

AN UNUSUAL CAUSE OF DYSPHAGIA

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ABSTRACT

A case of dysphagia caused by anterior cervical osteophytes is presented. Although dysphagia and cervical spondylosis are common presenting problems, they are often unrelated to each other. The association between the two should, therefore, be accepted with caution; adequate investigation is necessary to avoid misdiagnosis.

Review of the literature showed that this condition is relatively rare. The most likely mechanism of dysphagia is interference with swallowing at the pharyngo-oesophageal junction, although osteophytes in the lower cervical spine may also interfere with oesophageal peristalsis. Apart from the osteophytes of cervical spondylosis, those resulting from Forestier's disease, or Diffuse Idiopathic Skeletal Hyperostosis (DISH) have also been described to cause dysphagia.

Keywords: dysphagia, cervical spondylosis, diffuse idiopathic skeletal hyperostosis

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CASE REPORT

A 54-year-old Chinese man was referred to our department complaining of a one-month history of feeling a "lump in the throat" causing a choking sensation on swallowing. Although the patient felt worse on swallowing, this sensation was present, all the time. He also complained of difficulty in breathing. However, there was no loss of weight, hoarseness of voice, neck-ache or any injury to his neck. He could not recall having ingested any fish-bone or foreign body. There was no past medical history of diabetes or alcoholism.

Physical examination showed him to be in good general condition. There was no goitre and cervical spinal movement was full and painless. There were no neurological findings that could be attributed to cervical spine pathology.

The chest X-ray was normal. Because of his presentation, a lateral neck X-ray was done to rule out any ingested foreign body. Instead, this revealed a large osteophyte at the third and fourth cervical vertebra protruding 5mm beyond the anterior margin. The intervertebral space was normal. There were smaller osteophytes in the other cervical vertebrae. A barium swallow was subsequently done to investigate his dysphagia and a filling defect caused by prominent anterior bony spurs at the third and fourth cervical vertebrae, impinging upon the posterior wall of the pharynx was demonstrated. There was no hold-up of barium and no mucosal irregularity. The rest of the oesophagus was normal. (Fig 1a & b). The serum blood sugar, calcium and phosphate levels were all within normal limits.

Having ruled out an oesophageal lesion, the cervical osteophyte was then considered to be the most likely cause of this patient's symptoms. The site of the osteophyte at the pharyngo-oesophageal junction had put it in a most appropriate position to interfere with the swallowing mechanism (Fig 2). Surgical treatment necessitated an anterior approach to the cervical spine. A longitudinal neck incision on the anterior border of the sternomastoid at the level of the thyroid cartilage was used. By dissecting between the carotid sheath laterally and the trachea and oesophagus medially, the anterior aspect of the

Fig 1a - Barium swallow. Lateral, showing osteophyte at C3-4 with indentation of the contrast column in the oesophagus.



vertebrae was exposed. Between the fibres of the anterior longitudinal ligament, a protruding osteophyte was seen arising from the third and fourth cervical vertebrae. This was indenting the posterior wall of the oesophagus which was otherwise normal. The osteophyte was drilled off until the anterior surface of the vertebral body became flat. The patient made an uneventful post-operative recovery, and could no longer feel the choking sensation when swallowing food. He has remained asymptomatic since. Fig 3 shows his post-operative X-ray.

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DISCUSSION

Anatomically, the oesophagus is anchored at two points; one, at the level of the cricoid cartilage and the other, at the diaphragm,

Fig 1b - Barium swallow. A-P, showing separation of the oesophageal contrast at the level of the C3-4 osteophyte.



Fig 2 - Pre-operative lateral cervical spine X-ray, showing osteophyte at C3-4.



Fig 3 - Post-operative lateral cervical spine X-ray. The anterior surface of the vertebral bodies is now flat.



while the remainder of the oesophagus from the neck to the abdomen is fairly mobile. Sites where a small osteophyte may cause symptoms are at or above the cricoid cartilage where the pharyngo-oesophageal junction is relatively immobile⁽¹⁾.

Cervical osteophytes can arise as a result of spondylosis, Forestier's disease, spinal osteoarthritis, intervertebral disc degeneration (where osteophytes develop as a secondary phenomenon), herniated calcified nucleus pulposus, congenital bone bar, or following trauma or infection⁽⁴⁾. In our patient, the cause was not clear on the history available and we attributed it to spondylosis. Schmorl described the osteophytes of spondylosis as those that form on the exterior surface at a point where the vertebral body joins the end plate and are not secondary to a serious deterioration of the entire disc. He also thought that they were related to the tension on the ligamentous bundles around the spine and also upon the peripheral part of the annulus fibrosus⁽⁵⁾. This is in accordance with our operative finding of normal hard bone and intervertebral disc. Though the rest of the cervical spine showed mild "lipping", we could not explain why the C3-4 segment was selectively affected.

Diffuse idiopathic skeletal hyperostosis (DISH) is a disorder first described by Forestier in 1971 as an ankylosing hyperostosis of the spine characterised by the appearance of large osteophytic spurs or bony proliferation in the form of anterior osseous bridges with a thickening of the corresponding vertebral cortex. The anterior longitudinal ligament and peripheral part of the disc are also ossified. The process shows a predilection for the thoracic and lumbar spine, though the cervical spine may occasionally be involved. It occurs more frequently in obese patients over 50 years with a slight male preponderance. An association with

diabetes mellitus, Dupuytren's contracture, hypoparathyroidism, essential hypocalcaemia, hypophosphatemia, fluorosis and the HLA-B27 antigen has been shown. The spinal changes of DISH are usually asymptomatic, though occasionally, there may be moderate spinal pain, mild restriction of movement and a slight increase in dorsal kyphosis and decrease in lumbar lordosis. In contrast to spinal osteomyelitis and other destructive lesions, the pain never predominates at night. In exceptional cases, dysphagia may result. In considering it as the spinal expression of a more diffuse "ossifying diathesis", the picture is completed by the frequent finding of outgrowths in the knee, shoulder, hip, pubic symphysis or sacro-iliac joint^(4,6). In our patient, the treatable conditions associated with DISH were excluded clinically and by pre-operative investigations. However, it may be the case that in future, some of the other skeletal manifestations may arise to enable us to revise our diagnosis.

Cervical osteophytes causing dysphagia should have demonstrable indentation of the posterior wall of the pharynx or the oesophagus on a barium swallow examination. On the A-P projection, obstruction of the central portion of the lumen with flow of barium laterally at the level of obstruction can be seen⁽⁷⁾ (Fig 2b). In the extended position, osteophytes encroach to a greater degree on the posterior pharyngeal or oesophageal wall. Oesophageal obstruction present in extension may not be seen in the flexed neck. For the same reason, endoscopists should not pass a rigid oesophagoscope in an elderly patient before seeing a lateral X-ray of the cervical spine⁽⁸⁾. Extending the neck⁽⁸⁾, swallowing a barium coated marshmallow to reproduce dysphagia during barium swallow are useful measures to confirm the obstructive nature of the osteophytes⁽⁷⁾. Tracheal aspiration of contrast and prevention of epiglottic retroversion can sometimes be caused by osteophytes at C3-4 level, accompanied by a choking sensation⁽⁷⁾.

In the literature^(1-3,6-10) reviewed, the age of reported cases of osteophyte induced dysphagia in 15 cases ranged from 61 to 85 years. Of these 15 cases, 11 were men and 4 were women. The osteophytes causing dysphagia were evenly distributed between

the upper (C2-4) and lower cervical (C4-7) spine. The presenting symptoms were predominantly dysphagia with resulting loss of weight. Dyspnoea, cough and stridor due to respiratory obstruction were present in a tracheal tumour in one patient. Hoarseness and impaired speech were seen in two patients and resulted from aspiration and frequent coughing. There was a case reported where surgical excision of the osteophytes failed to relieve symptoms because of a coexisting unrecognised oesophageal carcinoma⁽⁹⁾. This error emphasises the point that osteophytes should not be accepted as the cause of the patient's symptoms until other causes of dysphagia have been excluded.

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