Multilobular Lacrimal Sac Diverticulum Presenting as a Lower Eyelid Mass

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Lacrimal sac diverticulum is a protruded pouch that generally exhibits communication with the lacrimal sac [1]. The pathology may cause epiphora, discharge, pain, and result in a fluctuating mass and cutaneous erythema. Usually, such a diverticulum is asymptomatic and is occasionally diagnosed with dacryocystography [2]. The lacrimal sac diverticulum may be of congenital, inflammatory, or traumatic origin [3]. Congenital origin should be suspected if there is no history of trauma or inflammation of the lacrimal sac.

In this study, we present two cases of a distinctive type of lacrimal diverticulum consisting of 2 to 3 lobules with patent lacrimal drainage system and presenting as a lower eyelid mass. This is a new description of the morphologic characteristics of a lacrimal diverticulum.

Case Reports

Case 1

A 5-year-old girl visited our clinic with a mass on the right lower eyelid for 10 days. She did not have a history of lacrimal obstruction, dacryocystitis, or trauma. She had mild epiphora and conjunctival discharge of the right eye. The non-tender, ovoid mass was fixed along the medial portion of the inferior orbital rim (Fig. 1A). It was not reducible and felt like an air-fluid mixture upon palpation. The lacrimal outflow system showed no obstruction upon lacrimal irrigation. Dacryocystography (Fig. 1B and 1C) and an orbital computed tomography (CT) scan were performed (Fig. 1D and 1E).

Under general anesthesia, exploration was performed using a subciliary eyelid incision. The mass was completely excised. From the operative findings, an inverted Y-shaped multilobular cystic mass was identified on the lateral side of the lacrimal sac. The lateral lobule, 1.2 cm long in the long axis, extended along and was firmly attached to the inferior orbital rim. The inferior rim of the bony orbit was remodeled and had a bony depression along the lobule. The inferior lobule
infiltrated 3 mm into the nasolacrimal bony canal and medially displaced the nasolacrimal duct. The superior lobule stretched upward and around the lacrimal sac posteriorly and medially. The lobule also pushed the lacrimal sac anteriorly and laterally (Fig. 1B). The mass was adherent to the lateral wall of the lacrimal sac at the center of the three lobules. There was fibrotic tissue between the mass and the lacrimal sac without visible communication. In the histological examination, the wall of the mass consisted of pseudostratified cuboidal and pseudostratified columnar epithelia (Fig. 1F). These findings were compatible with a lacrimal diverticulum or cyst originating from the lacrimal sac.

The patient did not exhibit any tearing symptoms or mass recurrence after 12 months of follow-up.

Case 2

A 50-year-old woman presented with a lower eyelid mass and epiphora for 2 months. She did not have any tearing symptoms or a history of dacryocystitis. The mass was firm and fixed to the inferior orbital rim. The overlying skin showed erythematous change (Fig. 2A). There was no tenderness, and no regurgitation could be elicited upon digital compression. The lacrimal drainage system was patent during lacrimal irrigation. Dacryocystography (Fig. 2B and 2C) and CT of the orbit were performed (Fig. 2D and 2E).

The mass was completely excised and consisted of inverted V-shaped lobules in the operative findings. The lateral lobule extended along the inferior orbital rim, to which its inferior border was fixed. The inferior lobule penetrated 3 mm into the nasolacrimal bony canal. The apex of the...