma. Chowdhary *et al*. (1999) reported the rare concurrence of carcinoma and tuberculosis of stomach in the same patient.

Due to lack of pathognomonic findings of gastroduodenal TB on radiological studies (barium studies or CT) most of the time diagnosis is made only after surgery. Barium meal study reveals non-specific structural abnormalities. On CT there may be thickening of the gastric or duodenal wall associated with enlarged local lymph nodes.

Histological examination of the lesion is necessary for diagnosis. Endoscopic biopsy is positive in only one third of cases. This may be due the fact that tubercular granulomas are submucosal and endoscopic biopsies do not include submucosa routinely (Chazan and Aitchson, 1960). Bacilli are rarely isolated from gastric lavage (Chaudhary *et al*., 1989). Polymerase Chain Reaction (PCR) amplification of mycobacterial DNA from biopsy material or gastric lavage increases sensitivity. In the case also endoscopic biopsy showed features of non-specific duodenitis. Failure to respond to traditional ulcer therapy in a young patient should arouse suspicion. High index of suspicion is required in the presence of tubercular lesion elsewhere or past history of tuberculosis. TB is also probable diagnosis in patients with positive mountoux test with absence of TB in other organs and presence of fistula or sinus tract and contiguous gastric and duodenal lesions.

Gastro duodenal TB is a pauci-bacillary disease and microbiologic proof is not always possible. Acid fast bacilli are found in only 4-6% of the cases. Granulomas are found in 40% of abdominal tuberculosis patients and may be present in lymph nodes and absent in enteric lesions (Tandon, 1981). Pathognomonic features such as the presence of caseation may not be always present. Characteristic histological findings in the presence of suggestive clinical setting is sufficient to initiate anti-tubercular treatment.

Though, the treatment of gastoduodenal TB is primarily medical with anti tubercular drugs, most patient land up with surgery due to lack of accurate preoperative diagnosis. Surgery is reserved mainly for the treatment of complications if diagnosis is established as tubercular intestinal lesions including passable strictures responds satisfactorily to anti-tubercular therapy (Anand *et al*., 1998).

Pyloroplasty is rarely feasble due to intense fibrosis so bypass is generally required moreover, healing of tubercular lesion by antitubercular drugs may result in stenosis and recurrence of symptoms. Gastrojejunostomy with truncal vagotomy is the procedure of choice in patients with pyloroduodenal involvement; duodenojejunostomy is preferred in cases with distal duodenal involvement (Morirangthan *et al*., 2001). Surgery is followed by short-term chemotherapy. Rarely when presentation mimics malignancy resection may be done.

CONCLUSION

Gastroduodenal TB is indeed a diagnostic challenge and high index of suspicion is required for diagnosis. It should be considered in young patients with chronic ulcer disease and gastric outlet obstruction, especially in endemic zones and immunocompromised patients. Treatment is essentially medical. Surgery should be reserved for complications.

REFERENCES

Amarapurkar, D.N., N.D. Patel and A.D. Amarapurkar, 2003. Primary gastric tuberculosis-report of 5 cases. BMC Gastroenterol., 18: 3-6.

Anand, B.S, R. Nanda and G.K. Sachdev, 1998. Response of tubercular stricture to antitubercular treatment. Gut, 29: 62-69.

Berney, T., E. Badaoui, M. Totsch, G. Menth and P. Morel, 1999. Duodenal tuberculosis presenting as acute ulcer perforation. Am. J. Gastroenterol., 93: 1989-1991.

Chaudhary, A., A. Bhan, N. Malik, J.B. Dilawari and S.K. Khanna, 1989. Choledocho-duodenal fistula due to tuberculosis. Indian J. Gastroenterol., 8: 293-294.

Chazan, B. and J. Aitchson, 1960. Gastric tuberculosis. Br. Med. J., 2: 1288-1290.

Chowdhary, G.N., R. Dawar and M.C. Misra, 1999. Coexisting carcinoma and tuberculosis of stomach. Indian J. Gastroenterol., 18: 179-180.

Gheorghe, L., I. Bancila and C. Gheorghe, 2002. Antro-duodenal tuberculosis causing gastric outlet obstruction-a rare presentation of a protean disease. Rom. J. Gastroenterol., 11: 149-152.

Gupta, S.K., A.K. Jain, J.P. Gupta, A.K. Agrawal and K. Berry, 1988. Duodenal tuberculosis. Clin. Radiol., 39: 159-161.

Kim, S.E., K.N. Shim, S.J. Yoon, S.A. Jung, T.H. Kim, K. Yoo and H. Moon, 2006. A case of gastric tuberculosis mimicking advanced gastric cancer. Korean J. Int. Med., 21: 62-67.

Kodaira, Y., T. Shibuya, K. Matsumoto, K. Uchiyama, T. Tenjin, N. Yamada and S. Tanaka, 1997. Primary aortoduodenal fistula caused by duodenal tuberculosis without an abdominal aortic aneurysm: A report of a case. Surg. Today, 27: 745-748.

Lin, O.S., S.S. Wu, K.T. Yeh and M.S. Soon, 1999. Isolated gastric tuberculosis of the cardia. J. Gastroenterol. Hepatol., 14: 258-261.

Morirangthan, G.S., N.S. Singh and I.N. Bhattacharya, 2001. Gastric outlet obstruction due to duodenal tuberculosis: A case report. Int. Surg., 86: 132-132.

Palmer, E.D., 1950. Tuberculosis of the stomach and the stomach in tuberculosis: A review with particular reference to gross pathology and gastroscopic diagnosis. Am. Rev. Tuberc., 61: 116-130.

Rao, Y.G., G.K. Pande, P. Sahni and T.K. Chattopadhyay, 2004. Gastroduodenal tuberculosis management guidelines, based on a large experience and a review of the literature. Can. J. Surg., 5: 364-368.

Sharma, B.L., H. Prasad, D.K. Bhasin and K. Singh, 2000. Gastroduodenal Tuberculosis presenting with massive hematemesis in a pregnant woman. J. Clin. Gastroenterol., 30: 336-336.

Subei, I., B. Attar, G. Schmitt and H. Levendoglu, 1987. Primary gastric tuberculosis: A case report and review of literature. Am. J. Gastroenterol., 82: 769-772.

Talukdar, R., S. Khanna, N. Saikia and J.C. Vij, 2006. Gastric tuberculosis presenting as linitis plastica: A case report and review of the literature. Eur. J. Gastroenterol. Hepatol., 18: 299-303.

Tandon, H., 1981. The pathology of intestinal Tuberculosis. Trop. Gastroenterol., 2: 77-93.

Tromba, J.L., R. Inglese, B. Reiders and R. Todaro, 1991. Primary gastric tuberculosis presenting as pyloric outlet obstruction. Am. J. Gastroenterol., 86: 1820-1822.

Wig, J.D., K. Vaiphei, M. Tashi and R. Kochhar, 2000. Isolated gastric tuberculosis presenting as massive hematemesis: Report of a case. Surg. Today, 30: 921-922.