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## True aneurysm of the proximal occipital artery: Case report

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## ABSTRACT

**INTRODUCTION:** True aneurysms of the proximal occipital artery are rare, may cause neurological symptoms due to compression of the hypoglossal nerve and their resection may be technically demanding.

**PRESENTATION OF CASE:** The case of an aneurysm of the proximal occipital artery causing discomfort and tongue deviation by compression on the hypoglossal nerve is reported. Postoperative course after resection was followed by complete regression of symptoms.

**CONCLUSION:** Surgical resection, as standard treatment of aneurysms of the occipital artery, with the eventual technical adjunct of intubation by the nose is effective in durably relieving symptoms and preventing aneurysm-related complication.

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## 1. Introduction

Spontaneous, true aneurysms of the occipital artery are extremely rare [1–9]. They may be associated with neurofibromatosis or diseases of connective tissue [2] and occipital bone defects [3,7]. Pseudo-aneurysms may develop after traumas or surgical operations [4–6,9]. We now report the case of a true aneurysm of the proximal occipital artery causing discomfort and mild tongue deviation, due to compression over the ipsilateral hypoglossal nerve. This case is reported in line with the SCARE criteria [10].

## 2. Case presentation

An 83-year-old woman was admitted for the treatment of an pulsating, right retromandibular-infraauricular mass. She had no history of trauma, surgery, autoimmune disease, or infection. She reported first noticing the mass, as a friend pointed out a weaving of her earring on the right side. She also complained the recent onset of a mild deviation of the tongue on the right side. Computed tomography angiography revealed a 4 cm diameter aneurysm of the right occipital artery, located on its proximal, retro-mandibular course with scarce thrombus lining (Fig. 1) and excluded associated intracranial aneurysms. Given the setting of the aneurysm and the risk of potential dislodgement of embolizing material into the internal carotid artery, surgical resection was preferred to trans-catheter embolization. Under general anesthesia with intubation by the

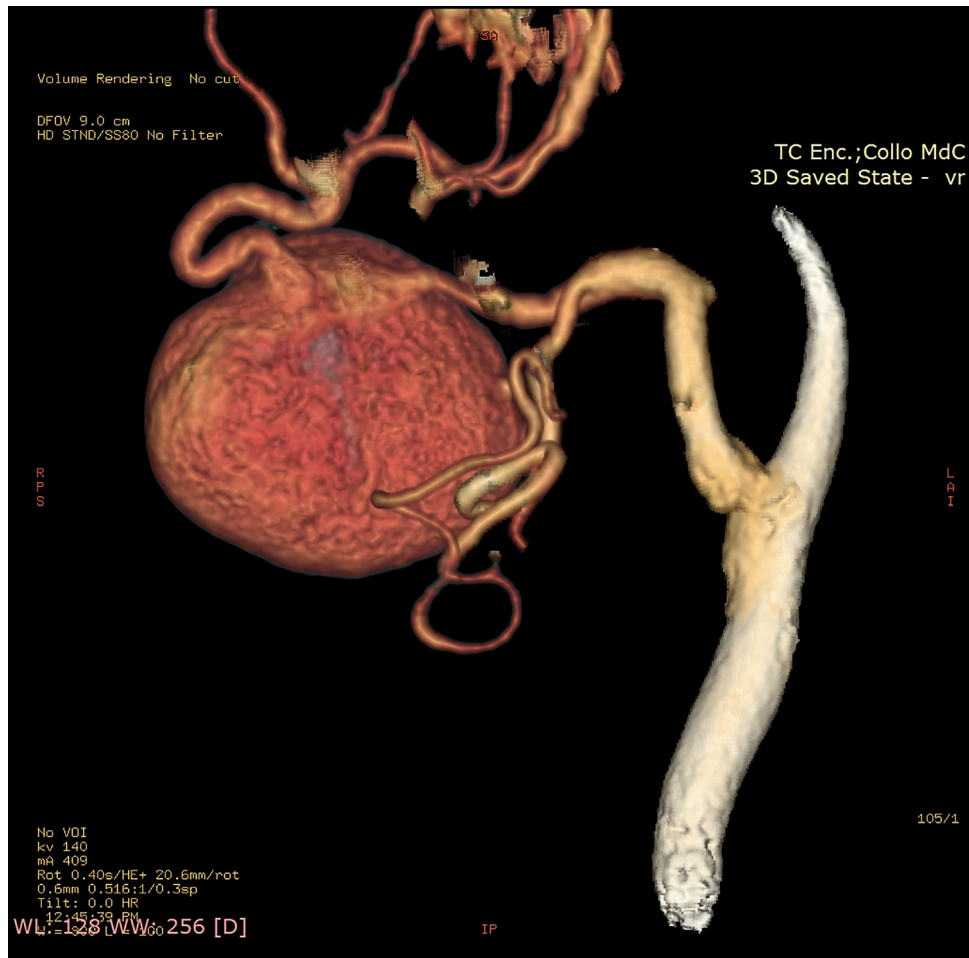
nose, the carotid bifurcation was exposed through a standard, pre-sternocleidomastoid incision, prolonged toward the mastoid process. The digastric muscle was sectioned. The hypoglossal nerve was identified, exposed on its crossing over the carotid bifurcation and gently mobilized by sectioning its descending branch, without surrounding it with a loop. After systemic heparinization, the external carotid artery was clamped on a vessel-loop and the aneurysm was gently detached from the hypoglossal nerve (Fig. 2). The occipital artery was ligated and the aneurysm was resected (Figs. 3 and 4). Subluxation of the mandible was not necessary. Histology was consistent with the diagnosis of a degenerative aneurysm. Postoperative course was uneventful and the right deviation of the tongue fully regressed within three weeks.

## 3. Discussion

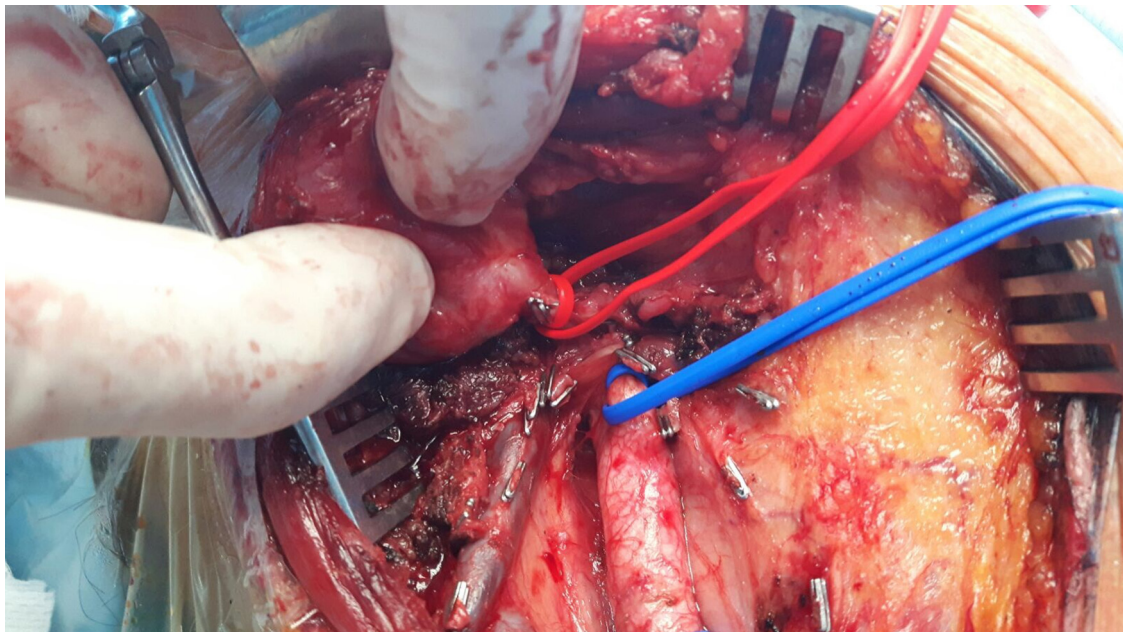
True degenerative aneurysms of the occipital aneurysm can be asymptomatic and appear as a pulsating mass or cause symptoms related to compression of the surrounding structures, usually with associated neuralgic. When dealing with aneurysm of the proximal occipital artery, compression or inflammatory adhesion to the hypoglossal nerve may cause tongue as in the reported case. Surgical resection is always indicated in order to prevent symptoms and complications related to aneurysmal growth. Timely surgical resection prevents rupture, allows durable cure and regression of neurologic symptoms. Depending to their location along the course of the artery, these aneurysm may pose different technical problems. Aneurysms involving the distal artery do not pose special technical problems of proximal and distal control of the artery. On the other hand, aneurysms of the proximal occipital artery are technically more demanding due to the neuro-vascular structures of

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**Fig. 1.** CT-scan imaging showing a saccular aneurysm of the proximal occipital artery.



**Fig. 2.** Intraoperative picture. After controlling the common and external carotid arteries together with the proximal occipital artery, the aneurysm is gently mobilized and detached from the hypoglossal nerve.

the retromandibular space and require control of the carotid bifurcation. Although mandibular subluxation may not be necessary,

intubation by the nose alone facilitates exposure and is advisable, especially when dealing with large aneurysms.

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