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PRACTICAL CASE

DACRYOLITHIASIS

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Lacrimal sac stones or dacryoliths are found in up to 7% of dacryocystorhinostomy (DCR) operations [Oliver J. 2002]. They are one of the causes of acquired nasolacrimal duct obstruction, although its origin is unclear. Stones consist of dried mucus, lipid, and inflammatory cells. The histologic examination of lacrimal stones reveals acellular amorphous organic material and areas of calcium salt deposition [*Lliadelis E., Karabatakis V., 2006; Repp D., Burkat C., 2009*]. The chemical analysis shows mainly organic and minimal inorganic material.

A dacryolith is a concretion within the nasolacrimal system. Dacryoliths may cause intermittent epiphora without inflammation or recurrent dacryocystitis may develop [*Oliver J., 2002; Aydin U. et al., 2007*].

Lacrimal sac stones are more likely to be found in chronically inflamed sacs with increased mucin producing cells, with or without complete nasolacrimal duct obstruction. They can be small soft flakes, multiple small granules, or a large single stone occupying the entire sac. Sometimes they can be identified as a filling defect at dacryocystography [*Oliver J., 2002; Moscato E., 2008*].

E.D. Lliadelis and V.E. Karabatakis reported the clinical and intraoperative characteristics of dacryoliths cases in a series of DCRs performed in northern Greece. At 242 DCRs in patients with chronic dacryocystitis, dacryoliths were found in 5 cases. These five cases occurred in relatively young patients. Symptoms were of short duration compared to other DCR cases. In three of them, irregularities of the lacrimal sac wall were observed [*Lliadelis E., Karabatakis V., 2006*].

The purpose of our report is to present an unusual case of dacryolithiasis, focusing on clinical characteristics, intraoperative findings, histology, and postoperative course. This is the first case report on dacryolithiasis in a patient with acute dacryocystitis presented in Armenia.

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Clinical case

A 37-year-old woman presented to the oculoplastic services of S.V. Malayan Eye Center in March of 2011 with complains of pain and swelling below the right medial canthus (Figure 1). She had history of intermittent epiphora from right eye during the last year. No trauma was reported.

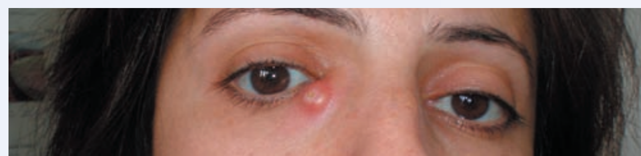

Figure 1. *Right lacrimal sac is enlaged and inflamed.*

On examination there was right acute dacryocystitis with lacrimal sac abscess formation. The patient was treated with systemic and topical antibiotics. The lacrimal sac abscess was drained. Despite this treatment, the acute dacryocystitis persisted. After three weeks of medical treatment without response, the patient underwent a dacryocystorhinostomy with the use of an external approach. After making the lacrimal sac flap, four lacrimal stones were found filling the cavity of the lacrimal sac (Figure 2).

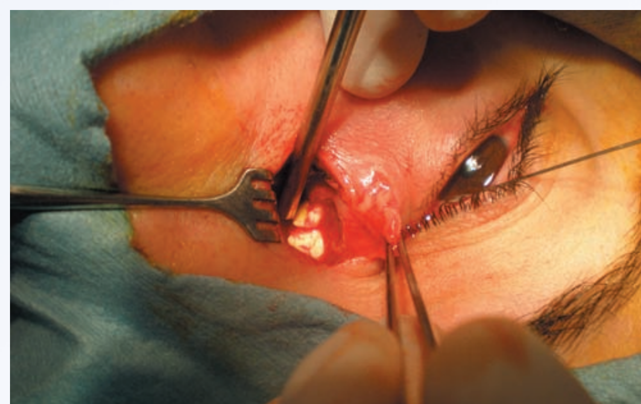

Figure 2. *Lacrimal sac flap is made, lacrimal stones are found in the lacrimal sac.*

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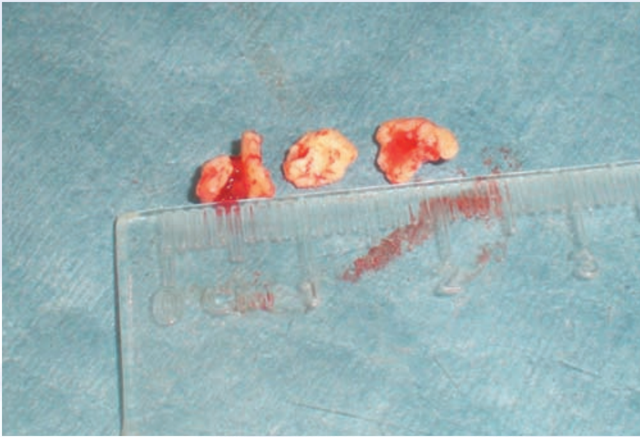

Figure 3. *Three lacrimal stones were removed; each stone is about 5mm.*

The dacryoliths, whitish concretions with irregular margins, were removed surgically. The size of each dacryolith was about 5 mm (Figure 3).

One dacryolith was reemoved from the nasolacrimal duct. Dacryocystorhinostomy was completed without complication. The post surgical period was unremarkable over 3 months of follow-up. Histology of the dacryoliths was consistent with carbonate hydroxylapatite.

In our republic, this is the first case of acute dacryocystitis with dacryoliths. As known, dacryolithiasis is very rare. In our practice, this is the first case of dacryoliths causing acute dacryocystitis. Our patient was effectively treated by dacryocystorhinostomy.

Ophthalmologists should be aware of possible dacryoliths in cases of long standing acute dacryocystitis that is resistant to the conservative medical treatment.

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