Candida Esophagitis: Feathery Appearance as a New Sign on Barium Esophagogram

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ABSTRACT

The characteristic appearance of *Candida* esophagitis on barium studies is that of diffuse discrete mucosal plaques, which may become confluent to form 'cobblestone or shaggy' esophagus. Many authors have also reported different radiographic findings such as a foamy appearance in florid esophageal candidiasis in immunocompromised patients. This report discusses a "feathery" appearance seen in barium esophagography of a 74-year-old woman who presented with dysphagia. The barium swallow showed fine out- pouching giving a "feathery" appearance, which is similar to what is described as pseudo-diverticulosis in patients with esophagitis complicating gastro-esophageal reflux disease. A diagnosis of esophagitis presumably due to candidiasis was made. This was confirmed by fungal studies on biopsy specimen following flexible esophagoscopy. Radiologists should be aware of this rare manifestation as a new sign of *Candida* esophagitis in order to avoid unnecessary delay in diagnosis and treatment.

Key words: Barium esophagogram; *Candida* esophagitis; feathery

Introduction

Candida albicans is the most common cause of infectious esophagitis.[1] It usually occurs as an opportunistic infection in immunocompromised patients.[2]

The characteristic appearance of *Candida* esophagitis on barium studies is that of diffuse discrete mucosal plaques, which may become confluent to form cobblestone or shaggy esophagus.[1-3] Several authors have reported uncommon manifestations which include foamy appearance, aphthous ulceration, stricture, fistula, and polypoid masses.[2,3]

The "feathery" appearance is described in this case as a new manifestation of *Candida* esophagitis. This appearance is similar to what was described as pseudo-diverticulosis in patients with esophagitis complicating gastro-esophageal reflux disease (GERD).[4]

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Case Report

A 74-year-old woman presented with 1-year history of recurrent total dysphagia, which was sudden in onset and episodic. There was no history of ingestion of a corrosive substance, esophageal instrumentation, GERD or fever. There was no odynophagia. There was no history of chest pain, regurgitation, any underlying malignancy or immunosuppression. Furthermore, there was no positive history of radiation therapy or chemotherapy in the past. She had significant weight loss and she was a known hypertensive on medication. The physical examination was essentially normal and a clinical assessment of dysphagia secondary to diffuse esophageal spasm was made.

There was no abnormality detected on chest radiograph. The single contrast barium swallow study showed narrowing of about 10 cm segment in the middle third of the esophagus commencing at 20 cm from incisors teeth with contrast filled fine out-pouches giving a "feathery" appearance [Figure 1]. There was no hold-up or reflux of contrast on fluoroscopy. There was no diffuse discrete mucosal plaques, cobblestone,

foamy or shaggy appearance of the esophagus. Chest computerized tomography scan showed thickened esophageal wall limited to the involved segment. A diagnosis of esophagitis was made based on the "feathery" appearance on barium swallow studies.

Flexible esophagoscopy showed whitish patches in the middle third of the esophagus that bled on contact [Figure 2]. The underlying mucosa was friable and erythematous. There was no mass lesion seen and the probe was advanced to the stomach. Samples obtained from the esophagus were taken and sent for histology and fungal studies, which revealed chronic esophagitis and *C. albicans* respectively. Lentiviral screening was negative.

The patient was commenced on oral fluconazole because amphotericin B was not available. She tolerated semi-solid food about 2 weeks after the commencement of the therapy and normal diet a month after.

Discussion

Candida colonization of the esophagus occurs in 25.0% of healthy individuals.[5] However, invasive *Candida* esophageal infections predominantly occur in immunocompromised and transplant patients or after a major surgical procedure.[5]

During the past two decades, a much more fulminant form of candidiasis has been encountered in patients with AIDS, who may present with grossly irregular or "shaggy" esophagus caused by innumerable coalescent pseudomembranes and plaques, with trapping of barium between the lesions.[1]

Although, a "shaggy" barium-filled esophagus with ragged irregular contour is thought to be characteristic of candidiasis, this finding is present only in patients with advanced disease.[6] Other radiographic finding which may be seen in more advanced disease is coalescent plaques, which may produce a "cobblestone" or "snakeskin" appearance.[2,7]

In our case, the patient was not immunocompromised as evidenced by the negative HIV screening and had no previous instrumentation or surgical intervention. The "feathery" appearance described, in this case, was seen in an immunocompetent patient. This may explain why the disease condition did not progress to the advanced stage 1-year after the commencement of the symptoms.

The pathophysiology that accounts for this pseudo-diverticulosis (feathery appearance) is unclear. This may be due to inflammatory changes induced by the *Candida* infection. Its specificity for *Candida* esophagitis has not been established. However, if found the patient must be further evaluated for *Candida* esophagitis. Endoscopy with sampling for cytological/microbiological evaluation is however, the conclusive way to establish the diagnosis.[7]

Sam *et al*. described a foamy esophagus as a new sign of *Candida* esophagitis on double contrast esophagography which is characterized by innumerable tiny, rounded bubbles that settle out along the top of the barium column, producing a layer of foam.[2] It was inferred that this foamy esophagus may be more likely to occur in patients with chronic esophageal candidiasis from esophageal stasis associated with scleroderma or other causes of functional or mechanical obstruction of the esophagus. Feathery appearance seen in this case is a new sign of chronic *Candida* esophagitis. It is demonstrated on single contrast esophagography in an immunocompetent patient with no features of connective tissue disorder or functional esophageal obstruction.

Conclusion

Many patients will still continue to be examined initially by barium esophagography, and some patients such as those with AIDS whose endoscopy represents a risk of disease transmission to other patients, may not be considered candidates for more invasive study. It is important therefore,

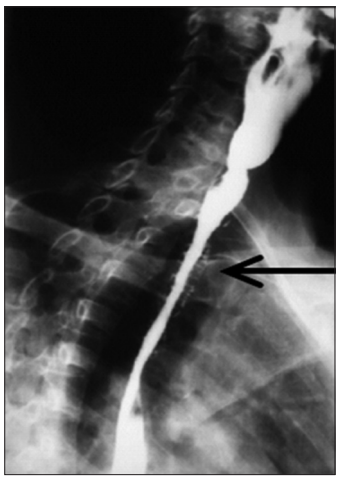

Figure 1: Barium esophagogram showing a long narrowed segment with fine out pouches in the mid third of esophagus giving "feathery" appearance

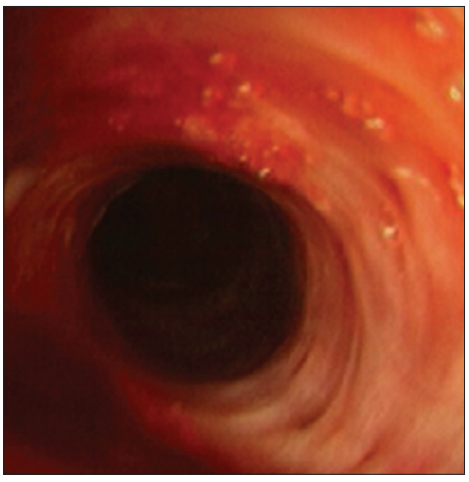

Figure 2: Whitish patches with hyperaemic areas seen within the esophageal mucosal demonstrated at flexible esophagoscopy

for radiologists to be familiar with the common and unusual manifestations of esophageal candidiasis. *Candida* esophagitis should be strongly suspected if "feathery" appearance is the only sign demonstrated on esophagography especially in immunocompetent patients.

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