CASE REPORT

An unusual pharyngeal mass

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SUMMARY

A 37-year-old man presented with an abnormal pharyngeal sensation. Nasendoscopy demonstrated a mass projecting from the left pharyngeal wall, which could be pushed medially with external pressure. A CT scan demonstrated a fracture of the hyoid. On further questioning, the patient stated that he practised Jujitsu, a sport involving various strangling manoeuvres. He underwent a pharyngoscopy and out-fracturing of the hyoid, resulting in complete resolution of his symptoms. Hyoid fractures are uncommon and can be difficult to identify clinically, but the serious nature of associated complications highlights the importance of making the diagnosis.

BACKGROUND

Patients with a suspicion of a pharyngeal or oesophageal foreign body, usually after eating, are often referred to ear, nose and throat (ENT) specialists. These patients typically report of an abnormal sensation in the throat and difficulty swallowing. The history is often clear; however, on occasion, these symptoms can have a more unusual cause. We report a case of a 'foreign body sensation' with an interesting final diagnosis. We feel this case demonstrates the need to take a full history and perform a thorough ENT examination in all such patients.

CASE PRESENTATION

A 37-year-old man presented to our ENT department with a sensation of 'something stuck in his throat'. He did not have any airway compromise and could swallow liquids as well as solids, albeit with some discomfort. The patient also reported discomfort in the left side of his neck at the level of the hyoid, a symptom exacerbated by external pressure. There were no other ENT symptoms and no previous similar episodes. He was otherwise fit and well, with no medical history; he took no regular medications. On further questioning, he mentioned that he practised Jujitsu, a martial art involving various strangling manoeuvres, although he denied any single point of significant trauma.

A full ENT examination was performed including fiberoptic laryngopharyngoscopy. There was no evidence of a foreign body, no salivary pooling and no gross laryngeal abnormality. When the patient was asked to valsava, a mass was visible projecting from the left pharyngeal wall, in the region of the hyoid bone. This mass could be pushed medially with external pressure at the point previously described by the patient (figures 1 and 2, and video 1).

Figure 1 Nasendoscopy at presentation without external pressure.

INVESTIGATIONS

A CT scan of the neck was arranged. This confirmed an isolated fracture through the left side of the hyoid bone, located between the body of the hyoid and the greater horn (figure 3).

TREATMENT

The patient was keen for surgical intervention in an attempt to improve his symptoms. Following discussions regarding the best approach to manipulate the fracture, a day case pharyngoscopy was performed, and an attempt to 'out-fracture' the hyoid bone was made. Direct pressure was exerted on the hyoid bone and the fracture was successfully

Figure 2 Nasendoscopy at presentation with external pressure.

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Video 1 Video of nasendoscopy without, and with, external hyoid pressure.

reduced. The patient was discharged the same day with no post-operative complications.

OUTCOME AND FOLLOW-UP

At 3 month outpatient follow-up, the patient was entirely asymptomatic.

DISCUSSION

The hyoid bone derives its name from the Greek word *hyoiedes*, meaning 'shaped like the letter upsilon'.¹ It is located in the anterior neck, at the level of the C3 vertebrae, between the thyroid cartilage and the mandible. It is relatively well protected due to its close proximity with the mandible, although this is lost on hyperextension of the neck. The hyoid bone is structurally composed of a central body, a lesser horn and a greater

horn and has muscular attachments assisting in a range of tongue, pharyngeal and laryngeal movements.¹

Hyoid bone fractures are rarely seen, accounting for only 0.002% of all fractures.^{1 2} Common causes include blunt trauma, often from road traffic collisions and hanging or strangulation. Other more unusual causes reported include stress fractures from self-induced vomiting,³ iatrogenically sustained fractures during cardiopulmonary resuscitation⁴ and avulsion injury from sudden neck hyperextension.¹

Hyoid fractures can be classified either by mechanism of injury (eg, inward compression, anteroposterior compression or avulsion)⁵ or by anatomical location of the fracture within the bone.⁶

Forensic stress experiments have found that on strangulation, 48% of hyoid fractures occur at the border between the body and greater horn, 49% in the greater horn and 3% in the median part of the body.⁷ Greater forces are required to cause hyoid fractures in younger, slighter built patients and those with a longer hyoid bone with a smaller hyoid angle.⁷

Although the majority of hyoid fractures are relatively symptom-free, significant complications can occur, and it is important to make an accurate diagnosis. Aside from acute airway compromise, these complications may include pharyngeal perforation and external carotid artery pseudoaneurysm.^{8 9} Given the forces often involved with fracture of the hyoid, coexisting injuries such as mandibular, facial and spinal fractures must be excluded.^{2 10}

Similar to this case, common symptoms include anterior neck pain, dysphagia, odynophagia, hoarseness and pain on head rotation. Only one-third of hyoid fracture cases reported in the literature have demonstrable abnormalities on laryngoscopic examination.¹⁰ Plain film X-rays and CT scans may not always identify a fracture.¹⁰ The use of external pressure in combination with endoscopic examination, as in this case, may aid in the diagnosis of these injuries. An additional technique suggested to increase diagnosis rate is a valsalva during laryngoscopic examination, a manoeuvre we would advocate as routine in all fibreoptic laryngoscopies.¹¹

Open hyoid fractures would require exploration and debridement. However, most fractures can be managed with conservative measures of analgesia, limited head movement and a soft diet.^{2 10 11}

Figure 3 Axial CT scan showing evidence of a left-sided hyoid fracture.

Learning points

- Fracture of the hyoid bone is a rare presentation that often requires a high degree of suspicion to ensure the diagnosis is not missed.
- Direct external neck compression of the hyoid during nasendoscopy can help identify an otherwise concealed fracture.
- Most hyoid fractures can be managed conservatively.

Competing interests None declared.

Patient consent Obtained.

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