Occipital Artery Pseudoaneurysm: A Rare Scalp Swelling

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Abstract Traumatic pseudoaneurysm occurring in face and temple is commonly reported to occur in superficial temporal artery, and so far only four cases have reported involvement of the occipital artery. We report a case of 25-year-old male patient presented to us with a pulsatile swelling in the occipital region following a trauma at the same site 5 years ago. A CT angiogram revealed the pseudoaneurysm of the left occipital artery and was surgically excised after ligation of proximal and distal parts along the course of the occipital artery.

Keywords Traumatic pseudoaneurysm • Extracranial pseudoaneurysm • Occipital artery

Introduction

Posttraumatic pseudoaneurysms of extracranial arteries in the scalp are uncommon sequelae of head injury. There are several reports of such pseudoaneurysms in the literature, but, within the context of the extracranial arteries of the scalp, they refer exclusively to the superficial temporal artery [1]. Only four cases of traumatic aneurysm of the occipital artery have been reported since the first in 1644 [2]. Given the risk of potential complications such as life-threatening hemorrhage and rupture, most authors recommend excision.

Case Report

A 25-year-old male patient reported to the outpatient department with history of swelling in the left occipital region of the scalp for 5 years. The swelling had started insidiously, but there was history of trauma to the same site a month before the appearance of swelling. Swelling had gradually progressed and was occasionally associated with a headache. There were no other symptoms. On examination a solitary 5 cm×5 cm swelling in the left occipital region 3 cm behind the mastoid process was found which was firm, nontender, and mobile. The swelling was characteristically pulsatile. There was no skin discoloration or thrill or bruit. A clinical diagnosis of pseudoaneurysm and AV malformation was considered. A CT angiogram showed partial opacification of the swelling in arterial phase suggesting partially thrombosed aneurysm of the occipital branch of left carotid artery (Figs. 1 and 2). The patient was taken up for excision under general anesthesia. A linear incision was placed and a pulsatile mass was found. After achieving proximal and distal vascular control, the swelling was dissected from subcutaneous tissue and galea (Fig. 3). Postoperative period was uneventful. Histopathological examination was reported as pseudoaneurysm with hematoma.

Discussion

The anatomic locations of the superficial temporal artery, facial artery, and internal maxillary artery make them vulnerable to traumatic aneurysms. The occipital artery, on the other hand, is relatively protected throughout its course. After it branches from the external carotid artery, it is

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Fig. 1 CT scan axial section shows left occipital artery pseudoaneurysm

covered by muscle until it pierces the fascia of the trapezius muscle. From there, the occipital artery remains insulated by soft tissue on all sides [2]. Aneurysms of the distal branches of the external carotid artery are rare events and are generally described as sequelae of blunt, penetrating, or iatrogenic trauma. Traumatic aneurysms usually develop 2–6 weeks after blunt head trauma [3]. The diagnosis is based on the history and clinical examination. The differential diagnosis includes a hematoma, lipoma, cyst, abscess, inflamed lymph node, or a neuroma of an adjacent nerve. Also, it is important to confirm that the pulsatile mass is not a component of a scalp arteriovenous malformation (AVM). It consists of a large venous varix in the galea, into which multiple dilated scalp branches of the external carotid artery insert at several points [1]. Imaging strategies in the assessment of pseudoaneurysms include sonography, CT, MR imaging, and digital subtraction angiography [4]. Doppler ultrasonography

Fig. 2 CT Angiogram showing pseudoaneurysm along the course of occipital artery

Fig. 3 Operative image showing afferent feeding vessel & pseudoaneurysm

clearly demonstrates turbulent flow and dilatation of the involved vessel. CT scanning and CT angiography confirm the localized nature of the pseudoaneurysm. Any suggestion of a large emissary vein draining a venous varix in the scalp to a dural venous sinus through a defect in the cranium should prompt further angiographic evaluation to exclude a scalp AVM [1]. Indications in the treatment of occipital artery aneurysms include the reduction of the risk of hemorrhage, pain relief, and in most cases, the alleviation of cosmetic disfigurement. Treatment options in recent years include the simple resection of the pseudoaneurysm, proximal ligation of the parent artery, trapping of the pseudoaneurysm, and percutaneous ultrasound-guided thrombosis of the lesion, as well as endovascular arterial embolization and coil occlusion. As the occipital artery is subcutaneous in most of the locations affected by aneurysms, direct surgical ligation or excision of the aneurysm has most frequently been reported [4]. Pseudoaneurysm of the occipital artery is a rare scalp swelling and should be considered in the differential diagnosis of lesions in the scalp lying along the course of an extracranial artery, as biopsy or aspiration is likely to result in significant bleeding.

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