

Bilateral Retropharyngeal Internal Carotid Artery ‘Kissing Carotids’: A Case Report

A. Garmane^{1*}, S. Outaghyame¹, B. Slioui¹, N. Hammoune¹, S. Belasri¹, A. Mouhsine¹

¹Radiology Department, Avicenne Military Hospital, Marrakech, Morocco

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*Corresponding author: A. Garmane

Radiology Department, Avicenne Military Hospital, Marrakech, Morocco

Abstract

Case Report

Aberrant course of the internal carotid arteries is a rare congenital malformation, accounts for 5% of cases. Several cases of fatal hemorrhage due to an injury to the aberrant internal carotid artery have been observed in patients undergoing pharyngeal surgery procedures. This was associated with a lack of detection during surgery. We report a case of aberrant common and internal carotid arteries, manifested by odynophagia. This particular anatomical condition should be suspected in patients with pharyngeal mass before any invasive procedure.

Keywords: Bilateral retropharyngeal internal carotid arteries or "kissing carotids", odynophagia, case report, CT.

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INTRODUCTION

Aberrant internal carotid artery (AIA) is a rare congenital malformation [1]. In its cervical location, the incidence is estimated to be 5% [2]. At the beginning of the 20th century, several cases of fatal hemorrhage were reported during pharyngeal surgery, linked to its lack of recognition [3]. This condition should therefore be known to the specialist in otolaryngology (ORL). Often asymptomatic, an aberrant internal carotid artery can cause pharyngeal discomfort.

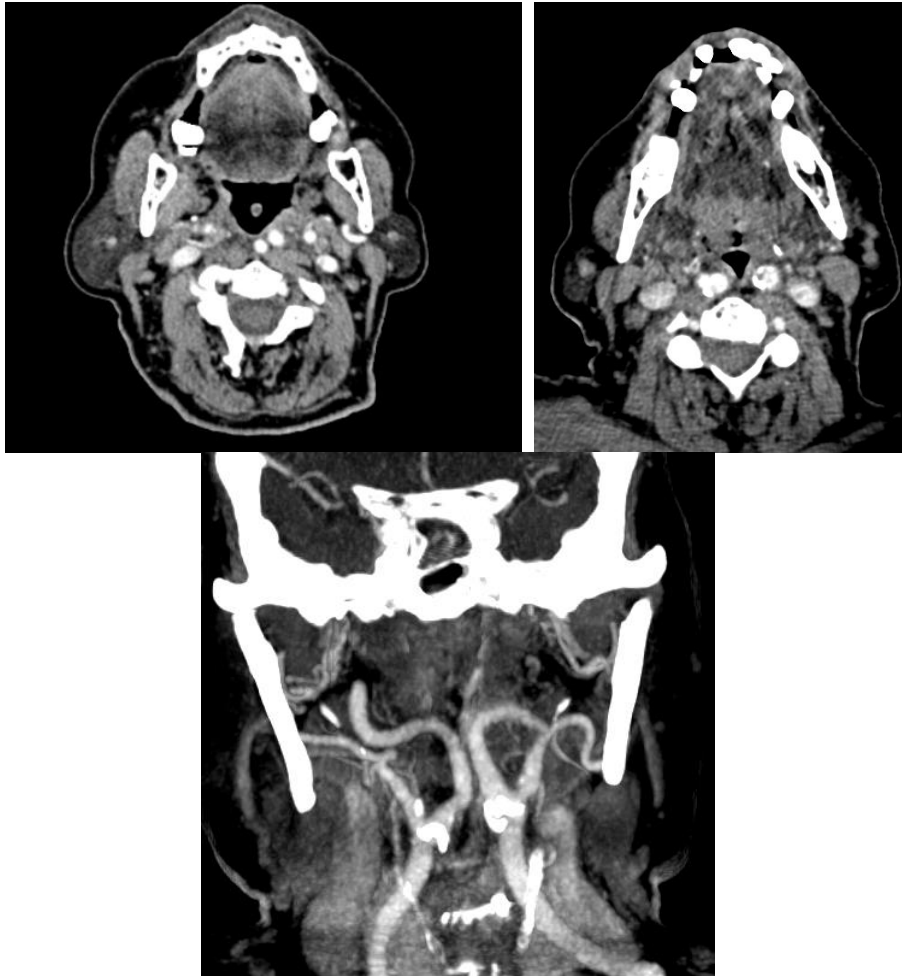
Anatomical variation of extracranial ICA is rare, estimated to be found in 5% of the general population. Anatomic variations of ICA could be anatomically classified into straight, tortuous, kinking, and coiling

The patient presented with bilateral tortuous CCA and ICA with retropharyngeal transposition, a variant colloquially referred to as ‘kissing carotids’

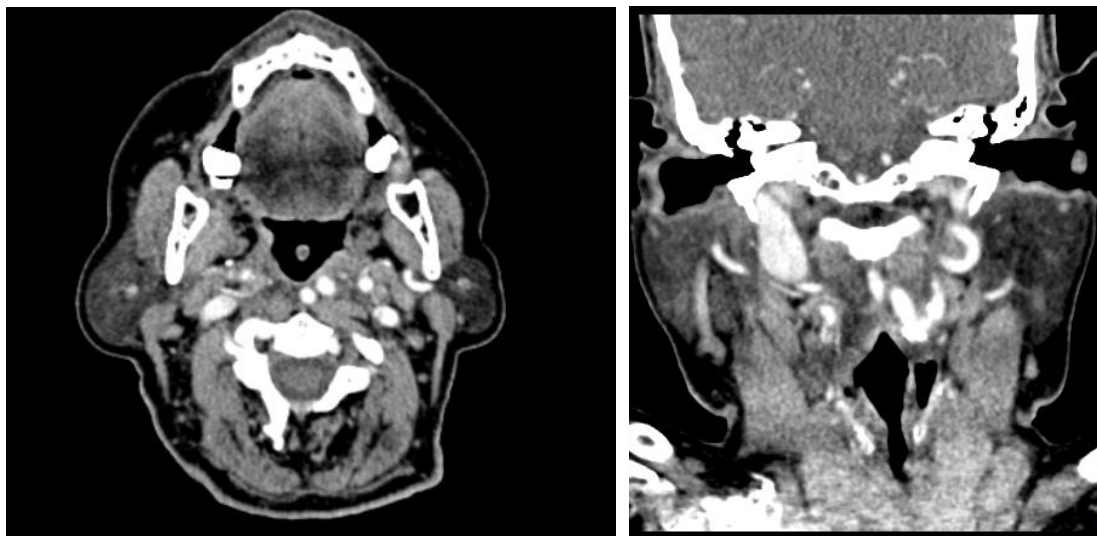
OBSERVATION

A 50-year-old female patient, with no specific pathological history, consulted for odynophagia without fever or alteration of the general condition. The physical examination showed a bulging of the bilateral posterolateral wall of the oropharynx, with normal mucosa opposite. The rest of the examination was unremarkable. The biological examination did not reveal any abnormalities.

An injected cervical CT scan showed an aberrant course of the common and internal carotid artery in their cervical portion, describing a submucosal loop, pushing the posterolateral wall bilaterally of the oropharynx. The diagnosis of an aberrant carotid artery was then made.



Cervical CT scan after injection with axial and coronal slices: Aberrant course of the common and internal carotid artery in its cervical portion, realizing the sign of: kissing carotids



DISCUSSION

Approximately 5% to 10% of the general population present with some kind of anatomical variation of the extracranial part of the internal carotid arteries (ICA), which are normally considered to have a relatively straight course through the neck [1-3]. These

variations include different degrees of kinking, tortuosity, coiling and unilateral or bilateral retropharyngeal ICA [3, 4]. It was recently found that the exact position of a retropharyngeal ICA may change between short-interval imaging studies. This could be attributed to the influence of respiratory or other type of movements on a retropharyngeal carotid system [5].

From an embryologic point of view, the carotids originate from the third aortic arch and the dorsal aortic root which descends into the chest during the eighth week of fetal life and thus lengthens and straightens the course of ICA. Persistence of this embryonic angulation results in the aberrant position of ICA [6]. This embryonic angulation may be further exacerbated by ageing, atherosclerosis or hypertension. Retropharyngeal carotids may be asymptomatic and incidentally found or cause symptoms like dysphagia, upper respiratory distress, change in voice or foreign body sensation in the pharynx [1, 7]. Retropharyngeal ICA are of great clinical significance as they pose a risk of injury during pharyngeal procedures like tonsillectomy or trans-oral drainage of a peritonsillar abscess. This risk becomes greater when the vessel is in close proximity to the pharyngeal wall. It is reported that ICA may be situated as little as 0.8mm deep to the mucosal surface. The kinked part of a kinking vessel is usually the one situated closest to the pharyngeal wall or the tonsils. As a result, such variations should always be communicated to clinicians once identified by radiologists [1, 3, 4]. Retropharyngeal carotids have important clinical implications for the anaesthesiologists as well. Namely, they may be easily injured during tracheal intubation, injection of local anaesthetics in the pharynx, placement of nasogastric tubes or transoesophageal echocardiography probes. As a consequence, clinicians should always consider the presence of retropharyngeal carotids prior to such kind of interventions, either by means of clinical examination or imaging modalities when available. The disruption of the local anatomy by these variants may predispose the patient to obstructive sleep apnoea [6]. Such variations may also give rise to non-traumatic prevertebral soft tissue thickening, which is evident on spine radiographs [2]. Intracranial kissing ICA in the

region of the sella may compress the pituitary gland and cause hormonal deficiency [8].

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