An unusual pharyngeal mass: Tortuosity of the internal carotid artery

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Introduction

There are many causes for a mass arising from the posterior wall of the hypopharynx. The more common causes would include inflammatory and neoplastic conditions. This article describes an unusual cause as a result of tortuosity of the internal carotid artery and discusses its clinical implications.

Case report

A 67-year-old male patient presented with bleeding from 'the back of the throat' when brushing his teeth. He further complained of mild hematomasis on occasion. On clinical palpation there was slight tenderness on the left side at the level of the hypopharynx. Endoscopy revealed a pulsatile mass on the left side of the hypopharynx with erosion of the mucosa covering the mass. There was no evidence of a bruit on auscultation.

Axial contrast enhanced CT scans of the neck revealed retropharyngeal soft tissue widening on the left side. A markedly tortuous internal carotid artery was demonstrated in the prevertebral soft tissues on this side. The medial loop of the tortuous segment extended almost to the midline (Fig. 1). No calcification of the arterial wall was noted and the calibre of the artery was normal. A multi-planar volume reformatted image in the coronal plane confirmed the presence of marked tortuosity of the internal carotid artery with the medial aspect of the kink approximating the midline (Fig. 2). This caused a soft tissue mass to project into the airway of the hypopharynx (Fig. 3).

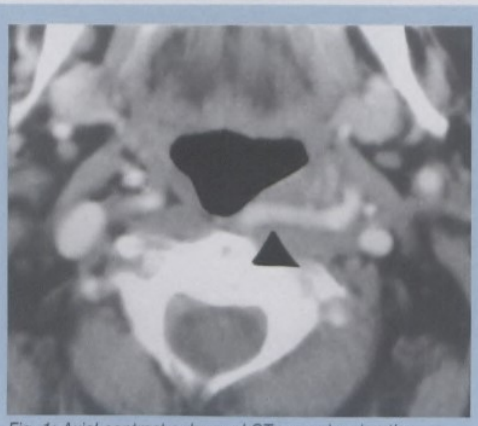

Fig. 1: Axial contrast enhanced CT scan showing the medial loop of the left internal carotid artery (arrowhead).

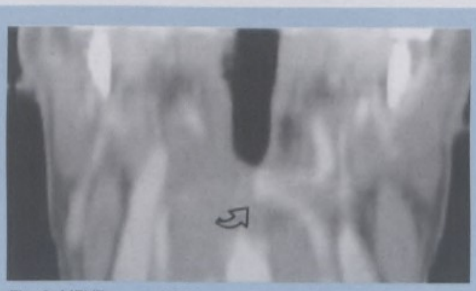

Fig. 2: MPVR coronal CT image. The medial loop of the left internal carotid artery extends to the midline (open arrow).

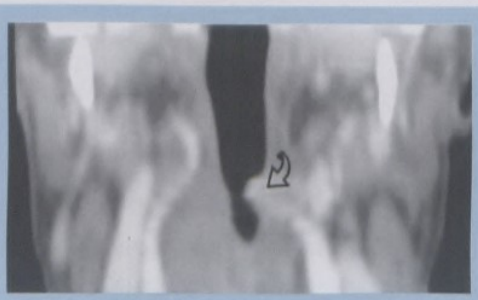

Fig. 3: MPVR coronal CT image shows the soft tissue mass projecting into the hypopharyngeal airspace on the left (open arrow).

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Discussion

The prevertebral space and retropharyngeal space form the cervical prevertebral soft tissues. The prevertebral space is bounded posteriorly by the anterior longitudinal ligament and anteriorly by the prevertebral fascia. The prevertebral fascia constitutes the posterior boundary of the retropharyngeal space while the buccopharyngeal fascia forms the anterior boundary. The only structures found in the retropharyngeal space normally are lymph nodes and lymphatic channels. The common carotid artery and internal jugular vein lie in the carotid space lateral to the retropharyngeal space.

Of the many abnormalities that involve this space inflammatory lesions, benign and malignant neoplasms and hematoma are the most common. Tortuosity and medial deviation of the carotid arteries are uncommon causes for widening of the retropharyngeal space or for a mass lesion arising from this site. Medial deviation of the carotid artery can occur as a congenital anomaly, but more commonly results from atherosclerotic tortuosity in the elderly. Although tortuosity is common, a midline presentation of this abnormality is rare.

It is important to recognise this condition because of the potential risk of injury during biopsy or surgical procedures. These could result in vascular injury with catastrophic results. Cases of peri-operative exsanguination following tonsillectomy have been reported. Anaesthetists should be aware of this abnormality, although there are no reported cases of carotid artery trauma or uncontrolled hypertension from vagal stimulation secondary to intubation.

If the carotid arteries are calcified, plain radiographs would be sufficient to diagnose this condition. If there is, however, no vascular calcification, CT or MR imaging of any pulsatile mass in the retropharyngeal space should be performed.

References

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