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Case Report

An unusual cause of dysphagia in elderly, dysphagia caused by cervical osteophytes: a case report and review of literature

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ABSTRACT

Dysphagia may occur in various pathological, inflammatory diseases of esophagus. It may also occur due to motility disorders of esophagus, benign and malignant diseases of mediastinum, cervical spine diseases. Dysphagia secondary to compression of esophagus by a cervical osteophyte is rare. The most common causes of osteophyte (bony outgrowth) in the cervical spine are diffuse idiopathic skeletal hyperostosis (DISH), ankylosing spondylitis (AS), and cervical spondylosis. Patients with cervical osteophytes are mostly asymptomatic. Hence, when considering cervical osteophytes as a cause of dysphagia other pathologic entities in the esophagus (e.g. tumors, webs, rings, strictures) should be excluded. We present a 68 year female patient who presented with complaints of dysphagia and neck stiffness since 3 months. She has been evaluated and found that dysphagia is due to large anterior cervical osteophytes compressing pharynx at C2/C3 and esophagus at C5/C6 and C6/C7 vertebral levels respectively. The objective of this case report is to emphasize the importance of anterior cervical osteophyte as a cause of dysphagia in elderly.

Keywords: Dysphagia, Esophagus, Cervical osteophyte, Diffuse idiopathic skeletal hyperostosis

INTRODUCTION

Dysphagia may have oropharyngeal or esophageal causes. Anatomic causes of dysphagia include tumors, abscesses, cervical bony outgrowths (osteophytes). Dysphagia due to skeletal cause is a rare entity.[1] Dysphagia secondary to compression of esophagus by an osteophyte is uncommon.[2,3] The mechanical compression of pharyngo-esophgeal segment caused by a large cervical osteophyte can result in dysphagia.[3] Large anterior cervical osteophytes can occur in cervical spondylosis, diffuse idiopathic skeletal hyperostosis (DISH), ankylosing spondylitis (AS), infectious spondylitis, and following trauma.[4]

The diagnostic approach in these patients includes lateral X-ray of cervical spine, upper gastrointestinal endoscopy barium swallow, and CT scan of spine. Management of this condition includes conservative and surgical methods.

CASE REPORT

A 68 year old female patient presented to our outpatient department with complaints of neck pain associated with neck stiffness, tingling and numbness of both hands, difficulty in swallowing since 3 months. The difficulty in swallowing was insidious in onset, progressive, more for solids than liquids.

She had mild atrophy of the small muscles of the hand with mild grip weakness. Arc of motion of the neck was restricted. Gait was normal. Motor power of upper and lower limbs was 4+/5.

X-ray of cervical spine lateral view showed extensive ossification of anterior longitudinal ligament (ALL) with prominent anterior cervical osteophytes at C2/C3, C5/C6, and C6/C7 vertebral levels. The posterior longitudinal ligament was also seen ossified in the cervical spine X-ray (Figure 1).

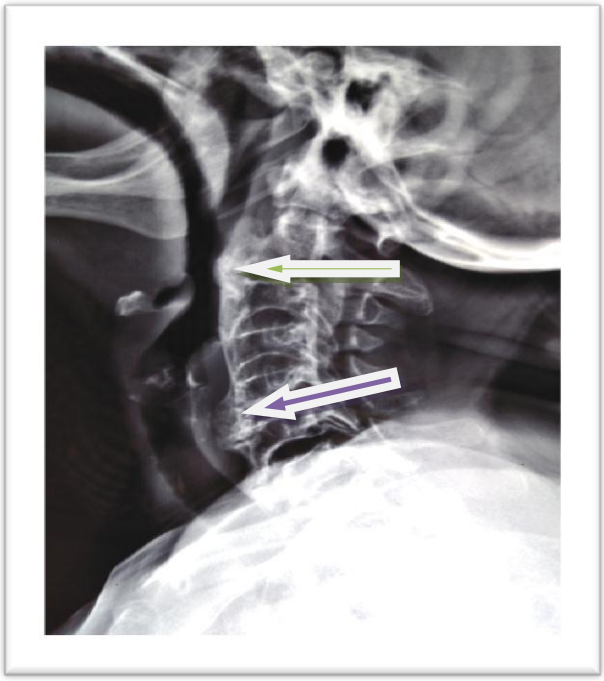

Figure 1: Soft tissue X-ray of the neck, in lateral view, showing large anterior osteophytes (green arrow) of the C2 and C3 vertebral bodies and another large elongated osteophyte of C5, C6 vertebral bodies (blue arrow) causing compression of pharynx and esophagus respectively.

Anterior cervical osteophytes at C2-C3 and C5-C7 levels were large causing compression of the pharynx and esophagus respectively. Upper GI endoscopy showed normal findings.

The difficulty in swallowing was attributed to the compression of the pharynx and esophagus by large anterior cervical osteophytes at C2-C3 and C5-C7 levels respectively.

DISCUSSION

Dysphagia may be caused by oropharygeal or esophageal lesions. Various pathological conditions of the esophagus like inflammatory diseases, motility disorders, esophageal diverticulum, carcinoma esophagus may cause dysphagia.

Other causes of dysphagia include benign or malignant lesions of the mediastinum, cervical spine diseases and degenerative conditions of the vertebra.[1] Cervical osteophytes causing compression of esophagus leading to dysphagia is not very common.[2,3]

The probable pathological process involved in dysphagia secondary to compression of esophagus by an osteophyte includes inflammatory reaction and odema around the esophagus caused by osteophytes. This inflammatory process in turn leads to crico-pharyngeal spasm and symptoms of dysphagia. Large cervical osteophytes when located opposite to a fixed point of esophagus usually at the level of cricoid cartilage (C6 vertebral level) may cause progressive dysphagia due to compression over the esophagus.[3]

Cervical bony outgrowths i.e., osteophytes are common in aging population but may occur in young people also. The differential diagnosis of cervical osteophytes includes cervical spondylosis, diffuse idiopathic skeletal hyperostosis (DISH), ankylosing spondylitis (AS), hypoparathyroidism, fluorosis, and trauma. Among these, the most common causes of cervical anterior osteophytes are cervical spondylosis, DISH and AS.[4]

DISH is one of the most common causes of anterior cervical ossification of soft tissues, mainly ligaments and enthesis. According to Resnick and Niwayama to diagnose DISH the patient should have involvement of at least 4 contiguous vertebrae, preservation of the intervertebral disc changes.[4]

With advancing age the prevalence of DISH and cervical spondylosis increases progressively.[5] The axial skeletal is most commonly involved in DISH, with thoracic spine being most commonly involved. Most of the patients with DISH and cervical spondylosis are asymptomatic. The most common presenting complaints in symptomatic patients include pain and decreased range of motion, osteophyte induced dysphagia. Patients may develop neurologic symptoms due to ossification of posterior longitudinal ligament or trivial trauma leading to fracture through the ossified ligaments.[6]

Most patients with anterior cervical or thoracic osteophytes indenting the esophagus don't have symptoms of dysphagia. Therefore, osteophytes should be considered as the cause of dysphagia only when other pathologic lesions in the esophagus (e.g., tumors, rings, webs, and strictures) have been excluded. Osteophytes at C3 or C3-C4 level may cause abnormalities of tilt mechanism of epiglottis causing dysphagia. The segment of esophagus at C6 level is narrow due to the presence of crico-pharyngeal sphincter; even a small osteophyte at this level can cause dysphagia.[7]

The possible explanations for dysphagia caused by compression of esophagus by an anterior cervical osteophyte include mechanical compression of esophagus by an osteophyte leading to esophageal obstruction, pharyngo-esophageal irritation and cricopharygeal spasm. Other possible explanations include osteophyte induced

paraesophageal inflammatory odema, possible esophageal denervation.[7,8]

In our case, the cause was mechanical compression of oesophagus by large osteophyte anterior to C5 and C6 vertebral bodies, which was confirmed by an oesophagoscopy.

The diagnostic imaging approach includes a lateral X-ray, and CT scan of neck. The formation of an osteophyte, the degree of compression of the esophagus and its craniocaudal and anteroposterior extent can be demonstrated by plain lateral radiographs and CT, respectively.[9] The above mentioned techniques and upper gastrointestinal endoscopy can exclude a neoplasm, a vascular anomaly, and other intrinsic or extrinsic mass lesions, thereby implicating cervical osteophytes as a cause of dysphagia, as in our case.[9]

Treatment of dysphagia caused by a cervical osteophyte can be divided into conservative and surgical methods. The conservative line of treatment consists of dietary modifications, swallowing therapy, non-sterioidal anti-inflammatory drugs, steroids and muscle relaxants.

But only few patients (~21%) respond to conservative treatment. When the conservative treatment fails or the osteophytes become large enough to cause symptoms surgical treatment is indicated.

The operative treatment consists of resection of the osteophyte without spinal fusion. The osteophytectomy without spinal fusion is advantageous due to no implant-associated complication and less operation time. Recurrent formation of osteophytes may occur in some patients. The risk factor for recurrence of the disease is the presence of postoperative intervertebral mobility[10]. Specific complications associated with the anterolateral approach for osteophyte resection include vocal cord palsy, Horner syndrome, and esophageal/tracheal perforation or fistula.

CONCLUSION

Giant cervical osteophyte due to DISH must be considered as one of the differential diagnosis of dysphagia in elderly. Patients are initially treated conservatively with dietary modification, swallowing therapy and medications. If conservative treatment fails surgery is indicated in such patients. Surgical excision of the osteophyte via anterior approach is an effective method of treatment for such patients.

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