



Duodenal tuberculosis mimicking a malignant tumor - a case report

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ABSTRACT

Duodenal tuberculosis is very rare and accounts for only 1% of abdominal tuberculosis. We report a case of duodenal tuberculosis, which mimicked a malignant tumor. 18-year old boy was admitted with diffuse abdominal pain and constipation for 2-3 days, CT abdomen revealed duodenal wall thickening and nodules on the surface of liver, simulating duodenal carcinoma with liver metastasis. Since patient had presented with acute abdomen, he was referred to surgical service and underwent exploratory laparotomy with gastro-jejunostomy. Duodenal thickening and liver nodules were noted and biopsy revealed tubercular origin.

Keywords: Duodenal tuberculosis, liver nodules, tubercular granulomas

INTRODUCTION

Tuberculosis is a major health concern worldwide. The most common manifestation is pulmonary disease; however, involvement of gastrointestinal tract is also noteworthy. Intestinal tuberculosis usually involves the ileo-caecal region. Duodenum is the rare site for tuberculosis and is commonly the result of secondary spread from a primary pulmonary disease. A variety of factors has made it a growing health concern, including shrinking public health resources, weakened immune system; due to AIDS, increasing resistance to antibiotics and extreme poverty in many parts of the world.

Tuberculosis of gastrointestinal tract mostly affects ileo-caecal region. Duodenal involvement accounts for only 2.3% of tubercular enteritis.¹ Duodenal tuberculosis is a rare entity even in patients with advanced pulmonary or intestinal tuberculosis. Here we report a case of duodenal tuberculosis, which is extremely rare²⁻⁶, disseminated to liver, which mimicked a malignant tumour with secondaries in the liver.

CASE REPORT

18-year-old male, presented with symptoms of acute diffuse abdominal pain and constipation of 2-3 days. Physical examination revealed diffuse abdominal tenderness. There were no lymphadenopathies and rest of physical examination was unremarkable. Complete blood count was within normal limits. Chest X-ray was normal. Emergency esophago-duodenoscopy was showing mild surface erosion and thickened duodenal wall. CT abdomen was done, which showed 2nd and 3rd portion of duodenal wall thickening (*Fig 1*) with nodules on the surface of liver mimicking a malignant tumor in the duodenum disseminated to the liver (metastasis). No other signs or symptoms were associated. Patient had not received any medical consultation, as he had vague abdominal pain with acute episode of severe abdomen pain prompting a consultation with subsequent admission. Patient had unremarkable family history and had no other associated co-morbidities. He had no history of tuberculosis or exposure to the disease. Exploratory Laparotomy was performed and

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peroperatively thickened wall of 2nd and 3rd portion of duodenum and few nodules (greyish white) on the surface of liver were confirmed and no lymphadenopathy was noted. Biopsy from the duodenal wall thickening and nodules from the liver were taken which were sent for frozen sections for immediate peroperative diagnosis.

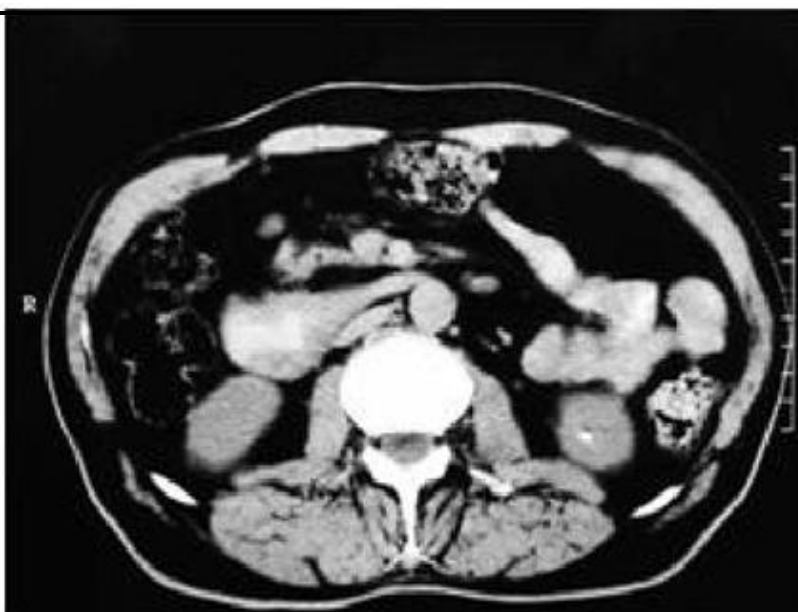


Figure 1. CT showing duodenal thickening

Frozen sections from both duodenal biopsy and liver nodule revealed the presence of well-defined epitheloid cell granulomas with surrounding dense inflammation and caseous necrosis. Granulomas had central areas of caseous type of necrosis surrounded by epitheloid cells, Langhan type giant cells, lymphocytes and plasma cells. So on frozen sections diagnosis of duodenal tuberculosis with dissemination into liver was made, negating the diagnosis of malignant tumor with metastasis into liver. Simultaneously, resected portion of duodenum

and nodules from liver were sent for complete histopathological diagnosis. Grossly duodenal wall was thickened, measuring 3x2 cm and thickness was 1.2 cm. The mucosa was rough and ulcerative and serosa was dull. On cut section, surface was granular. Microscopic examination of the section showed surface ulceration with dense chronic lymphoplasmacytic inflammation in the mucosa, submucosa, muscularis propria infiltrating up to serosa and presence of granulomas and caseous necrosis (*Figure 2 and Figure 3*).

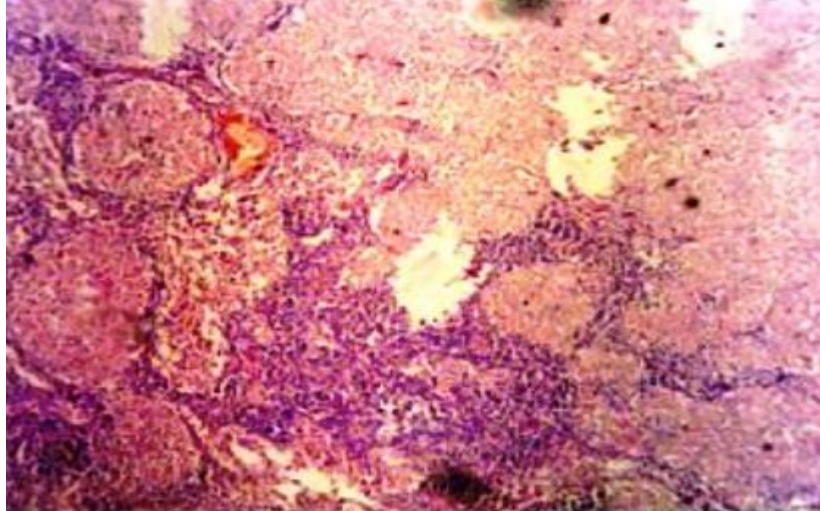


Figure 2. Low power (10x) showing presence of granulomas and caseous necrosis

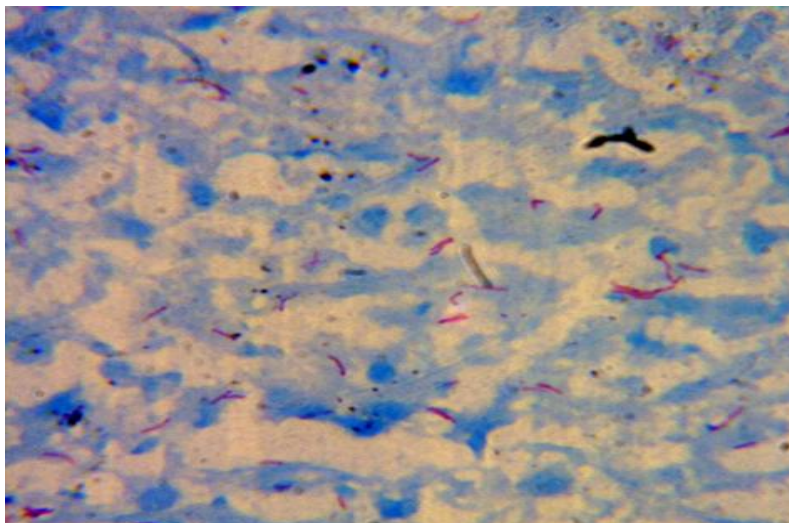


Figure 3. Z N stain showing numerous acid fast bacilli

In the usual haematoxylin and eosin stained sections epitheloid cells had pale pink granular cytoplasm with indistinct cell boundaries, often appearing to merge into one another. The nucleus was less dense than that of a lymphocyte and oval or elongate. Special stains like; Zeil-Nielson staining for AFB was done and proved positive (*Figure 4*). Wedge biopsy from liver nodule also revealed granulomas with caseous necrosis. The diagnosis of duodenal tuberculosis with dissemination into liver was made. Patient was

scanned for dissemination anywhere else but proved negative.

Patient underwent CT chest, MRI brain, bone marrow aspiration, and urine analysis for tubercular bacilli but no dissemination was observed anywhere else.

Patients had been put on antitubercular therapy and follow up is good.



DISCUSSION

Duodenal tuberculosis is as such a very rare entity and accounts for only 2.3% of tubercular enteritis. The disease may be extrinsic or intrinsic or both. In the extrinsic type, there can be either primary duodenal involvement or compression due to enlarged periduodenal lymph nodes. There are various types of lesions in the intrinsic involvement – ulcerative, hypertrophic and ulcerohypertrophic, enteroperitoneal and infiltrative types.⁹ The third part is the most commonly affected site in the duodenum.

The clinical manifestations of the duodenal tuberculosis are varied and non-specific. Our patient had features of diffuse abdominal pain and constipation and CT abdomen revealed duodenal wall thickening with nodules on the liver surface, so impression of duodenal malignancy with metastasis to liver was made. Exploratory Laparotomy was done where duodenal wall was thickened and mucosa was ulcerated with nodules on liver surface, all of which proved to be tuberculosis.

The radiological features of duodenal tuberculosis are non-specific. Endoscopy may also not be diagnostic at times as sometimes, it could show only non-specific inflammatory changes.⁸ Endoscopic biopsy is positive in 1/3 cases only due to fact that tubercular granulomas are submucosal and endoscopic biopsies do not include submucosa routinely. In this case, biopsy was not done as patient came with acute abdominal emergency. Laparotomy with biopsy is often needed to diagnose the disease.^{10, 11, 12}

The pathological appearance of duodenal tuberculosis may be acute superficial ulcer either with enlarged regional lymph nodes or in chronic infections; a dense fibrotic reaction and hypertrophic appearance of the bowel. In this case, it was ulcerohypertrophic type. Granulomas were seen on microscopic examination of duodenum as well as wedge biopsy of liver nodules. In our case, as diagnosis of malignancy was less likely however, patient was young and came with acute abdomen. The diagnosis of this disease is difficult and is usually made on biopsy or postoperatively. Most reported

cases of duodenal TB came from areas with high prevalence of TB such as India, Africa. Hence, a high suspicion is needed when patient is from a place endemic for TB. Another emerging concern is the increased prevalence of Human immuno-deficiency virus (HIV) infection. The annual risk of developing active TB when confected with HIV is 20-30 times the risk in non-HIV infected individual⁽⁷⁾. For patients with risk factors like multiple sexual partners or I.V drug abusers and those from high prevalence of HIV infection, testing for HIV co-infection is must.

Duodenal tuberculosis is still managed primarily by medication. Studies have shown that if diagnosis is made prior to surgery, most lesions improve with appropriate treatment. However, tuberculosis usually heals by scarring, so patient may develop stenotic lesion and later on surgical intervention is preferred. Performing biopsy preoperatively may have changed the management in our patient, if the biopsy would have proved to be diagnostic. In addition, performing tuberculosis polymerase chain reaction test would have helped us in the diagnosis, if tuberculosis was made as a part of the differentials.

CONCLUSION

Duodenal tuberculosis being the rarest form of intestinal tuberculosis poses diagnostic challenges. It can give non-specific symptoms or present as emergency when complicated. High index of suspicion by radiological examination, exploratory laparotomy and histopathological examination of the tissue biopsy is the only way which leads to definitive diagnosis of this rare condition. Treatment is surgical resection of the portion and bypassing the lesion along with antitubercular therapy.

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