Available online at www.sciencedirect.com

ScienceDirect

British Journal of Oral and Maxillofacial Surgery 55 (2017) 899–903

BRITISH Journal of Oral and Maxillofacial Surgery

www.bjoms.com

Review

Hard neck lumps: a review of uncommon and sometimes overlooked causes of these worrying presentations

M.I. Ammar [a,b], R.S. Oeppen [c], C. Bowles [a], P.A. Brennan [a,*]

[a] *Maxillofacial Unit, Queen Alexandra Hospital, Portsmouth PO3 3LY, UK*
[b] *Department of Otolaryngology, Tanta University, Tanta, Egypt*
[c] *Department of Diagnostic Imaging, University Hospitals Southampton, SO16 6YD, UK*

Accepted 16 June 2017
Available online 23 August 2017

Abstract

While a neck lump is a common presentation that can raise suspicion of a potentially serious underlying disease, a hard lump, though less common, may be even more concerning for the patient, and prompt urgent investigation. Metastatic squamous cell carcinoma is the commonest underlying diagnosis that must be excluded, but other diseases or even normal anatomy of the neck can be associated with lumps that are hard or bony. Many of these presentations are relatively rare and may not be familiar to oral and maxillofacial surgeons (OMFS) (particularly more junior clinicians) as a differential diagnosis of a hard neck mass. We have reviewed these lesions to raise awareness of possible unusual causes, particularly when patients are not initially examined in a specialist neck lump clinic where ultrasound is readily available.

Keywords: Neck mass; hard; calcification; review; bone

Introduction

A lump in the neck is a common presentation both in general practice, and to departments of oral and maxillofacial surgery (OMFS) and ear, nose, and throat (ENT). Since cancer of the head and neck is the main diagnosis that requires exclusion, guidelines from the National Institute for Health and Care Excellence (NICE) recommend an urgent two-week referral to a specialty service for patients with a persistent, unexplained lump.[1] A hard lump is always worrying to both the patient and clinician,[2] as it may be the only presentation of an asymptomatic cancer of the aerodigestive tract, particularly when on the left side.[3] Other conditions or aberrant bony anatomy may present with a hard neck mass, but they are uncommon and therefore may be overlooked in the differential diagnosis.

We review these conditions and highlight their clinical features to improve the awareness of colleagues, particularly junior trainees.

Bone-related masses in the neck

The neck is demarcated by bony boundaries: superiorly from just above the lower margin of the mandible and base of the skull, and inferiorly by the clavicle and sternal notch. Together with the cervical spine and the hyoid bone, any part of this framework can be the origin of a hard bony mass on palpation. Other lesions, including inflammatory, neoplastic, or degenerative processes, may overlie prominent or aberrant bony structures.

The styloid process is pinnacle-shaped, cylindrical, and bony. It projects from the lower surface of the temporal bone

* Corresponding author. Tel.: +44 2392 286736; fax: +44 2392 286089.
E-mail address: Peter.brennan@porthosp.nhs.uk (P.A. Brennan).

http://dx.doi.org/10.1016/j.bjoms.2017.06.008

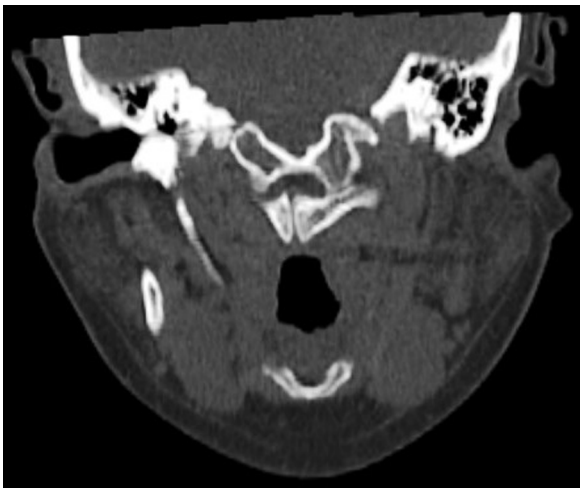

Fig. 1. Coronal computed tomogram showing elongated styloid process in a patient who presented with neck and throat pain.

and tapers downwards, forwards, and medially towards the lateral pharyngeal wall against the tonsillar fossa. In about 4% of the population it is elongated (more than 30 mm long). However, only 4%–28% of them will have symptoms of Eagle syndrome, which are caused by compression of nervous structures by the elongated process, or by ossification of the stylohyoid ligament.[4] Eagle syndrome is most common in middle-aged women in whom the tip of the styloid process or the ossified stylohyoid ligament can be palpated as a hard, tender lump in the area opposite to the tonsillar fossa and down to the hyoid bone.[5] Elongation of the process can also be asymptomatic. In both situations imaging, including orthopantography (OPG) and computed tomography (CT) to delineate any extension (particularly when symptomatic) can confirm the diagnosis (Fig. 1).[5]

A cervical rib is a supernumerary rib that arises from the seventh cervical vertebra (C7) with variable extension from just beyond the transverse process of C7 to complete fusion with the first rib. Only about 10% of people with a cervical rib complain of manifestations of thoracic outlet syndrome.[2] However, after weight loss it is common for a cervical rib to present with a hard lump in the lower part of the anterior triangle or the supraclavicular fossa, which will prompt a request for ultrasound-guided fine needle aspiration cytology (FNAC).[2,6] Clinicians should be aware of this normal variant, as simple tests can unmask both neurological and vascular manifestations that are associated with undiagnosed thoracic outlet syndrome. Chest radiograph (CXR) or CT can readily confirm the presence of an ossified cervical rib (Fig. 2),[6] but as unossified ribs are not shown clearly, particularly on CXR, magnetic resonance imaging (MRI) is recommended.

Transverse mega-apophysis is a lateral elongation of the transverse process of a vertebra, most commonly at C7, which can be unilateral or bilateral, and present as an asymptomatic bony, hard neck lump or with thoracic outlet syndrome. Absence of a costocervical articulation on plain film radiographs differentiates between a cervical rib and transverse apophysomegaly (Fig. 3).[7]

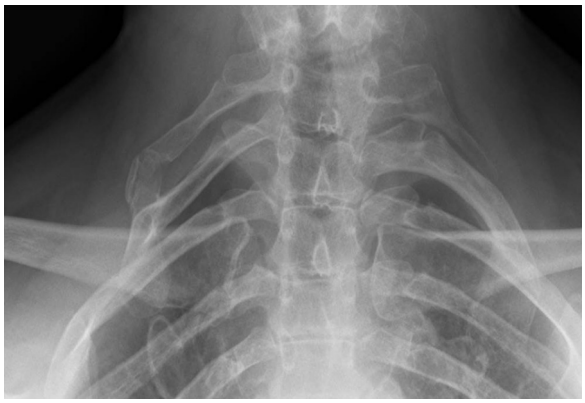

Fig. 2. Plain radiograph of cervical spine showing prominent right cervical rib.

Fig. 3. Transverse mega-apophysis (arrowed) at C7.

Fig. 4. Orthopantogram showing an osteoma at the right angle of the mandible.

Benign bony tumours

Osteomas that arise from the mandible or clavicle may present in the neck as slowly growing, stony, hard, painless, smooth masses. They characteristically move with movement of the bone of origin and, depending on their size and anatomical location, may cause compressive symptoms. Peripheral osteoma of the mandible can present as a hard mass on the lower border of the mandible (Fig. 4),[8] in the submandibular and submental triangles, or even in the parapharyngeal space,