Tyrosine crystals in salivary gland tumours

The interesting paper by Thomas and Hutt¹ has drawn attention to a less familiar feature of some salivary gland tumours, particularly pleomorphic adenomas. Tyrosine crystals have been occasionally reported in salivary gland tumours.^{2,3,4} There seems to be no similar reported observation of tyrosine deposits in a ceruminous gland tumour of the external auditory meatus and the present case report might be of some interest both by its rarity and because it has caused some diagnostic difficulty.

The patient was a fit and healthy man aged 42 years who presented with a smooth lobulated tumour in the right external auditory meatus, which was excised. The patient, an itinerant Irish labourer, could not be followed further. Microscopy of the neoplasm showed some unusual features and, in particular, the presence of crystalline material caused diagnostic problems.

The late DA Osborn diagnosed a ceruminous gland tumour of adenoid-cystic or cribriform pattern and compared the crystalline deposits with the 'corps oviforms' described by Robin in glandular tumours.⁵ Further revision of the sections has identified the crystalline deposits as an example, not previously observed, of tyrosine crystal deposition in a ceruminous gland tumour.

Microscopy shows details of randomly distributed crystalline deposits surrounded by myoepithelial cells. The needle-shaped individual crystals can be clearly seen forming sheaves and flower-like petals best demonstrated in sections stained by van Gieson's stain (Figure). Under polarised light the deposits were birefringent and displayed Maltese crosses. The surface was covered by squamous epithelium and there were ceruminous glands underneath.

Thackray and Lucas⁶ have described these rare crystalline deposits in five pleomorphic adenomas of the parotid gland; four in black patients and one in a white person. Thomas and Hutt¹ have confirmed the greater frequency in black patients. Nochomovitz and Kahn⁴ found six cases in a series of 121 pleomorphic salivary gland tumours seen at the University of Cape Town in 20 years but do not mention the race of the patients affected. Our patient, as the first patient in whom this feature has been noted² was white.

Osborn⁶ described similar tyrosine-like

Multiple flower-shaped tyrosine crystals surrounded by myoepithelial cells deposited in a ceruminous gland tumour. van Gieson's stain (original magnification $\times 566$)

inclusions as the 'corps oviforms' of Robin in a pleomorphic adenoma of the soft palate in a 34-year-old white man and in a cribriform adenocarcinoma of the lachrymal gland in a 32-year-old white woman.

Some tumours and also normal salivary glands are known to excrete tyrosine, an amino acid playing a significant role in melanin metabolism. Nevertheless the effect or cause of the tyrosine deposits in glandular tumours has remained obscure. It ought to be better known in view of the diagnostic difficulty that may arise.

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References

- 1 Thomas K, Hutt MRS. Tyrosine crystals in salivary gland tumours. *J Clin Pathol* 1981;**34**:1003-5.
- 2 Bullock WK. Mixed tumour of parotid gland with tyrosine crystals in the matrix. *Am J Clin Pathol* 1953;**23**:1238-9.
- 3 Thackray AC, Lucas RB. Tumours of the major salivary glands. *Washington DC, AFIP* 1974; Fasc 32.

⁴ Nochomovitz LE, Kahn LB. Tyrosine crystals in pleomorphic adenomas of the salivary gland. *Arch Pathol* 1974;**97**:141-2.

⁵ Robin C. *Gazette Hebdomadaire de Med Chir* 1856;**3**:35-7, 84-8. (cf Osborn DA MD Thesis, 1974)

⁶ Osborn DA. Tumours of the subsidiary mucous glands. University of London MD Thesis, 1974.

Book reviews

Atlas of Renal Pathology. Current Histopathology Series. Vol 2. RA Risdon and DR Turner. (Pp 150; illustrated; \$42.50.) JB Lippincott Company. 1981.

The Atlas of Renal Pathology is a welcome addition to the pathologist's bookshelf, though it supplements rather than replaces existing reference books on the interpretation of renal biopsies. It contains an excellent collection of pictures, some quite beautiful. They are mainly histological and most of high technical quality, aimed at helping diagnosis and understanding of non-neoplastic renal disease. The text consists of captions to the pictures and also succinct essays on the topics of the chapter headings such as "Renal Infection" and "Glomerulonephritis".

This is a book for postgraduate use, though I have found its illustrations useful in small group teaching of undergraduate students. It is aimed at diagnostic histopathologists, nephrologists, and trainee histopathologists. My main criticism is that too many of the pictures are good if you know what you are looking at but are inadequately explained if you do not. This is especially true of the electron micrographs which would benefit from arrows or other indicators on the pictures themselves.

DR DAVIES

Special Topics in Endocrinology and Metabolism. Vol 1. MP Cohen and JH Foa. (Pp 144; no price given.) Alan R Liss Inc. 1981.

Like wine, some books are to be consumed from cover to cover, while others are for the connoisseur alone to savour and digest over a period of time. This book falls into the latter category representing as it does