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Case Report 2

Low flow venous malformation lesion presented with medial canthal swelling simulating swelling of the lacrimal sac origin: A case report.

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Abstract

Low flow venous malformation lesions (e.g. cavernous venous malformations) are commonly seen in the orbit and peri-orbital area. Common conditions may present with unexpected presentation. Here we report a 50 years old male patient with low flow venous malformation lesion presented with medial canthal swelling similar to the swelling typically seen in lacrimal sac related pathologies.

Keywords: Low flow venous malformation, lacrimal sac disorders, medial canthus pathologies.

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Introduction

Swelling below the medial canthal tendon is typically related to pathologies of the lacrimal sac origin. [(1)] Benign or malignant lesions not related to lacrimal sac are rarely present with swelling below the medial canthal tendon. [(1)] Here we report a 50 years old male patient with low flow venous malformation lesion (e.g. cavernous venous malformation) presented with swelling below the medial canthal tendon. Histopathological examination of low flow venous malformation lesions reveal a non-encapsulated mass consisting of irregular, thin-walled vascular spaces, lined with benign flat endothelial cells.

Case Report

A 50 years old male was referred to oculoplastics clinic by a general ophthalmologist with swelling in the left medial canthal area with possible diagnosis of lacrimal sac mucocele. The swelling started six months back as a small lump, and it was increasing in size and pain. The patient denied history of trauma, eye redness or fever. He complained of eye watering occasionally with no discharges. He admitted that it was the first time to have such complaint. He visited a general ophthalmologist prior to presentation to our clinic and he was prescribed an oral antibiotic for one week as a case of dacryocystitis. The patient observed no improvement in his condition. The patient is not known to have any medical disease or previous surgery.

On examination, the mass was below the left medial canthus. It was round and measured about 2X2 cm (figure 1). The mass was not tender. It was firm in consistency without overlying skin changes. The lacrimal draining system was patent in both eyes. The mass was pulsating and synchronized with radial artery pulse. The visual acuity was 20/25 in both eyes. Anterior segment and fundus examinations were unremarkable.

Figure 1: An external picture of a part of the patient's face showing the mass present in the lateral nasal wall and left medial canthal area below the medial canthal tendon.

The initial impression and differential diagnoses were angular artery aneurysm, chronic dacryocystitis, venous malformation lesions, and other lesions like dermoid cyst. Subsequently, magnetic resonance imaging (MRI) was done and showed a round, well-demarcated heterogeneous soft tissue mass in the left medial canthal area. The mass showed diffuse enhancement following contrast injection (Figure 2).

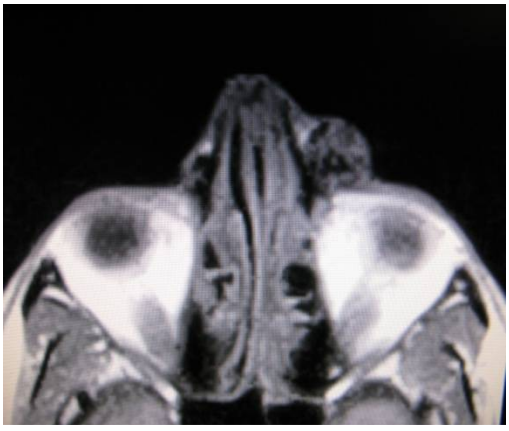

Figure 2: T1 weighted axial MRI showing a well-demarcated heterogeneous soft tissue mass in the left medial canthal area.

Excisional biopsy was done (figure 3). Histopathological evaluation revealed a non-encapsulated mass consisting of irregular, thin-walled vascular spaces, lined with benign flat endothelial cells and filled with red blood cells (figure 4 A-B). Radiographic and pathological findings were consistent with the diagnosis of low flow venous malformation (e.g. cavernous venous malformation).

Figure 3: Macroscopic appearance of the excised mass, showed a well-circumscribed tan-hemorrhagic mass.

Figure 4 A

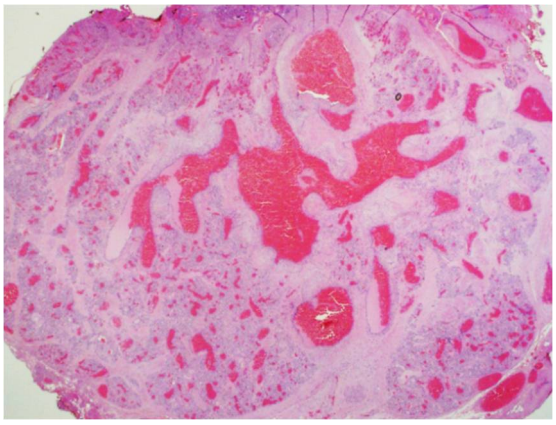

Figure 4 B

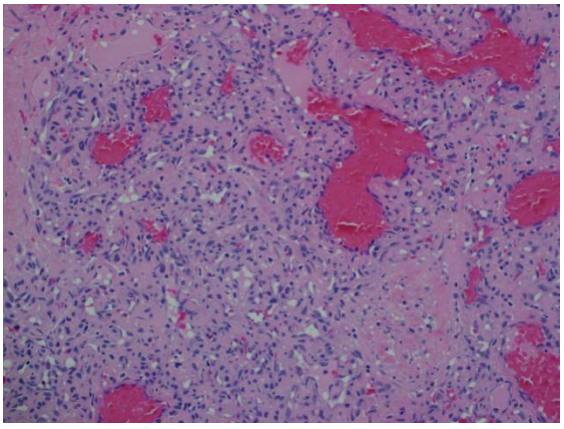

Figure 4 (A-B): (fig-4 A/x2) Microscopic examination of the excised material showing a well-circumscribed non-encapsulated vascular mass. (fig-4B /x20) This mass is formed mainly by irregular small to medium caliper thin-walled congested blood vessels that lined by benign flat endothelial cells.

Discussion

Lacrimal sac pathologies are considered initially in any swelling below the medial canthal tendon. [1] This includes chronic dacryocystitis, lacrimal sac tumors and lacrimal sac dacryoliths. Swelling below the medial canthal tendon is rarely related to pathology primarily arising in the medial canthal area and not related to the lacrimal sac such as dermoid cyst or varix of the angular vein. [2, 3] Other causes of swelling in the medial canthal area below the medial canthal tendon may originate in the orbit or paranasal sinuses and extend to the medial canthal area.

Vascular malformations may consist of any vascular elements (such as arteries, veins and lymph), either alone or as a combination of these elements. [4] Classification of orbital vascular malformations based on the International Society for the Study of Vascular Anomalies (ISSVA) classification can be applied. [5] Cavernous venous malformation is classified as a low flownon-distensible vascular malformation. There are different sites where vascular malformation can present, in which head and neck region is the most common (60%), followed by the trunk (25%) and the extremities (15%). [6] In our patient, the presentation was unusual and it was thought to be a case of chronic dacryocystitis because of the site of the mass, in which he was treated by a physician outside our hospital with an oral antibiotic. When the patient presented to our clinic, we noticed that the mass was pulsating and synchronized with the radial artery pulse. This made us thinking of the mass being either related to arterial aneurysm or other vascular malformations.

Identification of the lesion and its relation to the surrounding structures requires imaging studies. In case of vascular malformations, ultrasonography and MRI are the techniques of choice and they are superior to computerized tomography (CT scan) for diagnosis and follow up[7]. In our patient MRI images was not conclusive to reach the final diagnosis. Excisional biopsy was considered which confirmed the diagnosis of cavernous venous malformation.

Histological characteristics of cavernous venous malformation where identified as a single layer of endothelial cells lining densely aggregated thick- and thin-walled blood vessels. The walls of the thick-walled vessels contain mainly fibrous tissue, however, mostly contain some smooth muscles as well. [8]

In conclusion, we reported a case of an atypical presentation of cavernous venous malformation in the medial canthal region simulating lacrimal sac pathologies in presentation. This case highlights the necessity of careful examination and imaging of any suspicious mass before establishing a diagnosis. Confirmation of the diagnosis may

mandate the need of biopsy and pathological examination.

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