

Forestier's disease – an unusual cause of difficult intubation

Published on 03.04.2017

DOI: 10.1594/EURORAD/CASE.14472

ISSN: 1563-4086

Section: Head & neck imaging

Area of Interest: Gastrointestinal tract

Procedure: Contrast agent-oral

Imaging Technique: Fluoroscopy

Special Focus: Swallowing disorders Case Type:

Clinical Cases

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Patient: 61 years, male

Clinical History:

A 61-year-old male patient with chronic gastritis underwent elective upper gastrointestinal endoscopy. During the procedure it was found impossible to pass the endoscope down the esophagus, despite several attempts, and the patient was referred for a swallowing study to exclude possible compressive causes.

Imaging Findings:

Barium swallow showed normal swallowing both in the oral and pharyngeal phases, with no aspiration of contrast. However, the presence of an exuberant bony protuberance was noted due to anterior cervical spine osteophytes, consistent with Forestier's disease, being largest at C3 - C4. This led to fixed luminal narrowing secondary to extrinsic compression (Fig. 1).

Discussion:

Diffuse Idiopathic Skeletal Hyperostosis (DISH) or Forestier's disease is a condition characterized by bone proliferation in the tendons and ligaments of the spine and affects mainly elderly patients [1]. It has an estimated frequency of 10%, being more common in men who often demonstrate more extensive disease [2]. It is usually an incidental finding in patients being investigated for other reasons, but it can present with neck stiffness and pain, dysphagia, hoarseness, foreign body sensation and even stridor [3]. Histologically, there is calcification and ossification of the anterior longitudinal ligament, peripheral fibrosis, hypervascularization, chronic cellular inflammatory infiltrate and new periosteal bone formation on the anterior surface of the vertebral bodies. It particularly affects the cervical and thoracic spine [4]. Its aetiology remains unknown, but recognised associations include ossification of the posterior longitudinal ligament, in whom 1/3 of patients test positive for HLA - B27 [5], hyperinsulinaemia with or without diabetes, hyperglycaemia, obesity, hyperuricaemia, dyslipidaemia, hypertension, coronary artery disease and the prolonged use of isotretinoin [3].

The diagnosis is made based solely on radiographic features using criteria described by Resnick and Niwayama: a) the presence of calcification and ossification along the anterolateral aspect of at least four contiguous vertebral bodies; b) relative preservation of intervertebral disc height of the involved vertebral segments and the absence of extensive radiographic changes of degenerative disc disease, including the vacuum phenomenon and vertebral body marginal sclerosis and c) the absence of apophyseal joint bony ankylosis, sclerosis or bony fusion [6].

In this case typical findings of DISH were present. Barium swallow demonstrated the cause of endoscopic intubation failure, showing marked narrowing of the oesophageal lumen by extrinsic compression due to exuberant osteophyte

formation. Taking into account the absence of consequent symptoms no further examination or treatment was required, only regular follow-up.

In fact, treatment is essentially conservative, with analgesics and nonsteroidal anti-inflammatory drugs prescribed in cases with pain and stiffness. Surgical osteophyte removal is only considered if causing severe symptoms [5, 7].

Differential Diagnosis List: Diffuse Idiopathic Skeletal Hyperostosis (DISH) or Forestier's disease, Ankylosing spondylitis, Spondylosis deformans, Degenerative disease

Final Diagnosis: Diffuse Idiopathic Skeletal Hyperostosis (DISH) or Forestier's disease

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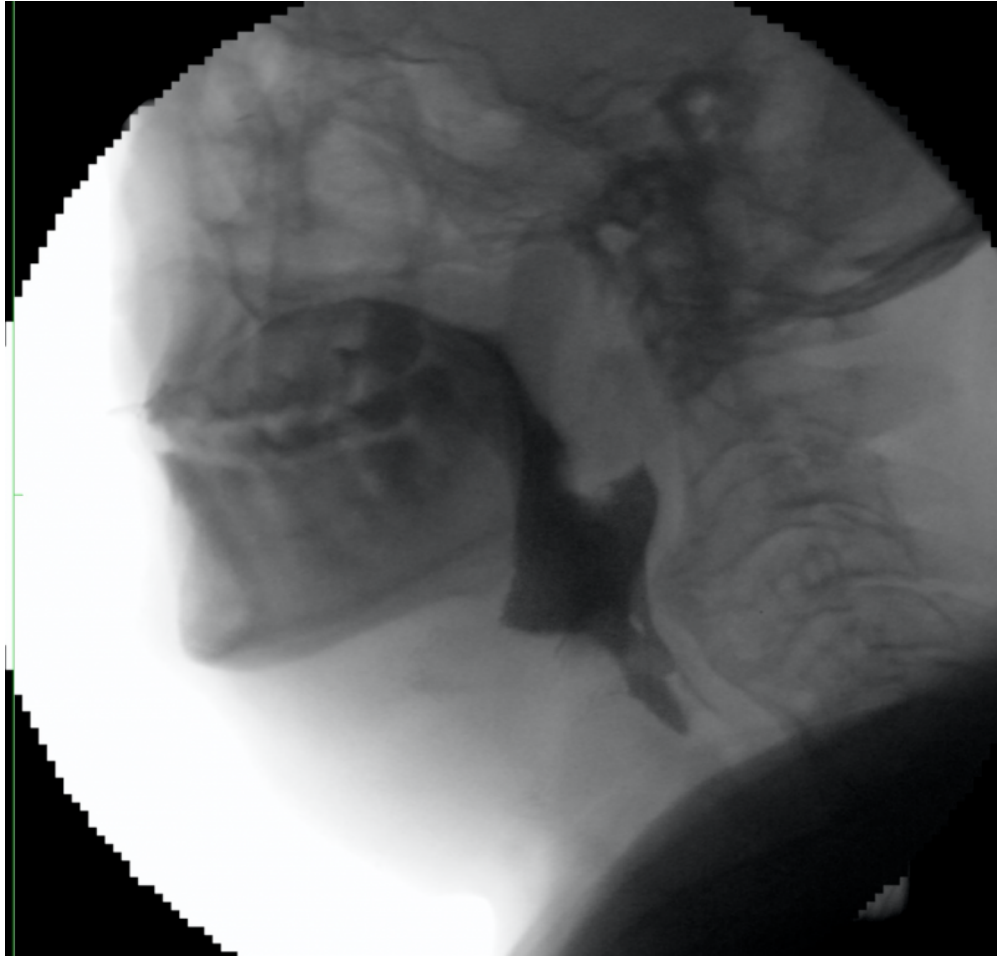
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Figure 1

a



Description: Lateral image from a barium swallow examination of the upper cervical oesophagus showing calcification and thickening of the anterior longitudinal ligament causing extrinsic compression of the posterior wall of the oesophagus. No aspiration was documented. **Origin:** Hospital Centre and University of Coimbra, Department of Imagiology

b



Description: Lateral radiograph showing an exuberant bony protuberance due to anterior cervical spine osteophytes. **Origin:** Hospital Centre and University of Coimbra, Department of Radiology