Magnetic Resonance Findings of Dacryocystocele in an Adult: A Rare Case

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Dacryocystocele is frequently thought to be a congenital disorder and is characterized by a dilated lacrimal sac. It is an uncommon illness in adults, nevertheless. It manifests as a painless protrusion beneath the medial ligament in the medial orbital area. Its mechanism consists of an acquired obstruction at the level of Krause's valve or an obstruction at the level of Rosenmuller's valve, which is proximal to the common canaliculus.[1-3]

In this study, a rare adult case of dacryocystocele was presented with magnetic resonance (MR) images of a 59-year-old woman. After obtaining written informed consent from the patient, the MR images were presented along with the clinical data of the patient in this article.

The patient was admitted to our institutional hospital with pain in the medial orbital region. The physical examination showed swelling and erythema in this area. Additionally, there was swelling and hyperemia in the medial epicanthic folds of the orbita. There was no positive finding in specular orbital values or corneal topography metrics. Pachymetry test-corneal thickness and all biometric tests were normal. Anterior chamber and vitreous humor were within normal ranges in the examination. Physical examination also indicated a mass in the medial, naso-orbital region with a relatively dark color suspected to be cystic mass located below the medial epicanthus and canthal region, indicating a pathologic condition in the nasolacrimal sac. With gentle pressure over the mass, a mucopurulent discharge was observed. The findings were consistent with dacryocystitis, and an antibiotheraphy has been planned. Findings of the infection have regressed; however, the mass in the naso-orbital region has been still remained, and the clinicians concluded that the patient should undergo MR examination.

The MR imaging indicated a lesion with smooth contours, observed with hypointense signals in T1-weighted images and hyperintense in fat-saturated T2-weighted images. After injection of the contrast medium, there was an obvious enhancement, especially in the peripheral regions of the lesion. The radiology report revealed an infected dacryocystocele (Figures 1-4).

The differential diagnosis for a patient with nasal obstruction includes congenital bone abnormalities such as choanal atresia as well as masses like encephalocele, glioma, hemangioma, and dermoid cyst.[4,5] These medical conditions can be diagnosed by endoscopy, computed tomography (CT), MR imaging, and the tear secretion test for differential diagnosis.

Adult cases of dacryocystocele should be treated as obstructions of the nasolacrimal duct, and before undergoing external dacryocystorhinostomy, an intranasal inspection should be carried out.[6] Endoscopic marsupialization of the nasal cyst combined with stent implantation appears to be the best course of treatment, similar to what is observed in pediatric patients. External dacryocystorhinostomy is also used as another option for treatment.[7]

While congenital dacryocystocele has been identified as a distinct disease, dacryocystocele in the medial orbital region is a rather uncommon condition. Almost all cases of congenital dacryocystocele occur in pediatric individuals, and the condition has a unique natural history, set of clinical characteristics, mode of disease, and course of treatment. Both functional blockage of the common canaliculus and obstruction of the distal nasolacrimal duct promote lacrimal sac dilatation. When there is an obstruction of the nasolacrimal duct, secretions may build up in the lacrimal sac, causing it to dilate and block the common canaliculus. A second explanation for dacryocystocele is folds in the common canaliculus brought on by a dilated lacrimal sac and a malfunctioning Rosenmuller's valve as a result of inflammation and edema.[8] Antibiotics, massage, and cold compresses are used to treat children with dacryocystocele. If these treatments are insufficient, intranasal endoscopic marsupialization of the cyst along with lacrimal route probing and irrigation might be a better option.[9]

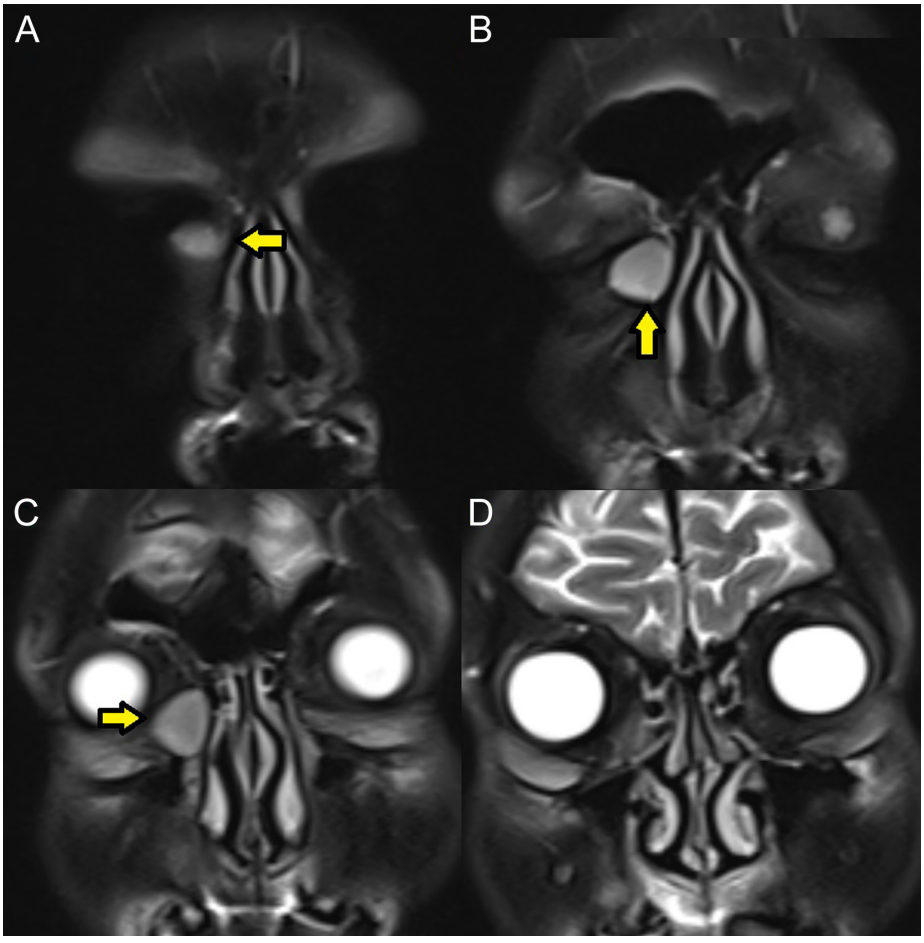

Figure 1. T2-weighted coronal plane consecutive MR images indicate the hyperintense lesion consistent with dacryocystocele (yellow arrows).

Adult cases of dacryocystocele have been reported in previous literature.[10] One of its clinical manifestations is a painless protrusion of the orbit's medial area beneath the medial ligament. The disorder can be diagnosed by MR imaging, CT, endoscopy, and the lacrimal secretion test.[11] The nasolacrimal duct blockage in adults is comparable with dacryocystocele in children regarding the mechanism of occurrence of the illness. In addition, chronic dacryocystitis is one of the complications of the dacryocystocele.[12]

Dacryocystorhinostomy and nasolacrimal stent placement have been used as treatment options for dacriocystoocele.[13] Distinguishing dacryocystocele from a lacrimal sac tumor may be essential before

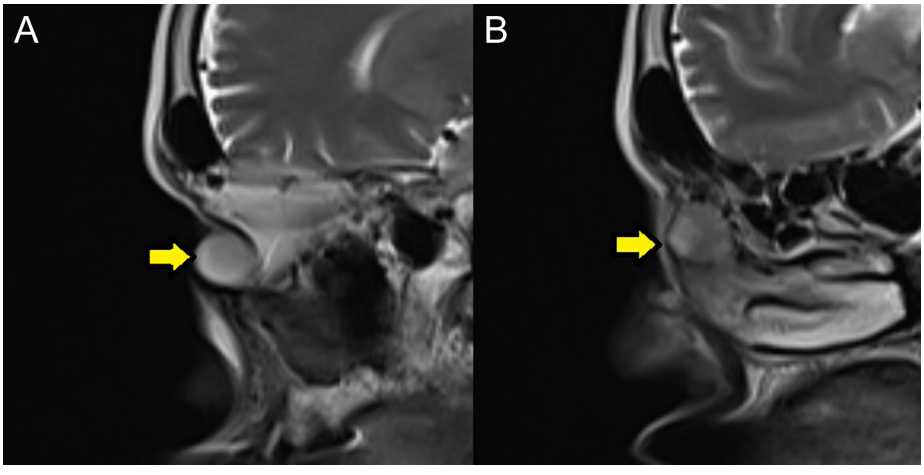

Figure 2. Sagittal plane T2-weighted MR images showing the lesion with well-defined borders (yellow arrows).

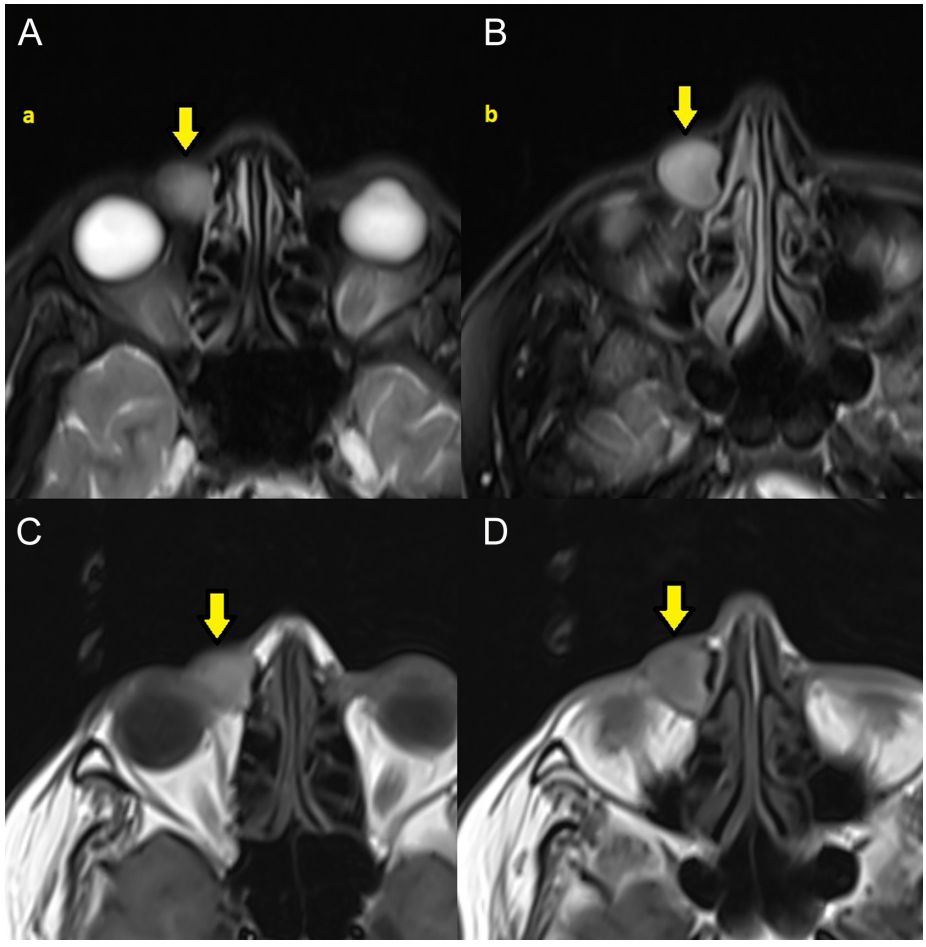

Figure 3. Axial plane T2-weighted (A, B) and axial plane T1-weighted magnetic resonance images (C, D) of the dacryocystocele (yellow arrows).

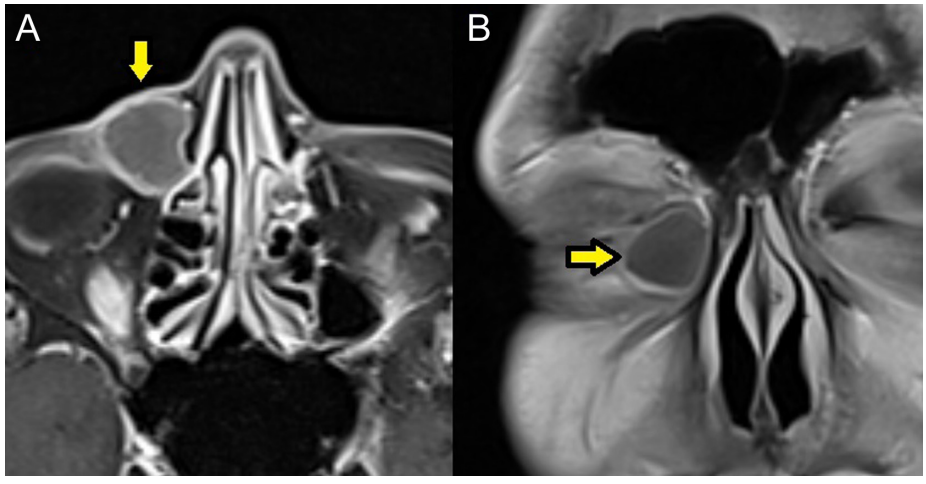

Figure 4. Axial and coronal plane enhanced T1-weighted images indicate the lesion with peripheral enhancement.

the surgical procedure.[14] Studies including CT, MR imaging, and ultrasound imaging are useful in the diagnosis of adult dacryocystocele. By displaying the dacryocystocele in the lacrimal sac and helping to distinguish it from other masses that may affect the medial canthus in adults, CT can accurately diagnose the condition anatomically. A solid mass can be observed on CT scans of orbital tumors in the medial orbital region, such as rhabdomyosarcoma, neurofibroma, lymphangioma, or hemangioma. Although CT provides a clear image of the cortical borders of the bone, MR images have also been used for this investigation to measure the lesion and

surgical planning using the superiority of this imaging modality on soft tissue contrast.

Data Availability Statement: The data that support the findings of this study are available on request from the corresponding author.

Informed Consent: Informed consent was obtained from patient who agreed to take part in the study.

Peer-Review: Externally peer-reviewed.

Declaration of Interests: The author has no conflict of interest to declare.

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