



## GIANT ANTERIOR CERVICAL OSTEOPHYTES: A CASE REPORT

### DEV ANTERİOR SERVİKAL OSTEOFİT: BİR OLGU SUNUMU

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#### SUMMARY

Diffuse idiopathic skeletal hyperostosis (DISH) is characterized by ossification of the anterior longitudinal ligament of the spine and various extra-spinal ligaments. In this article, a 65-year-old male patient with giant osteophytes at the C4–7 levels and complaints of dysphagia and asphyxia is evaluated, together with a literature review.

**Key Words:** Diffuse idiopathic skeletal hyperostosis (DISH), deglutition disorders, spinal osteophytosis, asphyxia.

**Level of evidence:** Case report, Level IV

#### ÖZET

Yaygın idiopatik iskelet hiperostoza (DISH) spinal anterior longitudinal ligamentin kemikleşmesi ile karakterize bir hastalıktır. Bu yazıda C4-7 seviyelerinde büyük osteofitleri olan, disfaji ve aspirasyon şikayetleri ile başvuran 65 yaşında erkek hastanın tanı ve tedavisi literatür eşliğinde gözden geçirilerek değerlendirildi.

**Anahtar Kelimeler:** Yutma bozukluğu, spinal osteofit, asfiksi

**Kanıt Düzeyi:** Olgu sunumu, Düzey IV.

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## INTRODUCTION

Diffuse idiopathic skeletal hyperostosis (DISH) was described by Forestie and Rotes-Querol in 1950. DISH is characterized by ossification of the anterior longitudinal ligament (ALL) which extends from the atlas to the sacrum of the spine<sup>9</sup>. The lumbar vertebrae are the most frequently affected. Cervical spine involvement is uncommon. Dysphagia is seen in 1.6% of people with DISH of the cervical spine. The etiology of the disease is not clear, but previous studies have shown that DISH is often seen in an elderly population and in patients with type 2 diabetes mellitus<sup>4,9</sup>.

In this article, we present a case of DISH with giant osteophytes at the C4–7 levels with complaints of dysphagia and asphyxia due to narrow esophageal and laryngeal lumens.

## CASE REPORT

A 65-year-old man, with type 2 diabetes mellitus for three years, presented with progressive dysphagia and difficulty in swallowing, particularly solid foods, for six months. Previously, he had choked on an apple and required the Heimlich maneuver to be able to breathe again.

Physical examination was unremarkable except for a decreased range of spinal motion in the cervical region. Indirect rigid laryngoscope examination showed no vocal cord paralysis or any other pathology at the base of the tongue related to asphyxia and dysphagia.

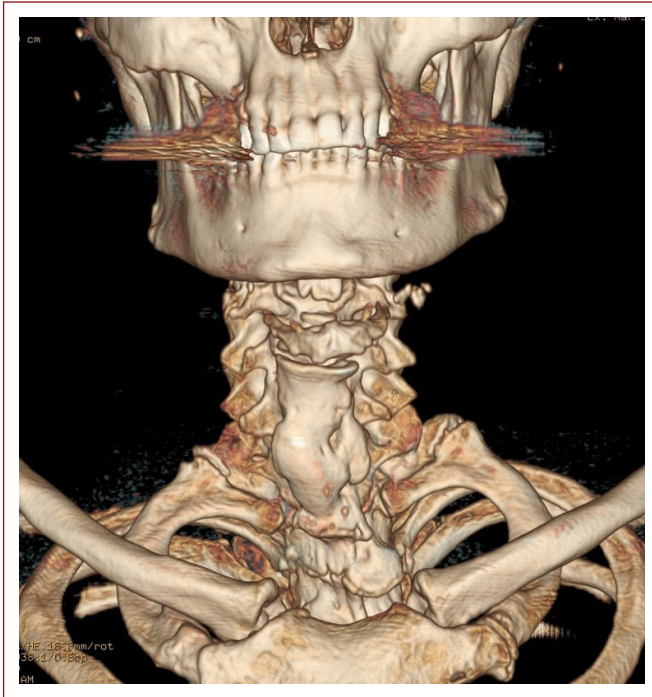
A lateral cervical spinal X-ray and cervical MRI revealed giant cervical osteophytes at the ventral portion of the C4/5/6/7 vertebral bodies, and contiguous calcification of the anterolateral cervical vertebra bodies. He had been previously evaluated for dysphagia with a barium esophagogram, which was discontinued due to inhalation of barium (Figure-1).



**Figure-1.** Fluoroscopic image of the barium swallowing study revealed a filling defect of the pharynx at the C5 level due to compression by an extended spur from a calcified ALL. There were no other irregularities or narrowing of the barium column.

Volume rendering reconstruction of a computed tomography (CT) image showed a thick and irregular spur protruding below the level of the hyoid bone (Figure-2).

Surgery was performed under general anesthesia with an anterolateral approach. The paravertebral region was exposed by retraction of the trachea and esophagus on the left side and the carotid sheath on the right side. Then, the paravertebral fascia was separated. The C4–7 level was exposed and identified by lateral fluoroscopy examination. The osteophytes were removed with Kerrison forceps and a diamond drill until the anterior spinal surface from C4 to C7 was flat with palpation and on testing with lateral fluoroscopy.



**Figure-2.** Volume rendering reconstruction of a CT image from the anterior shows a thick irregular spur protruding below the level of the hyoid bone. The calcified ALL segment starts from the C5 level and extends to the third thoracic vertebral body. Thyroid cartilage was removed to show the location of the calcification in detail.

Postoperative radiography showed expanded soft tissue density of the retropharyngeal area due to resection of the calcified anterior longitudinal ligament (Figure-3).

The patient received fluids one day after surgery. Non-steroidal anti-inflammatory drug (NSAID) treatment twice a day was given for one week. The patient was discharged on the second day postoperatively without any complications. Written informed consent for this case report was obtained from the patient.

## DISCUSSION

The ossification pattern of DISH involves the anterior longitudinal ligament, the lateral portion of the annulus fibrosis, and the adjacent vertebral bodies. The disc spaces and facet joints remain unaffected<sup>8</sup>.

Patients are commonly asymptomatic in DISH disease, but large anterior cervical osteophytes may lead to progressive dysphagia. The etiology of DISH is unknown. Dietary and mechanical factors, such as trauma, may be correlated with DISH<sup>5</sup>.

Lateral cervical radiography is important for diagnosis in patients with DISH. A barium esophagogram may demonstrate narrowing of the esophagus due to pressure from the ossification of the anterior longitudinal ligament. CT scans and MRIs of the cervical spine not only show the position of osteophytes but also show any expansion of the lesion, additional pathologies like malignancy, and the relationship of the esophagus and trachea lumens with the cervical spine<sup>1,2</sup>.

Recognition of this disease is important to explain the symptomatology of the patients. The differential diagnosis of DISH includes ankylosing spondylitis and cervical spondylosis<sup>2</sup>. In DISH, the integrity of the disc spaces and facet joints remains unaffected, unlike in cervical spondylosis. Although ankylosing spondylitis is a genetic disease with organ involvement, DISH has no genetic links or organ involvement.

Dysphagia caused by cervical osteophytes may be treated conservatively or surgically<sup>6</sup>. Conservative medical treatment includes non-steroidal anti-inflammatory drugs, muscular relaxants, steroid therapy, and anti-reflux drugs, in addition to modifying the patient's diet<sup>10</sup>. Surgical treatment is recommended if the dysphagia is severe and progressive, or if the patient does not improve with medical treatment. The surgical technique is removal of the large osteophytes<sup>3</sup>.

DISH should be suspected in patients with asphyxia and progressive dysphagia. Diagnostic methods, including barium swallowing studies and volume rendering reconstructions of CT images, may be helpful in demonstrating the external esophageal and laryngeal compression. Surgical treatment should be evaluated in patients with severe symptoms such as asphyxia.



**Figure-3.** Postoperative lateral X-ray image of the cervical spine shows the degenerative spurs extending from the edges of the upper cervical vertebrae, unified C5 and C6 bodies, and expanded soft tissue density of the retropharyngeal area due to resection of the calcified anterior longitudinal ligament.

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