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The clunking neck

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Abstract
A patient complaining of pain and noise on turning her neck was diagnosed as having a large greater cornua of the hyoid bone. Excision of the greater cornua relieved the symptoms.

Key words: Hyoid bone; Noise

Introduction

Pain attributable to the hyoid bone has been well documented. A number of syndromes including 'hyoid' (bone) syndrome are characterized by constant neck pain. Except for cases of fractured hyoid bone, neck noises have only been recorded involving the temporomandibular joint.

Case report

Case history

A 19-year-old girl presented with a three-month history of pain and noise on turning her neck to either side. She described the noise as a 'clunking' sound. She denied any trauma and had no other joint noises.

Physical examination

Examination revealed no abnormality in the pharynx, larynx or neck. She could demonstrate the 'clunking' sound on turning her neck in either direction. There were no other sounds elicited from joints elsewhere in the body and the sound did not occur when she swallowed.

Investigations

A CT scan of the neck showed no structural abnormality of the larynx or cervical vertebrae. The greater cornua of the hyoid bone was noted to be close to the lateral mass of the cervical vertebrae on both sides.

An examination under anaesthesia and pharyngoscopy showed that the 'clunking sound' stopped under a general anaesthetic. There was marked laryngeal crepitus and the prevertebral surface felt irregular. The greater cornua of the hyoid bone (on both sides) was prominent but it could not be ascertained if this was the cause of the noise.

Video fluoroscopy was performed, without contrast, and a video recording of the neck was carried out during active and passive movement in different degrees of flexion and rotation. A microphone and sound recorder were used. The patient was able to demonstrate the positions of maximal discomfort and the strange 'clunking' sound on turning her neck. This appeared to be associated with contact of the tip of the greater cornu with the cervical vertebrae.

Treatment

Excision of the greater cornu (left and right) of the hyoid bone was carried out separately, five weeks apart under general anaesthesia. In each case a transverse cervical incision was used and about 2 cm of the greater cornua excised. The noise and pain on turning the neck to the respective side disappeared immediately post-operatively after each excision. One reason the surgery was staged was because the patient was anxious when the possibility of injury to the hypoglossal nerve during surgery was indicated to her pre-operatively.

Discussion

The hyoid bone is the only bone in the body that is not connected to another bone. It develops from the pharyngeal arches: the greater cornu and lower body from the third, the lesser cornu and upper body from the second pharyngeal arch. In some animals (notably carnivores and ungulates), the hyoid bone is much more complex forming a 'hyoid apparatus' of several independent elements (Harrison, 1978). Animal studies have shown hyoid activity assists the lingual action in swallowing (*Gray's Anatomy*, 1989).

Joint noises are well documented. The most commonly found by otolaryngologists are those emanating from the temporomandibular joint. Typically a 'click' is heard and adolescent females are the most conscious of such sounds, peaking at the age of 19 years (Dibbets and van der Weele, 1992). The only documented noise attributable to the hyoid bone was a crepitus on neck flexion in the case of a fractured hyoid bone. This was treated successfully by tension band wiring. Excision of a fractured hyoid bone is recommended for patients who may still have crepitus or pain after wiring (Lakhia *et al.*, 1991).

Video fluoroscopy of our patient proved that contact between the greater cornu of the hyoid bone and the cervical spine caused the noise on turning the neck to either side. It has been shown that trauma or injury to the greater cornu of the hyoid bone may present as pain in the

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neck radiating anywhere from the shoulder to the temple (Ernest and Salter, 1991).

The hyoid syndrome relates to pain attributable to any part of the hyoid apparatus (hyoid bone, styloid process, stylohyoid ligament and hyoid thyroid cartilage junction). Mori *et al.* (1994) showed, by CT scan, four patients with hyoid syndrome, all of when had pain due to a structurally abnormal or malpositioned hyoid bone. All their patients had the pain corrected by excision of he greater cornu of the hyoid but there was no noise from the neck before surgery. Hyoid syndrome has also been treated successfully with depomedrone and lignocaine injections (Robinson *et al.*, 1994).

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