Lacrimal sac lymphomas

Expect the unexpected

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Primary lymphoma of the lacrimal sac

Primary lymphomas of the lacrimal sac (PLLS) are rare, but are a genuine cause of secondary acquired nasolacrimal duct obstruction.[1] The aim of the article on PLLS by Sjö *et al*[2] in this issue of the *BJO* (p 1004) was to define their clinical and histopathological characteristics. Their report on 15 cases of PLLS studied more than seven times the number of cases than the next largest publications defining this subject.

The authors, within the limits of a multinational (seven European nations), multicentre, retrospective, chart based study have achieved an excellent outcome in defining the histopathological features of the 15 cases of PLLS. The authors presumably assembled all the cases of PLLS they had on record, or could recall, from the two European pathology institutes that are named in their article. They were able to retrieve the relevant blocks, and to subject the specimens to a battery of stains with haematoxylin and eosin and an immunohistochemical panel with multiple antibodies. No less than five experienced pathologists examined each section, and in difficult cases a consensus diagnosis was reached. This is a superb approach to a rare clinical problem.

The authors demonstrated convincingly that B cell lymphomas were exclusive in this study. Five each of the 15 (33%) were diffuse large B cell lymphoma (DLBCL) and extranodal marginal zone B cell lymphoma of mucosa associated lymphoid tissue (MALT lymphoma). The authors found three ''transitional MALT'' lymphomas, and two unclassified B cell lymphomas, the latter so named because of an inadequate volume of tissue. As the authors point out, there have been fewer than 50 cases of PLLS reported in the past 30 years; in the series reviewed by the authors, DLBCL and MALT lymphoma were equally common in these reports, as in the current article. This lends credence to the notion that the authors had a valid sample of PLLS.

What is really fascinating about the pathology of PLLS is the premise of Matolcsy,[3] adopted by the authors, that persistent antigenic stimulation is required for tumour progression of MALT lymphomas to DLBCL. The very nature of dacryostenosis is such that chronic infections are regularly found in the lacrimal sac.[4 5] The authors point out that this chronicity may augment the antigenic load in the lacrimal sac and allow the progression of MALT lymphomas to DLBCL.

Clinically, on the other hand, the dacryologist is left with the message that the non-specific findings of epiphora (in 85%), swelling in the lacrimal sac region (79%), and dacryocystitis (21%) are the most frequent presenting symptoms and signs. A recent article by Valenzuela *et al*[6] confirmed that these findings are shared between lymphomas and epithelial tumours of the lacrimal sac. Valenzuela *et al* reported 11 lacrimal sac lymphomas in their cohort, but did not state if these were primary or secondary. Given the paucity of, and small size of the cohorts in, the reports of pure PLLS, a large prospective study of PLLS that could tell us which clinical abnormalities of lacrimal drainage are diagnostically discriminating, if indeed any are, will probably never eventuate. Thus the clinician must remain vigilant, firstly in assessing any patient with dacryostenosis, secondly in deciding for or against preoperative radiology, and finally in inspecting the anatomy of the interior of the lacrimal sac at the time of dacryocystorhinostomy (DCR).

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We offer the view that yet another of the many compelling reasons for performing mechanical endoscopic DCR is that the visibility of the interior of the sac is not surpassed by any other DCR technique. This concept was reinforced in the article by Merkonidis *et al*,[5] where the lacrimal sac wall was biopsied by ENT surgeons during 193 consecutive endoscopic DCRs. Interestingly, these authors concluded that lacrimal sac wall biopsy was a low yield procedure, and that it was only indicated if there were a reason to suspect any other pathology than simply chronic inflammation. This occurred in 1.2% of their series. On the other hand, Anderson *et al*[7] thought that all lacrimal sac walls should be biopsied at the time of DCR. Thus there has been significant debate in the literature regarding the value of lacrimal sac biopsy at the time of DCR surgery. As the literature presents this dichotomy of views between ''biopsy always'' and ''biopsy if the sac looks suspicious,'' the debate may rage. However, since the exposure and view of the lining of the lacrimal sac is superior with mechanical endoscopic DCR, the decision to biopsy may be rendered easier as mechanical endoscopic DCR surgery is increasingly employed worldwide.

The symptoms and signs in PLLS do indeed appear to be non-specific, and could easily allow the clinician to mistake them for those of primary acquired nasolacrimal duct obstruction (PANDO)[8] or functional nasolacrimal duct obstruction (FNLDO).[9] Even computed tomography of the lacrimal drainage region[10] may not distinguish between lesions of the sac that could be causing the relevant features of PLLS. Indeed, the clinician should always be aware that simple dacryostenosis may not be the correct diagnosis. The article by Zehavi *et al*[11] could in our view be regarded as seminal in assisting the clinician to maintain a high index of suspicion in what appears to be a simple case of PANDO. In this case report, a 56 year old woman was presumed to have PANDO, and was operated uneventfully with standard external DCR surgery. It was only several weeks after the surgery, when the tumour fungated through the healing external DCR incision, that the patient's anaplastic sinus carcinoma was diagnosed.

It is not absolutely clear on inspecting the tables in Sjö *et al*'s article how many patients had systemic spread. However, the authors state in the text that three of nine had systemic spread; this would suggest that PLLS is quite an aggressive tumour. Further, the fact that 35% of patients died within 5 years, possibly from their disease, suggests that the disease has a relatively grim prognosis. However, because eight of their 15 cases were diagnosed 15 years and more before this current publication in 2006, as long ago as the first half of the 20th century century, suggests that the availability and advances of modern oncological management might have made a difference to mortality. It also highlights the fact nowadays that a multidisciplinary team, preferably working in a major teaching hospital, and including the dacryologist, the ophthalmologist, the ENT surgeon, the medical oncologist, the radiation oncologist, and

the pathologist, should be involved in the management of such patients.

There was only one patient in the quoted literature on PLLS who had bloody epiphora. This would have been a symptom strongly recommending further preoperative evaluation, since in the ocular plastics unit at our institution, we have never seen bloody epiphora in PANDO or FNLDO; the symptom of bloody epiphora suggests sinister pathology. Two of Valenzuela *et al*'s[6] cohort had bloody tears, but it was not clear whether these patients had epithelial tumours or lymphomas of the lacrimal sac. Now that Jones 1 and 2 testing with nasal endoscopy is routine in dacryological practice, bloody epiphora might also have been confirmed by noting blood egressing the ipsilateral nasolacrimal duct of an affected patient.

Sjö *et al*'s study suffers from ill defined data sets in relation to many of the clinical details. For instance, of the 14 of 15 who had a tumour mass, it was not clear how many were palpable above the medial canthal tendon. Similarly, six of 15 had ''lacrimal sac obstruction'': one wonders if these were clinically indistinguishable from PANDO. While nine patients were presumably patent to syringing, it is not clear how many were distinguishable from FNLDO. Again, this may reflect the fact that the first patient in the study was first seen in 1948. Of the available data on treatment and outcome, the tumour led to the patient's death in only two of 10 of the 15 patients.

Sjö *et al*'s study has nicely encapsulated the literature on the histopathology of PLLS, and deserves to be heeded. The clinical features of the dacryostenosis of PLLS are not yet reliably available, but this study has initiated the quest.

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