Bilateral Extracranial Aneurysms of Internal Carotid Arteries.
Investigation with CT-angiography.
Published on 20.03.2008

DOI: 10.1594/EURORAD/CASE.6247
ISSN: 1563-4086
Section: Cardiovascular
Case Type: Clinical Cases
Patient: 37 years, female

Clinical History:

We report a case of bilateral aneurysms of both internal carotid arteries in a 37-year-old woman who presented with a nonpulsatile retropharyngeal mass. CT-angiography disclosed the nature of the lesions. Arteriography, required for therapeutic decisions, confirmed the diagnosis.

Imaging Findings:

A 37-year-old woman presented to otolaryngology and ophthalmology emergency room reporting blurring vision for a few months and a sensation of a foreign body in the throat. She was afebrile and no symptoms of nausea or vomiting were referred. There was no history of diabetes or intravenous/intranasal drug abuse. The patient was not on any medication and had no allergies. CT scan (fig 1a,b) of head and neck was performed and demonstrated bilateral vascular masses at the carotid territories. Both masses showed massive calcification. Following MDCT angiography revealed bilateral carotid aneurysms with extend calcification provoking stenosis of both vessels (fig 2,3). Findings were studied with 2- and 3-dimentional imaging and volume-rendering analysis (figs 4a,b). The following carotid DSA showed as well the bilateral aneurysms of internal carotid arteries (fig 5a,b).

Discussion:

Extracranial aneurysms of the internal carotid artery are rare. They may present as a pulsative mass in the neck or pharynx, give rise to an isolated cranial nerve palsy or severe unilateral headache, cause massive haemorrhage from the oropharynx, nose and ear, or present with neurological deficits due to thromboembolic phenomenon. Cervical swelling is manly observed in cases of lower aneurysms sites where they may not be beating and pulsatile. Signs of ischemia (usually from transitory accidents) are often indicative. The aneurysm can also be revealed by voice impairment due to laryngeal compression, a dysphagia by esophageal compression and/or involvement of the last cranial pairs or the cervical sympathetic chain. Bilateral extracranial aneurysms are very rare and are usually secondary to atherosclerosis. Extracranial aneurysms of the internal carotid artery have been classified into five distinct clinical types: pseudoaneurysms, and fusiform, saccular, spontaneous dissecting, or mycotic aneurysms. Fusiform aneurysms are the most common and usually are secondary to atherosclerosis. They typically are unilateral, situated more inferiorly along the EICA than are the other types, and, in 15% of cases, are associated with additional aneurysms elsewhere in the body. Symptoms include transient neurologic deficits and stroke, which may vary by the location and size of the aneurysm. Small cervical aneurysms of the EICA may be asymptomatic. Larger aneurysms may present as a palpable mass in the cervical region near the angle of the jaw or internally as a pharyngeal or tonsillar mass, they may or may not be pulsatile, and they can rupture. Cross-sectional imaging techniques such as CT and MR currently are used to detect most morphologic lesions in the head and neck. These
methods not only distinguish vascular lesions from tumours but also differentiate ectatic or kinked carotid arteries from their dangerous, aneurysmal counterparts. On CT scan, EICA aneurysms, particularly the fusiform type, may have peripheral eggshell calcification and exhibit arterial enhancement after administration of contrast material. This may be better appreciated on MDCT angiography, because the acquisition can be performed in the arterial phase. MDCT is considered to have the same diagnostic value on detection of internal carotid artery aneurysm with conventional angiography which, till recent, was considered the criterion standard. On the other hand, conventional angiography has a 1% overall risk of complications; it is invasive, resource-intensive and costly and should be reserved for patients in whom internal carotid artery dissection is suspected. The finding of an extracranial aneurysm of the internal carotid artery most often leads to surgical treatment after specific morphological and topographical evaluation. Surgical intervention is always delicate, especially with high lesions, due to risks of emboli and/or lesion of peripheral nerves.

**Differential Diagnosis List:** Bilateral extracranial aneurysms of internal carotid arteries.

**Final Diagnosis:** Bilateral extracranial aneurysms of internal carotid arteries.

**References:**


Description: Bilateral masses extending from the carotid spaces with peripheral calcification which proved to be vascular after contrast administration. Origin:
Figure 2

Description: CT-angiography demonstrating bilateral aneurysms of internal carotid arteries.

Origin:
Description: Bilateral extracranial aneurysms and peripheral calcifications of internal carotid arteries
Origin:
Figure 4

Description: Volume rendering analysis confirming the aneurysm. Origin:
Description: DSA images demonstrating the aneurysm of right (a) and left (b) extracranial segment of internal carotid artery. Origin:
Description: DSA images demonstrating the aneurysm of right (a) and left (b) extracranial segment of internal carotid artery. Origin: