DYSPHAGIA DUE TO ANTERIOR CERVICAL OSTEOPHYTOSIS: CASE REPORT

INTRODUCTION

The differential diagnosis of dysphagia is extensive. In anterior cervical hyperosteophytosis, the excessive formation of marginal bone spurs (osteophytes) along the anterior cervical spine is a common but rare symptomatic finding, mostly seen in the elderly. The majority of these patients are asymptomatic, and the condition is rarely associated with upper airway obstruction.

The clinical condition occurs in cases of degenerative disc disease, as part of the physiological or accelerated ageing process, post trauma, post laminectomy syndromes, or in cervical spondylosis, although it is most frequently seen in syndromes like diffuse idiopathic skeletal hyperostosis (DISH), also known as Forestier’s disease. The initial therapeutic approach is conservative and includes diet modification, postural corrections, muscle relaxers, anti-reflux and non-steroid anti-inflammatory drugs. Surgery is indicated only in severe cases with large osteophytes, when conservative treatment fails.
The aim of this case report is to draw attention to how frequently anterior cervical osteophytes can cause dysphagia, emphasizing the risks of life-threatening complications that may arise from this condition.

We report the case of a 72-year old woman who presented a 6-year history of cervical pain, stiffness and progressive dysphagia. The patient was fully investigated, and underwent surgery following the failure of conservative management.

RESULTS

A 72-year old female with arterial hypertension and obesity was referred to our outpatient clinic complaining of progressive dysphagia and radiating cervical pain and stiffness. Symptoms began approximately 6 years prior to our Orthopaedic consultation, when the patient first noticed difficulty swallowing solid food, and was seen by her general practitioner (GP). An X-ray of the cervical spine was taken and showed anterior cervical hyperosteoophytosis with degenerative changes at several levels of the cervical spine. In order to rule out other causes of dysphagia, an upper GI endoscopy was performed that revealed a diffuse hyperemic gastric mucosa from the antrum. The patient was prescribed analgesics and dietary measures to improve her main symptoms.

One year later, due to persistence of the symptoms, she seen again by her GP who requested a cervical spine CT scan. This exam showed severe and enlarged anterior osteophytes of the cervical spine with mechanical compression over the cervical esophagus.

Following this exam the patient was lost to follow-up for five years.

In October 2010, the patient was referred to our Department for progressive dysphagia, with increased difficulty swallowing liquids as well as aggravation of her cervical pain and stiffness. There was no history of weight loss, pneumonia, shortness of breath, hoarseness or trismus. Neurologic and physical examinations were uneventful and all hematology and biochemistry blood tests were within the normal range.

Apart from an extensive anterior osteophyte formation at C4/5 and C5/6 seen on the lateral X-ray, an MRI of the neck showed esophageal compression due to the anterior osteophytes, and spinal cord compression at C4/5 and C5/6 due to degenerative disc disease (Figures 1, 2 and 3).

In view of these findings, the patient underwent surgical excision of the anterior osteophytes (C4, C5 and C6) and C5/6 decompression and fusion with a cage and autologous bone graft, through an anterior paramedian cervical approach. The surgical procedure and post-operative period were uneventful, with no postoperative complications. (Figures 4 and 5) The symptoms resolved within two weeks, and the postoperative radiographs showed that the osteophytes from C4 to C6 had been completely excised and the esophageal compression was relieved.

DISCUSSION

Dysphagia is a common complaint in routine clinical general practice. A complete clinical history and physical examination are necessary as part of the work up of these patients with many other comorbidities, but an understanding of the physiopathology, and of the different investigations available, is essential for a complete diagnosis.
Diffuse idiopathic skeletal hyperostosis (DISH) is the most frequent cause of large, symptomatic anterior cervical osteophytes. This inflammatory condition is defined by: (a) presence of flowing calcification and ossification along the anterolateral aspect of at least four contiguous vertebral body-intervertebral, with or without associated localized pointed excrescences at the intervening vertebral body-intervertebral disc junctions; (b) relative preservation of intervertebral disc height in the vertebral segment involved, and absence of extensive radiographic changes of degenerative disc disease; and (c) absence of apophyseal joint bony ankylosis and sacroiliac joint erosion, sclerosis, or intra-articular osseous fusion.11 Our patient did not have involvement of four contiguous vertebral bodies, and presented with degenerative disc disease and posterior cervical arthritis.

Three theories have been postulated to explain the mechanism of dysphagia caused by osteophytes. First, large osteophytes cause direct mechanical compression on the esophagus or hypopharynx. Second, dysphagia may even be caused by small osteophytes, if they are located at fixed points of the oesophagus (cricoid cartilage at level C6). Third, it may be caused by a local inflammatory reaction resulting in compressive edema.

The pathogenesis of dysphagia caused by hypertrophic cervical osteophytes is hypothesized to be the result of direct compression of the aerodigestive tract and associated nerves, as well as local inflammation that leads to mucosal edema, formation of adhesion, fibrosis, and cricopharyngeus muscle spasms. The cause of local inflammation is thought to be the result of repetitive mechanical trauma caused by the constant dynamic movement of the pharyngolaryngoesophageal complex over the large hypertrophic hyperostosis. Typically, osteophytes that cause dysphagia are in the C5 cervical interspace.

In the case reported here, the symptoms resolved after surgical excision of the osteophytes that were compressing the cervical esophagus, and once the post operative edema had cleared up, the patient was able to resume her swallowing abilities.

We therefore feel that the most likely cause of dysphagia may have been the mechanical effect of the bone spurs on the esophagus, but we were surprised that the displacement was not reported in the upper GI endoscopy.

FINAL CONSIDERATIONS

It is important to be aware of this diagnosis in cases of progressive dysphagia. Early diagnosis and treatment enable resolution of symptoms, avoiding serious complications associated with this pathology. Elderly patients are particularly at risk, especially from severe and progressive dysphagia with an increased risk of pulmonary aspiration and subsequent associated morbidity and mortality.

A multidisciplinary approach is essential for the correct assessment and work up of these patients.

ACKNOWLEDGMENTS

The authors thank Prof. Jorge Mineiro for reviewing the manuscript.

All authors declare no potential conflict of interest concerning this article.

REFERENCES