

## Dysphagia in a Young Adult: Rare Case of Giant Cervical Osteophyte

### Abstract

Cervical osteophytes may be seen in diffuse idiopathic skeletal hyperostosis, ankylosing spondylitis, posttraumatic, postoperative, degenerative causes, cervical spondylosis, and infectious spondylitis. A cervical osteophyte is very rarely considered among the differentials for symptoms of dysphagia. C5–C6 as well as C6–C7 being a site of greater load-bearing and mobility, the propensity to form osteophytes is high, with a small osteophyte leading to local mass effect. A 42-year-old male patient presented with mild dyspnea and significant dysphagia since 8 months, accompanied by dysphonia, weight loss, and intermittent aspiration. Clinical examination including neurological examination was normal. A barium swallow showed that osteophytes were severely protruding and displacing the lower pharynx and the proximal esophagus anterosuperiorly. The patient underwent surgical removal of the osteophyte through Smith–Robinson approach. Complaints of dysphagia were significantly decreased in postoperative period. A thorough evaluation is necessary to rule out other causes of dysphagia. Surgical management of this uncommon condition might be considered after confirmation of the osteophyte to be the offending lesion as it has favorable clinical outcomes.

**Keywords:** *Dysphagia, giant cervical osteophyte, management*

### Introduction

Ossification and calcification of soft tissue and formation of osteophytes involving predominantly the anterior longitudinal ligament<sup>[1]</sup> is seen in about 30% of adults over the age of 60 years, with the incidence increasing with age.<sup>[2]</sup> Cervical osteophytes may be seen in diffuse idiopathic skeletal hyperostosis, ankylosing spondylitis, posttraumatic, postoperative, degenerative causes, cervical spondylosis, and infectious spondylitis.<sup>[3]</sup> The symptoms usually relate to surrounding structures when compressed. Dysphagia is the most common symptom and rarely nonspecific pain, decreased neck range of motion, stridor, dyspnea, dysphonia, hoarseness, foreign body sensation on deglutition as well as sleep apnea.<sup>[4,5]</sup> A cervical osteophyte is very rarely considered among the differentials. Hence, they are typically investigated after other factors causing dysphagia are ruled out. C5–C6 as well as C6–C7 being a site of greater load-bearing and mobility, the propensity to form osteophytes is high.<sup>[6]</sup> A large osteophyte at C4–C7 levels can lead to substantial mechanical constriction of esophagus. A small osteophyte coupled

with inflammation at cricoid level may lead to local mass effect.<sup>[7]</sup> Usually managed conservatively, for patients refractory to conservative management or with increased severity of symptoms operative management is advised. Cervical osteophyte causing dysphagia is generally seen in the elderly population. We report a case of a young male who presented with complaints of increasing dysphagia as well as change in voice and was diagnosed with giant anterior cervical osteophyte after a barium swallow by a gastroenterologist.

### Case Report

A 42-year-old male patient presented with mild dyspnea and significant dysphagia since 8 months. Gentle exertion and daily routine activities lead to shortness of breath. These symptoms had become worse around the time of his visit and were accompanied by dysphonia, weight loss, and intermittent aspiration. He complained of foreign body sensation. Various physicians failed to make an accurate diagnosis and the symptoms of the patient continued to deteriorate progressively.

The patient had no significant past surgical or medical history other than being a

**Abhinandan Reddy Mallepally, Vikas Tandon, Harvinder Singh Chhabra**

*Department of Spine Services, Indian Spinal Injuries Centre, New Delhi, India*

#### Address for correspondence:

*Dr. Abhinandan Reddy Mallepally, Department of Spine Services, Indian Spinal Injuries Centre, Vasant Kunj, Sector C, New Delhi - 110 070, India. E-mail: mabhi28@gmail.com*

#### Access this article online

**Website:** [www.asianjns.org](http://www.asianjns.org)

**DOI:** 10.4103/ajns.AJNS\_181\_19

#### Quick Response Code:



**How to cite this article:** Mallepally AR, Tandon V, Chhabra HS. Dysphagia in a young adult: Rare case of giant cervical osteophyte. *Asian J Neurosurg* 2020;15:218-21.

**Submission:** 17-06-2019      **Accepted:** 21-01-2020  
**Published:** 25-02-2020

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**For reprints contact:** [reprints@medknow.com](mailto:reprints@medknow.com)

smoker for the past 20 years. There was no abnormality of the tongue and oral cavity including hypopharynx on examination by an otorhinolaryngologist. Clinical examination including neurological examination was normal with no evidence of dysarthria.

No intracranial pathology was seen on magnetic resonance imaging (MRI) brain, done to rule out intracranial pathology. A barium swallow showed that osteophytes were severely protruding at the anterior portion of the 4<sup>th</sup>–6<sup>th</sup> cervical spine and displaced the lower pharynx and the proximal esophagus anterosuperiorly. In the oral phase, there was no abnormality other than premature bolus loss. In the pharyngeal phase, esophagus was displaced anterosuperiorly with constriction anterior to C5 vertebra. X-ray and computerized tomography (CT) scan of the cervical spine were done to confirm anterior cervical osteophytes and revealed the formation of large osteophytes anteriorly from 4<sup>th</sup> to 6<sup>th</sup> cervical vertebrae [Figures 1 and 2]. Osteophyte of the 5<sup>th</sup> cervical spine was the most prominent. It protruded 11 mm beyond the vertebral border. C-spine MRI was consistent with anterior herniation of the intervertebral disc with ruptured anterior longitudinal ligament. A T2-weighted image revealed high signal intensity with irregular enhancement. This could be a result of retropharyngeal irritation and inflammatory changes.

The patient had developed severe anxiety and sleep disturbances probably due to increasing severity of symptoms and lack of diagnosis. The patient underwent surgical removal of the osteophyte through Smith–Robinson approach. It included removal of the anterior osteophytes, C4–C5, C5–C6 cervical discectomy, interbody stand-alone

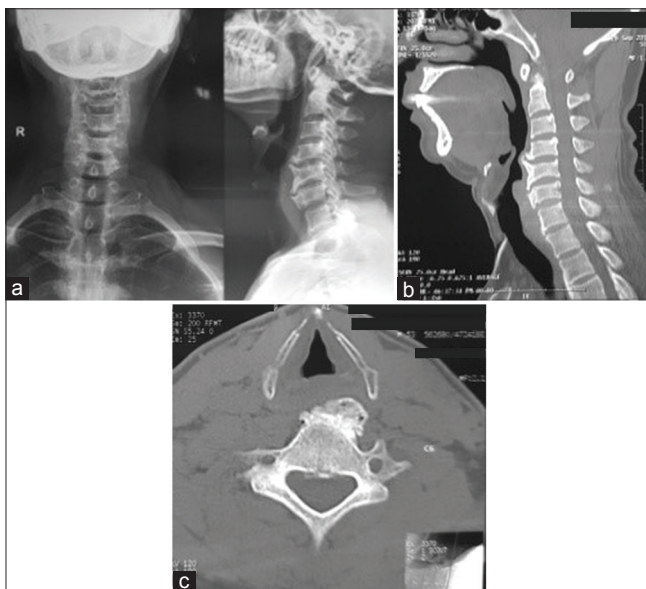
polyetheretherketone cage as well as bone graft. Complaints of dysphagia were significantly decreased in postoperative period [Figures 3 and 4]. He was started on normal diet 1 day after surgery. He also noticed a change in voice back to normal by 7 days. On further follow-up of 1-year, the patient was symptom free.

## Discussion

Dysphagia associated with cervical anterior osteophytes occurs mainly due to mechanical compression and displacement of surrounding structures. Concomitant pharyngoesophageal inflammation and fibrosis may further aggravate the situation.<sup>[8]</sup> Dysphagia is often seen with solid foods and is usually progressive. Conservative treatment methods are encouraged primarily. Patients refractory to conservative modalities are treated surgically with excision of osteophyte with or without fusion of the affected segments.<sup>[9]</sup>

Huge osteophytes located at the upper cervical spine may at times cause difficulties in intubation by narrowing the hypopharynx as well as displacement of the epiglottis and cords whereas osteophytes located at the lower levels may do so by pushing the trachea and larynx forward. Anesthetists must be mindful of this, and fiberoptic or videolaryngoscopic intubation should be preferred. Tracheostomy may be rarely needed due to possible airway problems preoperatively and postoperatively.<sup>[10]</sup>

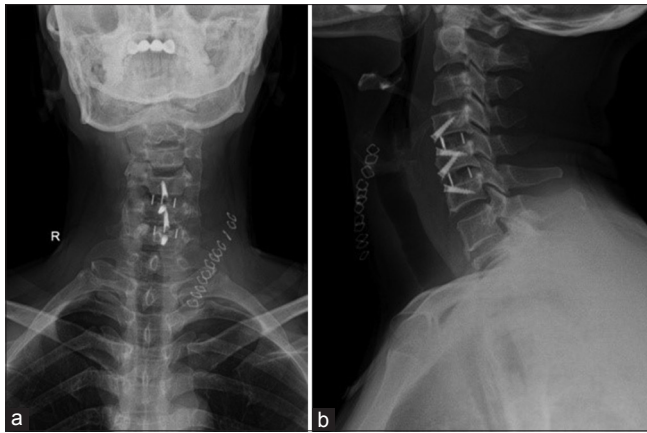
In the present case, besides the direct bony compression, the inflammation and edema in the retro-laryngopharyngeal space may also have been a cause for acute exacerbation of symptoms. The diagnosis and initiation of appropriate treatment was delayed probably since osteophyte induced dysphagia is very rare in young individuals. Simultaneous mild exertional dyspnea and dysphonia as well as absence of neck pain or cervical radiculopathy compounded this. If there is a presence of respiratory symptoms with dysphonia, neurological causes should be ruled out through, adequate investigations as was done for our case.



**Figure 1:** (a) X-ray of the cervical spine, anteroposterior and lateral view and (b) sagittal section of computer tomography of cervical spine showing large osteophytes at C4–C5 and C5–C6 disc level, with compression of esophagus. (c) In axial section at C4–C5 level, we can appreciate the large osteophyte extending anterolaterally on the left side



**Figure 2:** Preoperative barium swallow showing severe compression of the esophagus at the level of C5–C6



**Figure 3:** (a and b) Immediate postoperative images showing excision of anterior osteophyte and subsequent anterior cervical discectomy and fusion of C4–C5 and C5–C6 using standalone polyetheretherketone cage



**Figure 4:** Immediate postoperative barium swallow showing restoration of esophageal lumen with free flow of barium with no signs of constriction



**Figure 5:** (a and b) Barium swallow at 1-year follow-up showing no constriction at the instrumented level and no obvious osteophyte regrowth

Giant cervical osteophytes leading to dysphagia is not uncommon. It must be considered in elderly as differential diagnosis of dysphagia.<sup>[6]</sup> CT scan is required to confirm diagnosis, evaluate, and clearly define the bony anatomy. A barium swallow is essential to confirm the presence of esophageal compression by the cervical osteophyte and was the primary investigation which leads to diagnosis in our case. The presence of dyspnea and dysphonia, calls for MRI. MRI is also helpful to see coexisting spinal cord or root compression.

Some authors opine that osteophytes causing chronic dysphagia and dyspnea must be excised, because of possible progression to acute respiratory distress. Surgical excision has good long-term outcomes.<sup>[11]</sup> We performed fusion at both the levels as there was rupture of the anterior annulus of the disc and concomitant disc degeneration. Fusion may regress the formation of cervical osteophyte by taking care of abnormal mobility at the site.<sup>[5]</sup> Our patient is symptom free at 1-year follow-up with minimal radiographic regrowth [Figures 5 and 6].



**Figure 6:** (a and b) Cervical spine X-ray anteroposterior and lateral views at 1-year follow-up showing no osteophyte regrowth and no evidence of implant failure and fusion in progress

## Conclusion

A thorough evaluation is necessary to rule out other causes of dysphagia. Surgical management of this uncommon condition might be considered after confirmation of the osteophyte to be the offending lesion as it has favorable clinical outcomes.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## References

1. Mader R. Diffuse idiopathic skeletal hyperostosis: Time for a change. *J Rheumatol* 2008;35:377-9.
2. Parker MD. Dysphagia due to cervical osteophytes: A controversial entity revisited. *Dysphagia* 1989;3:157-60.
3. Resnick D, Shapiro RF, Wiesner KB, Niwayama G, Utsinger PD, Shaul SR. Diffuse idiopathic skeletal hyperostosis (DISH) [ankylosing hyperostosis of Forestier and Rotes-Querol]. *Semin Arthritis Rheum* 1978;7:153-87.
4. Castellano DM, Sinacori JT, Karakla DW. Stridor and dysphagia in diffuse idiopathic skeletal hyperostosis (DISH). *Laryngoscope* 2006;116:341-4.
5. Nelson RS, Urquhart AC, Faciszewski T. Diffuse idiopathic skeletal hyperostosis: A rare cause of Dysphagia, airway obstruction, and dysphonia. *J Am Coll Surg* 2006;202:938-42.
6. Schmidek HH. Cervical spondylosis. *Am Fam Physician* 1986;33:89-99.
7. Klaassen Z, Tubbs RS, Apaydin N, Hage R, Jordan R, Loukas M. Vertebral spinal osteophytes. *Anat Sci Int* 2011;86:1-9.
8. Marks B, Schober E, Swoboda H. Diffuse idiopathic skeletal hyperostosis causing obstructing laryngeal edema. *Eur Arch Otorhinolaryngol* 1998;255:256-8.
9. Laus M, Malaguti MC, Alfonso C, Ferrari D, Zappoli FA, Giunti A. Dysphagia due to cervical osteophytosis. *Chir Organi Mov* 1995;80:263-71.
10. Erdur Ö, Taşlı H, Polat B, Sofiyev F, Tosun F, Çolpan B, *et al.* Surgical management of dysphagia due to anterior cervical osteophytes. *J Craniofac Surg* 2017;28:e80-e84.
11. Maiuri F, Stella L, Sardo L, Buonamassa S. Dysphagia and dyspnea due to an anterior cervical osteophyte. *Arch Orthop Trauma Surg* 2002;122:245-7.