Oxyphil cell adenoma of the lacrimal caruncle

Report of two cases

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Oxyphil cell adenomata are so rarely reported in the ophthalmic literature that it seems worthwhile to record the following cases. In addition, an observation of oncocytic transformation in the epithelium of a chronically inflamed lacrimal sac is reported and illustrated.

Case reports

Case 1, a 67-year-old white woman, presented with a cherry-red caruncular tumour measuring 3 x 3 mm. which had been present for 1 year. The tumour was completely excised and submitted for section.

Microscopic appearances  Sections showed a small circumscribed but unencapsulated oxyphil cell adenoma on the lateral edge of the caruncle. It appeared to originate from and replace the surface epithelium (Fig. 1). The tumour was composed of distinctive eosinophilic granular cells arranged in solid cords, tubules, and acini (Fig. 2). A small group of lacrimal acini was present in the subjacent dermis but had no visible connexion with the tumour.

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Case 2, an 80-year-old white woman, was found to have a small yellowish plaque on the caruncle extending on to the edge of the lower lid. She was unaware of its existence.

Microscopic appearances Sections showed a small oxyphil cell adenoma which appeared to arise from the surface epithelium of the caruncle (Fig. 3). Histologically it was very similar to the tumour in Case 1, except that its connective tissue stroma was conspicuously infiltrated by small lymphocytes (Fig. 4, overleaf).
Comment

As the human body ages, epithelial cells in many organs and tissues undergo a curious transformation in which their cytoplasm increases in volume and becomes filled with eosinophilic granules. These altered cells, which are rarely found in individuals under 50 years of age, have been called oncocytes to convey the idea of swollen cells which are larger than the cells from which they are derived (Hamperl, 1962). Irrespective of their ancestry, all oncocytes look very much alike, so that the process of oncocyctic transformation has been termed convergent differentiation. The significance of this change is not known.

Oncocytes occur in the major salivary and lacrimal glands, in the lacrimal sac and caruncle, in the mucosae of the oral and nasal cavities, pharynx, larynx, oesophagus, and stomach, in the pituitary, thyroid, and parathyroid glands, and in the liver, pancreas, and testes.

Oncocytes retain the ability to divide into daughter oncocytes and this process of multiplication occasionally results in the formation of small enclaves of these cells or of small oncocyctic neoplasms, the great majority of which are benign. The descriptive term oxyphil cell adenoma (or oxyphilic granular-cell adenoma) for these tumours is to be preferred to the ambiguous alternative “oncocytoma”.

Oxyphil cell adenomata in ophthalmology These formations are rarely encountered in ophthalmic practice and then principally in the caruncle where in most instances they are considered to originate from accessory lacrimal glands (Radnót, 1947; Noguchi and Lonser, 1960; Klein, 1965; Deutsch and Duckworth, 1967).

Two examples of oxyphil cell adenomata arising from the lacrimal sac have been reported (Radnót, 1941; Ostachowicz and Meyer, 1963); in both cases the sac was chronically inflamed.

**FIG. 4** Case 2 The stroma of the growth is infiltrated by lymphocytes. Haematoxylin and eosin. × 100
Fig. 5 illustrates a small cluster of oncocytes derived from the epithelium lining a mucocele of the lacrimal sac. Elsewhere in the same section there was a span of epithelium in process of oncocytic transformation (Fig. 6). If oncocytes can develop from an epithelial surface in this way, it is possible that the two oxyphil cell adenomata reported here originated from the surface epithelium of the caruncle, as indeed they appear to have done, rather than from accessory lacrimal glands.

**Fig. 5** Mucocele of lacrimal sac. A cluster of oncocytes which has developed from the epithelium of the sac. Haematoxylin and eosin. ×250

**Fig. 6** Mucocele of lacrimal sac. Epithelium in process of oncocytic transformation. Haematoxylin and eosin. ×250
Although oncocyes were found by Böck and Schlagenhauff (1938) in 35 per cent. of adult lacrimal glands, there are reports of only three oncocytic tumours in these glands. Two of these were small clusters of oncocyes found at autopsy in two elderly patients who had died of cerebral apoplexy (Radnót, 1939). The third, which exhibited a predominantly oncocytic cytology but had invaded the cranial bones, was described by Dorello (1961) as “carcinoma oncocitaria”.

The epithelial components of oxyphil cell adenomata, parotid adenolymphomata, and extraparotid papillary cystadenomata, show sufficient similarities to suggest a close inter-relationship between such tumours. A further relationship is suggested by the report of a parotid oxyphil cell adenoma containing elements of a mixed salivary tumour (Christopherson, 1949).

**Summary**

Two oxyphil cell adenomata of the lacrimal caruncle are reported, together with an observation of oncocytic transformation in the epithelium of a chronically inflamed lacrimal sac. It is suggested that these tumours originated from the surface epithelium of the caruncle rather than from accessory lacrimal glands.

**References**

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