A 65-year-old male presented at the Neurosurgical department with complaints of dysphagia for solids, without odynophagia, palpable masses or neurological deficits. He had a history of diabetes mellitus, underwent a craniotomy with excision of a meningioma in 2003 and was currently on follow up consults of Neurosurgery.

Imaging Findings:

Due to the dysphagia, this patient was sent to our department and underwent a videofluoroscopy of the oesophagus, which revealed calcification and thickening of the prevertebral soft tissue, with more evident thickening of the anterior ligament at the level of C3-C4 and C5-C6, causing extrinsic compression of the posterior oesophageal wall, inferior to 50% of the lumen of the oesophagus. A filling defect of 2 mm of largest diameter was also seen on the anterior surface of the proximal oesophagus. Due to its small size and regular contours, we assumed the presence of a small oesophageal membrane, which was later confirmed endoscopically. The examination showed normal oesophageal emptying, but some tertiary peristaltic waves were apparent at the distal third of the oesophagus. The patient had a one month old CT scan, that confirmed these findings.

Discussion:

Mechanical dysphagia due to DISH, involving the cervical spine, is very unusual and its prevalence has a wide variation, ranging from 0.1% up to 25% [1, 2]. Other postulated mechanisms of dysphagia include peri-oesophagitis, peripharyngitis and even irritation of the sympathetic and cranial nerves [3]. The dysphagia is usually marked, present for solid foods, improved by anterior flexion of the neck, and worsened by extension [1].

DISH describes a phenomenon characterised by a tendency toward ossification of ligaments. It might not represent a disease per se but rather a vulnerable state in which extensive ossification results from an exaggerated response of the body to stimuli that usually produce only modest new bone formation [4]. It most characteristically affects the spine [5]. Ossification of the longitudinal ligaments (especially the anterior ligaments) of the spine produces a tortuous paravertebral mass anterior to and distinct (at least radiologically) from the vertebral bodies [1, 5, 6].
Grossly, it appears as “candle wax” dripping down the spine. Ossification of the anterior longitudinal ligament is the most common lesion and predominates at the level of the thoracic spine [1]. The diagnosis of DISH meets very strict criteria, and according to Resnick et al, it is a pre-requisite for the diagnosis [4]. The criteria are as follows:

a. The presence of “flowing” calcification and ossification along the anterolateral aspects of at least 4 contiguous vertebral bodies with or without associated localised pointed excrescences at the intervening vertebral body-disc junctions.

b. A relative preservation of disc height in the involved areas and the absence of extensive radiographic changes of "degenerative" disc disease, including vacuum phenomena and vertebral body marginal sclerosis.

c. Absence of apophyseal joint bony ankylosis and sacro-iliac joint erosion, sclerosis or bony fusion [4, 7].

Risk factors may include diabetes mellitus, obesity and hyperglycaemia [8]. Prevalence is higher in caucasian males, of advanced age, being uncommon before 50 years and rare before 40 [5]. Some have also proposed a role for certain medications (long-term use of retinoids) but no literature was found on this subject.

Surgical decompression can ameliorate the symptoms, but should only be considered when complications such as weight loss, pneumonia and severe dysphagia arise, since the outcome is usually poor. Alternatively, enteral feeding is an option [1, 3]. Medical treatment with analgesics, corticosteroids, muscle relaxants and a soft diet are reserved for milder cases [3]. In this case, conservative treatment with muscle relaxants was the preferred approach.

**Differential Diagnosis List:** Diffuse idiopathic skeletal hyperostosis /Forestier’s disease, Ankylosing spondylitis, Spondylosis deformans, Intervertebral osteochondrosis, Spondylitic variants (Psoriatic arthritis, Reiter’s syndrome etc), Hypoparathyroidism

**Final Diagnosis:** Diffuse idiopathic skeletal hyperostosis /Forestier’s disease

**References:**


Resnick D, MD; Niwayama G, MD (1976) Radiographic and pathological features of spinal involvement in Diffuse Idiopathic Skeletal Hyperostosis (DISH). Radiology 119. 559-568

Rothschild B M, MD; Chief Editor: Dennis P Grogan, MD (2008) Diffuse idiopathic skeletal hyperostosis. Medscape


Description: 2a and 2b- CT images in tranverse reconstruction that show calcification of the prevertebral ligament. Compression of the posterior wall of the oesophagus can also be observed.
Origin: 1. Department of Radiology, Centro Hospitalar e Universitário de Coimbra
Description: CT in transverse reconstruction, at the level of C5. Origin: 1. Department of Radiology, Centro Hospitalar e Universitário de Coimbra.
Description: Sagital reconstruction of the neck that shows calcification of the prevertebral ligament.
Origin: 1. Department of Radiology, Centro Hospitalar e Universitário de Coimbra
Description: Image of videofluoroscopy of the upper oesophagus showing calcification and thickening of the anterior ligament, causing extrinsic compression of the posterior wall of the oesophagus. No aspiration was documented. Origin: 1. Department of Radiology, Centro Hospitalar e Universitário de Coimbra