CASE REPORT

Radical Resection for Naso-Lacrimal Duct Tumour

P G Vickers, FRCS, C L Shue, FRCS, H Ahmad, MS, Head Neck Surgery Associates, Gleneagles Intan Medical Centre, 50450 Kuala Lumpur

Summary

Naso-lacrimal duct tumours are uncommon and present with epiphora and swelling. Since the naso-lacrimal duct is embedded in bone for the majority of its anatomical length, the late presentation of proptosis is due to orbital extension of the tumour. Radical surgical treatment is necessary to establish clear margins and facilitate reconstruction.

Key Words: Naso-lacrimal duct, Orbit, Ethmoid sinuses, Optic nerve

Introduction

The naso-lacrimal duct is an uncommon site for a primary carcinoma. Like most head and neck tumours the presentation may be late due to the fact that expansion of the tumour is only evident once the bony confines has been breached. By then there is usually erosion and infiltration of the orbital complex as well as extension into the upper jaw, nose and ethmoids. Imaging is vitally important to delineate the extent of the tumour and to assess the feasibility of operation. Orbital extension of the tumour necessitates removal of the globe and contents while superior extension dictates a combined intracranial and extracranial resection.

Case Report

A 64 year chinese male presented on referral with a progressive 3-month history of left infraorbital swelling and epiphora. The chief complaints were a prominent left eye with restricted eye movements. An incisional biopsy through a small infraorbital skin crease histologically confirmed a poorly differentiated squamous cell carcinoma. The patients past medical history was positive for previously treated tuberculosis. There was no history suggestive of alcohol consumption or smoking.

Examination of the patient confirmed proptosis and a mass at the left medial infraorbital rim. Visual acuity and fields were satisfactory but he had diplopia on left lateral gaze. The globe was tense and the lids were unable to close. The neck was supple with no evidence of cervical lymhadenopathy.

Radiological examination including fine cranial CT and MRI sections disclosed a tumour that had eroded the infraorbital rim and displacing the eye (Fig. 1). There was an extension of the mass into the extraconal space between the medial rectus and the globe proper. The margins of the tumour were below the anterior and posterior ethmoidal foramens but the posterior extent was determined to be close to the optic foramen. Imaging of the chest and abdomen revealed no evidence of metastatic spread.

Subsequently he was admitted for subcranial resection through a combined bicoronal flap and Weber-Ferguson cheek splitting flap. The margins of resection included frontal bone, zygoma, ethmoids, nasal bones, maxilla and inferior turbinate. The eye was removed en-bloc with adjacent bone and soft tissue that included nose, upper and lower lids and upper jaw. A supra-omohyoid neck dissection was performed on the ipsilateral side. Frozen sections confirmed tumour clearance at all

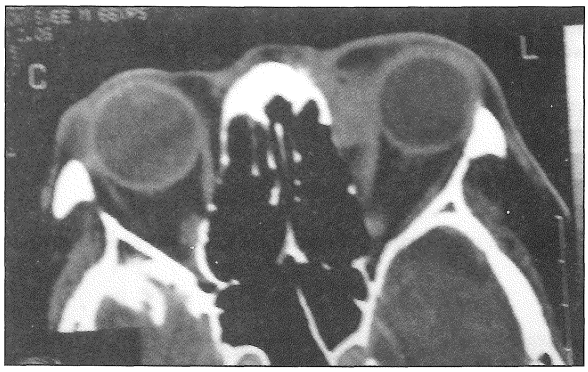

Fig. 1

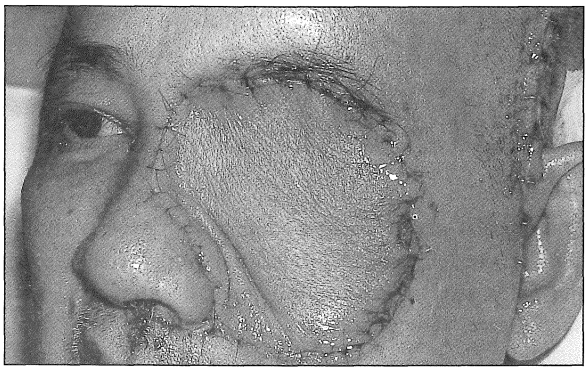

Fig. 2

margins and immediate reconstruction was performed. A left temporalis muscle flap was mobilised to obturate the orbital defect and a free radial forearm flap was transferred to provide a good quality skin lining (Fig. 2). The patient was discharged home 6 days post-surgery and no complications ensued. Paraffin sections confirmed good tumour clearance and the tumour revised to be moderately differentiated squamous cell carcinoma arising from the duct epithelium. He has been reviewed for 6 months with no evidence of recurrent disease.

Discussion

Naso-lacrimal duct tumours are uncommon with an incidence of 0.02% of all tumours arising in the head and neck. They are insidious in onset and the common symptoms of epiphora and/or lacrimal sac mass have previously been reported[1]. Patients will continually seek symptomatic relief from the epiphora and present late when the tumour has usually eroded bone and may have spread to orbit, ethmoids and maxillary antrum. Within the orbit the spread of malignant naso-lacrimal tumours occurs in the extraconal space which is an area of fatty tissue with no well defined surgical planes. Thus, clinical involvement of the optic nerve is rare and the presentation of a change in visual acuity signifies end stage disease with intracranial spread. Radical surgical resection is acknowledged to be the treatment of choice of attempting curative treatment[2].

Detailed analysis of the MRI and CT scan of this patient indicated that radical surgical resection could be accomplished at a subcranial level. Bicoronal and lateral rhinotomy incisions gave a wide surgical exposure to the region. Bony osteotomies were performed to mobilise the orbit and contents 'en bloc'. The contents of the superior and inferior orbital fissures were removed along with the optic nerve, ophthalmic artery and haemostasis secured. The extent of the resection should include the ethmoid air cells medially, the frontal sinus superiorly and the hard palate inferiorly for complete tumour removal.

Literature review of tumours originating in the lacrimal drainage system suggest a 55% incidence of malignancy[3]. The majority of these are squamous carcinomas with an even distribution of the remainder encompassing adenocarcinomas, transitional cell carcinomas and mucoepidermoid carcinoma. Surgical cure is dependent on wide and aggressive resection. The cosmetic deformity is minimised by the flexible nature of reconstructive options varying from an eye prosthesis to sophisticated microsurgical flaps.

References

1. Tucker N, Chow D, Stockl F, Codere F, Burnier M. Clinically suspected primary acquired nasolacrimal duct obstruction: clinicopathologic review of 150 patients. Ophthalmology 1997; 104: 1882-86.
2. Stefanyszyn MA, Hidayat AA, Peer JJ, Flanagan JC, Lacrimal sac tumours. Ophthalmic Plastic & Reconstructive Surgery 1994; 10: 169-84.
3. Peer J, Hidayatt AA, Ilsar M, Landau L, Stefanyszyn MA, Glandular tumours of the lacrimal sac. Their histopathologic patterns and possible origins. Ophthalmology 1996; 103: 1601-05