DYSPHAGIA CAUSED BY CERVICAL OSTEOPHYTE

Report of a Case

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A woman aged forty-four was first seen in November 1970 for a feeling of a lump in the throat with dysphagia of two years' duration. The symptoms had become steadily worse. In the past she had complained of some aching in the neck. Examination showed bulging of the posterior wall of the hypopharynx. Barium swallow radiography revealed deformation of the junction of the hypopharynx and oesophagus by a large anterior cervical bony spur (Fig. 1). There was pronounced congenital malformation of the cervical spine, with two sets of block vertebrae comprising, above, the third and fourth, and below, the fifth, sixth and seventh and first thoracic. The posterior elements corresponding to the block vertebral bodies were also fused and hypoplastic (Fig. 2). Atlas and axis were normal. The one joint in the mid-cervical spine between the fourth and fifth vertebrae was the site of degenerative changes, with a large anterior beak directed slightly to the right, postero-lateral spurring encroaching on the foramina, and sclerosis of the faceted joints with narrowing.

The patient subsequently developed radicular pain in the right upper limb. There was no neurological deficit, but her difficulty in swallowing, together with the radicular pain, finally impelled the patient to accept operation.

Operation and progress—Operation was undertaken at the American University Medical Centre in March 1971. Head halter traction was set up, and an anterior collar approach was made from the right side. The affected level was easily identified by the large osteophytes. The oesophagus was deviated forwards and to the left. The intervertebral disc was very soft and fragmented. The exostosis was excised and anterior fusion carried out with an iliac bone graft without excision of the postero-lateral spurs.

The course after operation was complicated by infection of a haematoma by a beta haemolytic streptococcus. This responded to drainage and penicillin. The patient was discharged from hospital wearing a cervical brace.

The radicular pain subsided promptly after operation. Four weeks later the patient had no neck pain and the dysphagia had improved, but it was not until eight weeks after operation that the dysphagia had disappeared. Barium swallow radiography thirteen months after operation showed the straight course of the hypopharynx and oesophagus as well as the consolidated fusion (Fig. 3).

DISCUSSION

There are two remarkable features about this case: firstly, the large size of the osteophyte with the resultant marked deviation of the oesophagus and consequent dysphagia; and secondly, the malformation of the cervical spine.

It is probable that the existence of only one movable joint in the mid-cervical spine meant that it bore excessive stress, resulting in early degenerative changes. Fried, Chválová and Startlová (1967) reported an incidence of 0.6 per cent for formation of block vertebrae in the cervical spine. Their patients were aged between fifteen and eighty years. No instance was found in a patient under fifteen years of age. Hirsch, Schajowicz and Galante (1967) made no mention of any abnormality in 111 cervical spines of fresh cadavers of all ages; it is presumed that no abnormalities were found. Brain, Northfield and Wilkinson (1952) however encountered a significantly high incidence of "congenital" abnormalities of the cervical spine in patients suffering from cervical spondylosis: four instances were found in forty-five cases. This incidence—of nearly 9 per cent—is fifteen times greater than the general incidence. This would lend credibility to the observation made earlier by Brain and his
colleagues that the resulting disorder of mobility caused an excessive strain on normal joints and so caused or contributed to the development of the cervical spondylosis. It is only rarely that such changes are the cause of dysphagia. Nemours-Auguste and Barag (1960) examined 3,000 cervical spines with degenerative changes of persons between the ages of twenty-seven and 100 years. Only six cases of dysphagia caused by degenerative changes were found. On the other hand, Osborne, Savage and Strange (1960) found no case
<table>
<thead>
<tr>
<th>Author</th>
<th>Age (years)</th>
<th>Sex</th>
<th>Concurrent conditions</th>
<th>Radiographic level</th>
<th>Operation</th>
<th>Fusion</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bettin and Neuhorfer (1960)</td>
<td>16</td>
<td>Male</td>
<td>Hyperextension and flexion localised to the spine behind the cricoid cartilage</td>
<td>C4/5</td>
<td>Yes</td>
<td>No</td>
<td>Relief</td>
</tr>
<tr>
<td>Re and Rivera (1962)</td>
<td>48</td>
<td>Female</td>
<td>Constricting sensation in the throat</td>
<td>C4/6</td>
<td>Yes</td>
<td>No</td>
<td>Relief</td>
</tr>
<tr>
<td>Brooks and Ochsner (1964)</td>
<td>39</td>
<td>Male</td>
<td>Difficulty in speaking, hoarseness, pain in the neck and shoulder, and easy fatigability</td>
<td>C5/6</td>
<td>Yes</td>
<td>Yes</td>
<td>Relief</td>
</tr>
<tr>
<td>Facet (1967)</td>
<td>65</td>
<td>Male</td>
<td>Parasthesiae of the upper extremities</td>
<td>C6/7</td>
<td>Yes</td>
<td>No</td>
<td>Relief</td>
</tr>
<tr>
<td>Kuritama, Sato, Takayama, and Aoki (1967)</td>
<td>65</td>
<td>Male</td>
<td>Pain in the neck, shoulder, and arm</td>
<td>C7/4</td>
<td>Yes</td>
<td>No</td>
<td>Relief</td>
</tr>
<tr>
<td>Prohine (1987)</td>
<td>66</td>
<td>Male</td>
<td>Pain in the shoulder, neck, and arm</td>
<td>C6/5</td>
<td>Yes</td>
<td>No</td>
<td>Relief</td>
</tr>
<tr>
<td>Di Lella, Placanica, and Mover (1969)</td>
<td>59</td>
<td>Male</td>
<td>Pain in the neck, shoulder, and arm</td>
<td>C7/1</td>
<td>Yes</td>
<td>Yes</td>
<td>Relief</td>
</tr>
<tr>
<td>Benham (1970)</td>
<td>72</td>
<td>Male</td>
<td>Respiratory obstruction</td>
<td>C7/1</td>
<td>Yes</td>
<td>Yes</td>
<td>Relief</td>
</tr>
<tr>
<td>Brautivor and Sundan (1970)</td>
<td>70</td>
<td>Male</td>
<td>Hip condition for which patient was operated under general anaesthesia</td>
<td>C7/1</td>
<td>Yes</td>
<td>Yes</td>
<td>Relief</td>
</tr>
<tr>
<td>Sadek (1967)</td>
<td>70</td>
<td>Male</td>
<td>Pain in the neck, shoulder, and arm</td>
<td>C7/1</td>
<td>Yes</td>
<td>Yes</td>
<td>Relief</td>
</tr>
<tr>
<td>Saunders (1970)</td>
<td>73</td>
<td>Male</td>
<td>Cough while swallowing liquids, and hoarseness</td>
<td>C7/1</td>
<td>Yes</td>
<td>Yes</td>
<td>Relief</td>
</tr>
<tr>
<td>Varan and Jacobson (1971)</td>
<td>61</td>
<td>Male</td>
<td>Feeling of mass in the throat</td>
<td>C7/1</td>
<td>Yes</td>
<td>Yes</td>
<td>Relief</td>
</tr>
<tr>
<td>Tanabe and Hill (1971)</td>
<td>73</td>
<td>Male</td>
<td>Pneumonia (L) with empyema secondary to aspiration</td>
<td>C7/1</td>
<td>Yes</td>
<td>Yes</td>
<td>Relief</td>
</tr>
<tr>
<td>Tanabe and Hill (1971)</td>
<td>49</td>
<td>Male</td>
<td>Alcoholism</td>
<td>C7/1</td>
<td>Yes</td>
<td>Yes</td>
<td>Relief</td>
</tr>
</tbody>
</table>
of dysphagia due to cervical osteophytosis in 100 consecutive cases of dysphagia, nor was cervical spondylarthrosis the cause in 1,200 cases of dysphagia studied by Le Roux (1962). Most authors stress the importance of a barium swallow radiograph in the study of dysphagia. That cervical osteophytes can and do impinge on and deviate the pharynx and oesophagus is shown by Smith and Tanner's (1956) statement that in 75 per cent of twenty-nine cases of oesophageal and pharyngeal perforation during oesophagoscopy cervical osteophytes were a factor. This however does not mean that such patients necessarily had dysphagia.

It is doubtful whether simple mechanical distortion is the only factor in this condition, although in the extreme case reported by Saunders (1970), no barium entered the oesophagus and necropsy confirmed the severe compression of both oesophagus and membranous trachea by large osteophytes. There was no cancer and no other cause of death was found. However, in the case reported by Bettman and Neudorfer (1960) of an adolescent boy of sixteen with dysphagia due to anterior protrusion of a calcified disc, the barium swallow radiograph showed no defect; yet the dysphagia was promptly and completely relieved by excision and fusion.

Other authors have also noted that often the mechanical pressure of the osteophyte is not the only factor in the production of the dysphagia. In particular, Bauer (1953) and Benhabyles, Brattström and Sundén (1970) suggested that the dysphagia was caused by parapharyngitis or paraoesophagitis in relation to the protrusion producing fibrosis and adhesions and so preventing the normal gliding movements of the pharynx. Ruebe (1961) thought that the degenerative changes interfered with the pharyngeal plexus, so causing sharp retractions of the rear wall of the oesophageal orifice and disorders of muscle tone, thus inducing dysphagia. Prasad (1969) demonstrated a filling defect in his patient, and noted the free gliding of the pharyngeal wall over the mass. This was so in the case presented here; the finding was confirmed at operation, at which no unusual soft-tissue reaction was noted.

In the present case the dysphagia and brachial pain were relieved, but the patient still complained of tightness in her throat and of a feeling of having to clear her throat often. These symptoms are not explained by the cervical exostosis.

In some instances overlying inflammatory mucosal changes or oedema were found and symptoms subsided or improved when the inflammation was treated (Hargrove 1966. Ratnesar 1970).

Fusion is usually indicated after removal of the exostosis, to prevent recurrence and to relieve pressure on the nerve root. On the other hand, Hilding and Tachdjian (1960) found cases treated by simple excision of the osteophyte and added a similar case of their own. The literature from 1960 to the present time shows thirteen cases treated by operation (Table I), including two cases of dysphagia produced by calcified ruptured discs. Of these only five had both excision and fusion. In the case reported by Re and Rivero (1962), treated by simple excision of the osteophyte and followed up for six years, there was re-formation of the osteophyte and recurrence of the dysphagia.

When a clear diagnosis of dysphagia caused by cervical spondylosis is established, when the level of stenosis is confirmed and when symptoms are persistent and severe, treatment by operation is indicated. The results are good and the risk is small. Fusion is indicated except in old people, in whom the danger of recurrence is small.

SUMMARY

1. A case of dysphagia caused by a large cervical osteophyte is presented.
2. The literature from 1960 is reviewed, with special reference to the cases in which operation was done, and etiological factors are considered.
3. Excision of the osteophyte should in most cases be combined with fusion.

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REFERENCES


