

Tuberculosis of the stomach

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ABSTRACT

Tuberculosis is a common infectious disease in the world. Tuberculosis affect 9.6 million people and claims the life of about 1.5 million person globally. Gastrointestinal tract is one of site involved with extrapulmonary tuberculosis. TB of the stomach is relatively rare even in countries endemic with tuberculosis. In Iraq the National Tuberculosis Programme has not registered any case of TB stomach so far. The presumed causes of rare involvement of stomach are low acidity, rapid motility of the stomach and paucity of lymphoid tissue in its wall. However, non-specific signs and symptoms might lead to misdiagnosis of some cases. TB stomach can be presented as stomach outlet obstruction, upper GI bleeding, and malignant like picture. Perforation of the bowel is one of the dreadful complication of TB of the bowel. Here we are presenting the first registered case of TB of the stomach in the Iraqi National TB Programme.

Key words: Tuberculosis, stomach, National TB Programme, Haematemesis.

INTRODUCTION

Tuberculosis (TB) is contagious and airborne. It ranks alongside HIV/AIDS as a leading cause of death worldwide. In 2014, 9.6 million people fell ill with TB and 1.5 million people died from TB.¹ Extrapulmonary tuberculosis is not uncommon. With exception of laryngeal tuberculosis, extrapulmonary TB infections are rarely contagious; however, their diagnosis represents a big challenge to the doctors and surgeons because its symptoms of presentation in most of the time are non-specific and can mimic the presentation of more common diseases. So their early diagnosis depends on dealing them with high index of suspicion.

Abdominal TB comprises approximately 1-3 % of all cases of TB and approximately 12 % of all extrapulmonary TB.² In the gastrointestinal tract, ileocecal region is the most common site of involvement followed by ascending colon, jejunum, appendix, duodenum, stomach, sigmoid colon and rectum.³ Tubercular involvement of the gastroduodenal (GD) region is rare.^{4,5} It may be misdiagnosed as peptic ulcer even in countries endemic with tuberculosis.⁶ Here we are reporting a case of tuberculosis in stomach which was presented with non-specific

gastric symptoms and haematemesis. Its diagnosis was made by histopathological examination of the biopsy of the stomach taken by gastroesophagoscopy. Treatment by anti-TB drugs showed good response.

CASE VIGNETTE

A 68 year-old man from Baghdad had presented to outpatient clinic of Baghdad Teaching Hospital, Medical City Complex complaining of dyspepsia of few weeks duration with vague epigastric pain followed by a sudden attack of haematemesis. He had a remarkable history of night sweat, anorexia and significant loss of weight. Patient was smoker but not alcoholic drinker. He has a history of hypertension over the last 2 years. He reported no history of diabetes mellitus or any diseases know to impair immunity by themselves or indirectly through their treatment. Patient had denied any history of chest infections in the past. He has no history of contact with patient having pulmonary TB. His drug history was only positive for having lisinopril 20 mg a day for treating hypertension. Patient had given a history of using courses of different proton pump inhibitors to control his

dyspeptic symptoms without satisfactory response.

On examination: he is an elderly man, cachectic, with low grade fever. Chest was clear for auscultation with distinct heart sounds. Abdomen was soft for superficial palpation, not tender, not distended, and revealed no mass on deep palpation. Transmitted thrill was not elicited.

Complete blood count was nonspecific apart from haemoglobin which was 10 g/ dl. Renal and liver function tests were within normal. Indices of bleeding diathesis were within normal. Abdominal ultrasonography was unremarkable, no abdominal lymph node enlargement was seen. Chest x ray showed no clear abnormalities.

Patient was referred for gastroesophagoscopy which showed ulcerated lesions at the pyloric part of the stomach. Duodenal and gastric biopsies were taken for histopathological examination. Duodenal biopsy showed nonspecific duodenitis, while gastric biopsy had showed multiple caseating granulomatous lesions with multinucleated giant cells and lymphoid aggregates; a picture in favour of chronic granulomatous gastritis, suggestive of tuberculous gastritis. No neoplastic cells were seen. Acid fast bacillus (AFB) was negative, Polymerase Chain Reaction (PCR) for tuberculosis was not done.

Patient was diagnosed as tuberculous gastritis and had been sent to the National TB Programme at the National Specialized Centre for Chest and Respiratory Diseases, Iraqi Ministry of Health for further management. The patient had registered as extrapulmonary (EP) TB case (GIT-TB, TB of the stomach) in the Iraqi National TB Control Programme. He was treated with fixed-dose combinations of four anti-TB drugs (INH, RIF, PZA, and EMB). This initial phase was continued for 2 months followed by maintenance phase for 4 months with fixed-dose combination of two anti-TB drugs (INH and RIF). Doses were calculated according to the patient's body weight. During follow up the patient had showed a clear improvement in his general condition; He kept afebrile, gained weight. Appetite had improved remarkably and haematemesis had not recurred any more.

DISCUSSION

In 2014, National TB Programme (NTP) in Iraq recorded 8341 TB cases, 3069 cases were

EP. Only 144 cases were TB of gastrointestinal tract, with no registration of any gastric TB. On reviewing registration of previous years, gastric tuberculosis has never been registered in Iraq by the NTP.⁷

Abdominal tuberculosis, which is one of the extrapulmonary tuberculosis, affects the gastrointestinal tract, spleen, pancreas, liver, peritoneum, omentum and lymph nodes adjacent to these organs. It could be the result of a primary infection or reactivation of a dormant focus (post primary tuberculosis). The latter can happen due to a decrease in the immunity as in cases of severe infections, HIV, and malnutrition etc.⁸ The possible routes of infection include direct infection of the mucosa, haematogenous spread or extension from neighbouring tuberculous lesions

Involvement of stomach by tuberculous process is rare⁵ even in areas of the world endemic with tuberculosis. In a review study from India, they have reported only 23 cases of biopsy proven gastric tuberculosis over 14 years, 1986-2000.⁶ Relatively rare involvement of the stomach with tuberculosis has been attributed by many authors to bactericidal property of gastric acid, intact gastric mucosa of the stomach,¹⁰ a paucity of lymphoid tissue in gastric wall, and rapid transit of food in the stomach.^{4,11,12,13} Tendency of long term use of drugs that interfere with the acidity of the stomach has shown to increase the incidence of gastric tuberculosis.¹⁴ Although our patient gave a history of using proton pump inhibitor but it is not clear whether this had increased the susceptibility to gastric TB or it is just been used to control dyspeptic symptoms induced by the tuberculosis of the stomach itself.

Presence of gastroduodenal tuberculosis is usually linked to the presence of pulmonary tuberculosis or with immunodeficiency state.¹⁵ nevertheless, our patient did not show any features, neither clinically nor radiologically, suggestive of pulmonary tuberculosis. This is consistent to what has been shown by Rao et al who stated, in his review article, that only 2 patients out of 23 (8.7%) had active pulmonary TB.⁶ Wig has also reported a case of massive haematemesis due to gastric tuberculosis without concomitant pulmonary tuberculosis.¹⁶

There are three types of pathological involvement of gastroduodenal tuberculosis. These pathological types are reflected clinically by:¹⁰

1. Gastric outlet obstruction.
2. Upper GI bleeding
3. Malignant like presentation.

The commonest presentation of gastric tuberculosis is gastric outlet obstruction¹² represents about 60 % in a review from India.¹⁰ Upper GIT bleeding, like in our case, is the next common seen in about 26 %. Literature has reported a massive haematemesis due to gastric TB.¹⁶ Bleeding is usually due to the presence of tuberculous ulcer as in our case; however, Amarapurkar et al has reported that haematemesis might occur due to oesophageal varices secondary to portal hypertension which he explained by portal vein thrombosis secondary to old tuberculous lymphadenitis.¹⁰ Malignant like presentation is seen in 13 % of cases. Suspicion of malignancy can be made clinically, radiologically or intra-operatively.

One of the most feared complication of intestinal TB is intestinal perforation. It occurs in 1 to 15% of patients with GIT tuberculosis. Perforations may be solitary or multiple, although distal ileum is the commonest site to be involved, other like stomach and duodenum may also be involved.^{17,18,19} We should keep in mind that start of successful anti-TB may not prevent such a dreadful complication. Many studies have shown that intestinal perforation may occur up to 4 months after starting anti-TB even when a patient shows symptoms and signs of improvement.^{20,21,22} The pathogenesis of this paradoxical deterioration during effective anti-tuberculous therapy is not fully understood. Reduced inflammatory response as a result of starting anti-tuberculous treatment may impaired ulcer healing and reduce tendency to reinforcement by the mesentery.¹⁸ This phenomenon has been increasingly reported in HIV-positive patients being treated for TB, especially among those prescribed highly active anti-retroviral therapy.²³ Also it has been reported in about 10 % of HIV-negative patients during treatment for TB. Extra-pulmonary TB, and patients with low baseline lymphocyte counts are more prone to show this phenomenon.²⁴ Nevertheless, an inadequate response to anti-tuberculous therapy should always raise the suspicion of drug resistance or poor drug compliance before accepting phenomenon of paradoxical deterioration.

The main presenting symptoms of our patient is epigastric pain and nonspecific dyspepsia. On reviewing literatures, vomiting and epi-

gastric pain are the most common presenting symptoms; seen in about 60 % of patients with gastroduodenal tuberculosis.^{6, 5} Haematemesis is reported in 26 % in one study⁶ and 16 % in another one.²⁵ Fever which is always recognized as a sign of infection especially pulmonary TB is not so in TB of stomach, it is reported in less than 10 %.⁶

Diagnosis of TB of the stomach and duodenum is usually delayed due to nonspecific signs and symptoms that may mimic those of more common diseases. High index of suspicion is the best way for early diagnosis. Definitive diagnosis depends on finding a histopathological picture suggestive of tuberculosis or detection of the TB bacillus, by acid fast staining or PCR, in the tissue specimen taken intra-operatively or through gastroesophagoscopy. Presence of caseating epithelioid granulomas usually makes the diagnosis of TB of the stomach more suggestable. When granulomas are non-caseating, small and discrete, the differential histological diagnosis should be expanded to include Crohn's disease, sarcoidosis, syphilis, mycotic lesions and exposure to beryllium, silicates or reserpine.^{9,26} In our case the diagnosis has been based on finding of caseating granuloma and supported by good response to anti-TB drugs. Amarapurka, from India, has diagnosed 5 cases by the presence of caseating granulomas, all of them have tested positive for acid fast stain.¹⁰

CONCLUSION

Although tuberculosis is a common disease in developing countries, TB of the stomach is relatively rare. It presents with nonspecific signs and symptoms that cast a big challenge on early diagnosis. TB of the stomach may be presented with haematemesis. Diagnosis should be made by histopathological examination of a biopsy taken from the lesion.

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Abbreviation list: Acid fast bacillus (AFB), Ethambutol (EMB), Extrapulmonary (EP), Gastroduodenal (GD), Gastrointestinal tract (GIT), Human Immunodeficiency virus/ Acquired immune deficiency syndrome (HIV/AIDS), Isoniazid (INH), National TB Programme (NTP), Polymerase Chain Reaction (PCR), Pyrazinamide (PZA), Rifampicin (RIF), Tuberculosis (TB),

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