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Isolated esophageal tuberculosis: a case report

Diallo I. Isolated esophageal tuberculosis: a case report

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Abstract

BACKGROUND

Tuberculosis is endemic in Senegal. While its extra-pulmonary localization is rare, esophageal tuberculosis, particularly the isolated form, is exceptional. We report here a case of isolated esophageal tuberculosis in an immunocompetent patient.

CASE SUMMARY

A 58-year-old man underwent consultation for mechanical dysphagia that had developed over 3 mo with non-quantified weight loss, anorexia, and fever. Upper digestive endoscopy showed extensive ulcerated lesions, suggesting neoplasia. The diagnosis was confirmed by histopathology, which showed gigantocellular epithelioid granuloma surrounding a caseous necrosis. Thoracoabdominal computed tomography scan did not show another localization of the tuberculosis. The outcome was favorable with treatment.

CONCLUSION

Esophageal tuberculosis should be considered when dysphagia is associated with atypical ulcerated lesions of the esophageal mucosa, in an endemic area.

Key Words: Tuberculosis - esophagus - endoscopy

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Core Tip: Endoscopic aspects of lesions of esophageal tuberculosis

INTRODUCTION

Tuberculosis is endemic in Senegal, where it constitutes a major public health problem. In 2020, 12,808 new cases of tuberculosis were reported in Senegal, the majority of which were pulmonary (National Controlling Tuberculosis Program, data not published). Extrapulmonary forms of tuberculosis are frequent, whether or not they are associated with pulmonary involvement. In the digestive tract, the terminal ileum and the cecum are most often affected. Esophageal localization is rare, especially in its isolated form.

We report herein a case of isolated esophageal tuberculosis in an immunocompetent patient who responded well to antibacillary treatment.

CASE PRESENTATION

Chief complaints

A 58-year-old patient was seen in our department for dysphagia that had developed over 3 mo.

History of present illness

The patient had dysphagia that had been evolving for 3 mo with non-quantified weight loss, nonselective anorexia, and nocturnal fever.

History of past illness

The patient had undergone appendectomy at 23-years-old.

Personal and family history

The patient's other personal and family histories were unremarkable.

Physical examination

The patient was in good general condition (World Health Organization performance status of 0), with a body mass index of 21.55 kg/m^2. Clinical examination was normal.

Laboratory examinations

Biological investigations (blood count, liver function tests, glycemia, renal function, and C-reactive protein) were normal. The viral serologies for hepatitis B, hepatitis C, and human immunodeficiency virus were negative.

Imaging examinations

The thoracoabdominal computed tomography (CT) scan did not show any mediastinal lymph nodes in contact with the esophagus or other foci of tuberculosis.

ENDOSCOPIC EXAMINATION

Upper gastrointestinal (GI) endoscopy showed a jagged appearance of the thoracic esophageal mucosa for about 12 cm, stopping 3 cm above the cardia, with large irregular ulcers and raised contours. Nodules were present both at the level of the ulcers and in the normal-appearing mucosa (Figure 1). Chromoendoscopy with narrow-band imaging did not detect areas that might suggest dysplasia or carcinoma (Figure 2).

ANATOMICAL PATHOLOGY

Esophageal biopsies revealed a deep loss of wall tissue, reaching the muscularis mucosa. The normal tissue was replaced by granulation tissue containing a tuberculoid granuloma with several follicles consisting of epithelioid and multinucleated Langerhans histiocytes, surrounding a caseous necrosis (Figure 3). Neither culture of tissue samples nor PCR test for *Mycobacterium tuberculosis* were performed. Sputum and gastric acid liquid after aspiration were negative for acid-fast bacilli (AFB).

FINAL DIAGNOSIS

Isolated esophageal tuberculosis

TREATMENT

An antituberculosis treatment was initiated (rifampicin, isoniazid, ethambutol, and pyrazinamide [RHEZ] and administered for 2 mo, and with rifampicin and isoniazid [RH] for 4 mo). The patient showed good tolerance.

OUTCOME AND FOLLOW-UP

The patient's outcome was favorable, with a clear improvement of dysphagia after 15 d of treatment, which disappeared after 5 wk. Upper digestive endoscopy after 4 mo of treatment showed a normal esophageal mucosa. Six months after stopping the treatment, the patient was well, had regained weight, and did not complain of dysphagia.

DISCUSSION

Described for the first time in 1837 by Denonvilliers during an autopsy, infectious esophagitis due to tuberculosis is rare, even in countries with high tuberculosis endemicity. The esophageal localization represents 0.2%-1% of tuberculosis cases of the GI tract[1,2]. This low incidence can be explained by several mechanisms that allow the esophagus to fight infection, in particular, peristaltic movements leading to emptying of the contents into the stomach, and the presence of mucus and saliva lining the mucosa and its squamous epithelium[1]. These mechanisms provide a barrier against primary contamination caused by the ingestion of food or saliva containing germs such as *M. tuberculosis*. However, secondary contamination by contact with neighboring organs, especially in cases of tuberculosis in paraesophageal lymph nodes, is possible[3]. Blood-borne contamination is rare.

The most common symptom during esophageal tuberculosis is dysphagia (90% of cases), which was the main sign in our patient. Odynophagia, pyrosis, and chest pain may also be present[4]. The occurrence of coughing at mealtime should raise suspicion of an esotracheal or esophageal-mediastinal fistula, which is present in 13%-50% of cases[5]. The presence of hematemesis can also provide further evidence of a fistula[6].

The endoscopic appearance of esophageal tuberculosis is variable and nonspecific. In our patient, the lesion was located in the lower two-thirds of the esophagus and consisted of a large ulcer with raised contours, associated with micronodules. The esophagus can be affected throughout its length, although the lesion is most often located in the middle third[3,7,8], because of the extensive lymphoid tissue in this region. Endoscopy may show an ulcer of variable size, superficial with regular contours or irregular and infiltrative simulating neoplasia, or show a more or less ulcerated budding aspect of the mucosa[3,9]. An extrinsic compression aspect with a mucosa of normal appearance can also be found[8]. Endoscopic ultrasound can be helpful for diagnosis, allow analysis of the thick esophageal wall, and guide biopsies[7]. It also allows for exploration of the mediastinum and performance of fine-needle biopsy of potentially involved lymph nodes[7]. Thoracic CT scan often shows a thickening of the esophageal wall and allows for searching of adjacent lymph nodes, pulmonary location, or esotracheal or esophago-mediastinal fistulas.

Histology can help in the diagnosis of esophageal tuberculosis. Mucosal biopsies during upper GI endoscopy can show the presence of a tuberculous granuloma or AFB in about 50% of cases[10,11], but sometimes neither of these lesions is found[12]. In our patient, an epithelioid gigantocellular granuloma with caseous necrosis was present on histology, confirming the diagnosis of esophageal tuberculosis. To improve diagnostic success, deep biopsy samples should be taken from ulcerated areas, as granulomas are most often found in the submucosa[1,8,11]. If endoscopic biopsies are not contributive, deep esophageal biopsy or fine-needle aspiration of a satellite lymph node, guided by endoscopic ultrasound, make it possible to find an epithelioid granuloma on histology (reportedly in 94.7% to 100% of cases, with caseous necrosis and/or AFB present in 55% to 75% of those cases)[7,11]. Histological samples are also used for PCR or culturing methods to identify *M. tuberculosis*. If an epithelioid granuloma without caseous necrosis is present, a differential diagnosis with sarcoidosis, Crohn's disease, or a carcinoma must be considered.

The treatment of esophageal tuberculosis is essentially medical, according to the standard protocol (rifampicin, isoniazid, ethambutol, and pyrazinamide daily for 2 mo, followed by rifampicin and isoniazid daily for 4 mo) for at least 6 mo. However, the optimal duration is not clinically established. In the case of fistula, clips are the reference treatment for lesion closure[11,13]. The outcome during treatment for esophageal tuberculosis is favorable and without sequelae in almost all cases[3,7,8,11]. In our patient, no sequelae were noted during the follow-up. Upper digestive endoscopy, 4 mo after the beginning of treatment, was normal. The patient had no complaints at 6 mo after the end of treatment.

CONCLUSION

Esophageal tuberculosis is a rare cause of infectious esophagitis, even in a country where tuberculosis is endemic. Nevertheless, esophageal tuberculosis should be considered when dysphagia is associated with atypical ulcerated lesions of the esophageal mucosa. The presence of gigantocellular epithelioid granulomas on esophageal biopsies confirms the diagnosis. The patient's outcome is generally favorable after antibacillary treatment, as illustrated by our observation.

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