CASE REPORT

Sternoclavicular joint osteophytosis: a difficult diagnosis to swallow

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SUMMARY

Unexplained dysphagia requires prompt investigation to rule out a possible underlying malignancy. We describe the case of a 60-year-old man who presented to his family practitioner with a 1-year history of increasing dysphagia with associated pain over the front of his chest. He was referred on to an ear, nose and throat specialist where no obvious laryngeal pathology was found at direct laryngoscopy, but an 'indentation' of the right anterior larynx, which increased with external pressure on the sternoclavicular joint (SCJ), was noted. A subsequent CT scan of his neck demonstrated osteoarthritis of the right SCJ with an abnormally large posterior osteophyte. The patient was subsequently referred on to an orthopaedic surgeon specialising in SCJ surgery and underwent an arthroscopic excision of his right SCJ. Soon after surgery, the patient's dysphagia had settled and his symptoms remain resolved 1 year post surgery.

BACKGROUND

Sternoclavicular joint (SCJ) pathology is an extremely rare cause of dysphagia due to mass effect. There are published reports of SCJ traumatic posterior dislocations and septic arthritis causing dysphagia.^{1–10} As far as the authors are aware, this is the first case reported of SCJ osteoarthritis (OA) presenting as dysphagia.

CASE PRESENTATION

A 60-year-old right-hand dominant man presented with a 1-year history of intermittent difficulty swallowing solids. He denied having a cough, shortness of breath, dysphonia or any weight loss. His medical history consisted of type II insulin-dependent diabetes, obstructive sleep apnoea and at the time of presentation he was a tobacco smoker, averaging 15 cigarettes per day. The only positive finding on examination was pain on palpation of the right superior lateral aspect of his sternum and neck.

INVESTIGATIONS

In the first instance, he was referred by his family practitioner to an ear, nose and throat (ENT) specialist for urgent investigation of dysphagia. A flexible laryngoscopy was performed and, although malignancy was ruled out, the investigation reported indentation and inflammation at the anterior aspect of the larynx. This enlarged with direct pressure over the right SCJ. This prompted

further investigation to determine the cause of the findings. A CT scan of the neck and chest demonstrated degenerative changes in both SCJs with an extremely large osteophyte extending posteromedially from the medial end of the right clavicle. The osteophyte extended approximately 10 mm posteromedially into the superior mediastinum towards the trachea (figure 1).

DIFFERENTIAL DIAGNOSIS

Patients presenting with dysphagia should undergo urgent investigation to exclude malignancy. Upper gastrointestinal endoscopy is usually the first-line investigation. Barium swallow is useful to diagnose high dysphagia or dysmotility, and an ENT specialist opinion should be sought if a pharyngeal cause is suspected.

There are multiple causes of dysphagia, generally falling into two categories: mechanical obstruction and motility disorders. Mechanical causes of obstruction can be intrinsic or extrinsic and benign or malignant. External pressure from SCJ pathology is a recognised but extremely rare cause of dysphagia. Most motility disorders are due to a neurological cause.

TREATMENT

Following the results of the flexible laryngoscopy and CT scan, the patient was referred to the senior author who is an orthopaedic surgeon with a special interest in SCJ surgery. An ultrasound-guided injection of local anaesthetic and steroid into the right SCJ resulted in transient pain relief. On the basis of this response and the results of his previous investigations, the patient underwent arthroscopic excision of his right SCJ and associated osteophytes.¹¹ At the time of his surgery, the posterior clavicular osteophyte was 'debulked' from within the joint. To avoid any injury to the posterior mediastinal structures, the most posterior tip of the bone and the attached capsule were left in situ, so that the posterior capsule of the joint was not breached.

OUTCOME AND FOLLOW-UP

The day after his surgery, the patient had already noticed an improvement in his swallowing. A postoperative CT scan showed evidence of satisfactory excision of the posterior osteophyte from the medial end of the clavicle (figures 2 and 3). At the 6-week follow-up appointment, his dysphagia had settled completely and his symptoms remain resolved 1 year post surgery.

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Figure 1 Axial slices of CT showing large osteophyte extending from posterior medial aspect of right clavicle.

DISCUSSION

Disorders of the SCJ can be divided into traumatic injuries and non-traumatic disorders. Injuries occur on a spectrum from minor sprains to complex fracture dislocations. By far and away the most common condition to affect the SCJ is OA. A CT scan study demonstrated OA changes in over 90% of patients over the age of 50 years.¹² While this is almost always asymptomatic, when it does present, it is usually with localised pain and reduced function of the affected shoulder. Due to its subcutaneous position, SCJ OA often presents as a swelling or mass in the upper chest wall.¹³ This is due to the anterior joint osteophytes. A careful history and examination should differentiate the pain of SCJ pathology from that caused by acromioclavicular and shoulder joint pathology.

The SCJ is a diarthrodial synovial joint and is, therefore, afflicted by the normal spectrum of non-traumatic degenerative, inflammatory and infective arthritides. It is also susceptible to a number of relatively rare conditions, such as the syndrome of synovitis, acne, pustulosis, hyperostosis and osteitis, condensing osteitis and Friedrich's disease. Robinson *et al*¹⁴ have published a diagnostic protocol for the investigation of non-traumatic sternoclavicular pain and swelling.

Superior mediastinal structures may be affected by SCJ pathology due to their close anatomical proximity.¹⁵ Traumatic fracture dislocations, particularly those displaced posteriorly, are

Figure 2 Postoperative CT showing excision of the posterior osteophyte from the medial end of the clavicle.

Figure 3 Three-dimensional volume-rendered CT of right sternoclavicular joint showing excision of the posterior osteophyte from the medial end of the clavicle, viewed from the anterior superior aspect.

known to be associated with dysphagia due to mass effect.¹⁻⁶ There are a number of case reports of patients developing mass effect symptoms following septic arthritis of the SCJ. Jamil and Hussain presented a case of vocal cord paralysis due to SCJ septic arthritis, with a large collection from the joint.⁷ Guillen Astete *et al*⁸ presented five cases of SCJ septic arthritis, two of which had mass effect symptoms thought to be related to capsular distension. Katsoulis *et al*¹⁰ presented a case of SCJ septic arthritis masquerading as rupture of the cervical oesophagus, with neck pain, dysphagia and cellulitis extending from the sternocleidomastoid region to the anterior upper chest. Das and Monga presented two cases of dysphagia associated with SCJ septic arthritis.⁹ They postulated that the dysphagia was due to the external compression on the oesophagus due to soft tissue oedema. In all of these case reports, SCJ pathology was the presenting issue and dysphagia was an associated symptom.

To our knowledge, this is the first case report of SCJ OA causing dysphagia and, unlike previous case reports, it was not initially the most obvious cause. The reason why the posterior clavicular osteophyte caused the patient to have only dysphagia is unclear. We suspect it was either pressure on the trachea preventing elevation of the larynx during swallowing or from indirect pressure on the oesophagus. However, we are unsure as to why the patient did not have any tracheal symptoms, it maybe that the cartilaginous rings of the trachea offered some form of protection. The improvement in symptoms postexcision identifies the posterior osteophyte as the likely cause of dysphagia.

Arthroscopic SCJ surgery is a relatively new technique and the results from our unit have been previously described.^{11 16} It was of particular benefit in this case as we were able to excise the posterior osteophyte from within the joint and did not have to breach any of the posterior mediastinal structures. A more traditional open procedure would have been a far more significant undertaking and would have risked damage or compromise to the posterior mediastinal structures.^{15 17-19}

This case report describes dysphagia as an unusual presentation of SCJ OA. The management of the patient was exemplary, in that

Learning points

- Unexplained dysphagia requires urgent investigation to rule out common and serious causes such as malignancy.
- Sternoclavicular joint pathology including osteoarthritis is a rare cause of dysphagia due to mechanical obstruction.
- Investigation of sternoclavicular joint pathology should include cross-sectional imaging such as CT.

his dysphagia was investigated for the more likely and significant causes of dysphagia before this unusual diagnosis was made.

Contributors JRG was the main author leading the writing of this case report. DIM contributed to writing the discussion and editing of the whole article. LvR helped with imaging, writing of the discussion and editing. GT-S was the operating surgeon and oversaw the writing and editing of all aspects of the case report.

Competing interests None declared.

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