Atypical Presentation of a Dacryolith

F. P. Bernardini, M.D.,† R. C. Kersten, M.D.,* A. G. Spaulding, M.D.,* M. Moin, F.R.C.Ophth.,* and D. R. Kulwin, M.D.*

*Department of Ophthalmology, University of Cincinnati, Cincinnati, Ohio, U.S.A; and the †Department of Ophthalmology, University of Genoa, Genoa, Italy

Purpose: To describe the clinical features and management of a patient with an extralacrimal dacryolith.

Methods: Case report.

Results: A 43-year-old woman remarked at a routine eye examination that a small, firm mass located for several years on the right side of her nose had recently become slightly larger. The mass had remained firm and nontender during this enlargement. She explicitly denied having any past or current lacrimal outflow problems. Surgical excision disclosed a mass external to the lacrimal sac and duct, adherent to its lateral wall. The histopathologic features were consistent with a dacryolith surrounded by a chronic inflammatory reaction and no epithelial lining.

Conclusion: We presume that the dacryolith must have formed within the lacrimal sac and then migrated laterally into the surrounding soft tissue.

Calculi are often found in the canaliculi, lacrimal sac, or nasolacrimal duct. We describe a patient in whom a mass external to the lacrimal drainage system developed. This proved to represent a dacryolith, which apparently had migrated out of the nasolacrimal sac into the overlying soft tissue.

CASE REPORT

A 43-year-old woman remarked at a routine eye examination that a small, firm mass located for several years on the right side of her nose had recently become slightly larger in size. The mass had remained firm and nontender during this enlargement. The patient denied having epiphora or mucopurulent discharge. A complete ophthalmic plastic evaluation disclosed a firm mass adjacent to the anterior lacrimal crest. Dye disappearance test showed normal passage, and irrigation was patent into the nose without reflux or increase in the size of the mass. Extraocular motility was normal, and there was no proptosis. The lesion was thought to represent a deep epidermal inclusion cyst, and excision was planned. A subciliary incision was performed adjacent to the mass and dissection carried down to the inferior orbital rim. The mass was exposed and appeared to be lodged in the lateral portion of the lacrimal fossa at the junction with the bony nasolacrimal duct (Fig. 1A,B). The mass was distinct from the lacrimal sac and duct, but had one small point of the fusion with the lateral surface of the nasolacrimal duct–sac junction. Perilesional marked fibrosis was noted at that time, and sharp dissection was required to remove the mass, which grossly appeared to be discrete. After removal of the mass, a small defect was noted in the nasolacrimal duct, just below the sac. Irrigation through the lacrimal punctum produced reflux through the defect, and we elected to perform a dacryocystorhinostomy.

Gross histopathologic examination revealed an oval, firm 11 × 7 × 5-mm mass. Bisection revealed dense, white tissue with a soft center that measured 2 × 1 mm. Microscopically, this proved to be an

Accepted January 11, 2000.
Address correspondence and reprint requests to Dr. Robert C. Kersten, Barrett Center–0670, Suite 3008, University Hospital, 234 Goodman St, Cincinnati, OH 45219-2316, U.S.A.
amorphous, laminated structure by dense, fibrous tissue and chronic granulomatous inflammation (Fig. 2). The central core revealed a chronic abscess with numerous colonies of cocci demonstrated to be blue–black with Gram stain. Colloidal iron stain showed acid mucopolysaccharides suggestive of mucus, and alizarin red stain demonstrated several small orange–red sites pointing to minimal calcium deposits. A Gridley stain for fungi was negative. A diagnosis of dacryolith of the inspissated mucus variety was made. No structural similarities were noted between the inflammatory tissue surrounding the mass and the wall of the lacrimal sac, ruling out a lacrimal diverticulum.

DISCUSSION

Dacryoliths are found in the lacrimal sac at the time of a dacryocystorhinostomy in 12% to 18% of cases (1,2). The typical patient with dacryolithiasis is a young to middle-aged woman (average, 45 years old) with a long history of intermittent epiphora and one or more episodes of acute dacryocystitis (3). Less frequently, calculi can be found within diverticula of the lacrimal sac (4–6), in which case patients seek treatment for a medial orbital mass, and have no signs or symptoms of nasolacrimal duct obstruction.

The presentation of our patient was that of a diverticulum with a palpable mass over the medial canthal region, no signs or symptoms of nasolacrimal duct obstruction, and normal preoperative lacrimal outflow. Nevertheless, the mass adjacent to the lacrimal sac and duct was histopathologically identical to a dacryolith. There was no evidence of a diverticulum of the sac, and the dacryolith was clearly external to the lacrimal sac and duct, stuck to its lateral wall. The tissue surrounding the dacryolith was composed of chronic granulomatous inflammation. We presume that the dacryolith must have formed within the sac and then migrated laterally through the duct into the surrounding soft tissue. Any obstruction of the lacrimal outflow system accompanying this process remained asymptomatic. It is also unclear why the dacryolith migrated through the lateral wall of the sac, rather than remaining within the lacrimal outflow system. The location of the lesion immediately adjacent to the sac within the lacrimal fossa, and its histopathologic appearance, however, admit to no reasonable alternative other than an extralacrimal dacryolith.
REFERENCES