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NEOPLASMS OF HAIR FOLLICLE

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The present paper deals with clinico-pathological analysis of 22 cases of hair follicle neoplasm, representing 23.4% of skin appendage tumours. The mean age was 32 years. M : F ratio was 1 : 1. Histopathologically, there were 15 cases of pilomatrixoma, 5 cases of trichoepithelioma and 2 cases of trichelemmoma.

Key words : Hair follicle, Tumours.

Hair follicle tumours are rare. Histopathologically, trichoepithelioma and trichelemmoma require to be differentiated from keratotic basal cell carcinoma. There are very few studies[1,2] from India dealing with benign tumours of hair follicle. Most of the reports deal with individual case reports of a particular type, as trichoepithelioma[3] and pilomatrixoma.[4, 5]

In the present communication, we present clinico-pathological data on 22 cases of hair follicle neoplasms.

Materials and Methods

During a period of 28 years between 1959 and 1987, we observed 94 cases of skin appendage tumours. There were 50 cases of sweat gland tumours, 22 cases of sebaceous gland tumours and 22 cases of hair follicle tumours. These 22 cases of hair follicle tumours were analysed in relation to the age and sex incidence and other clinico-pathological features. Paraffin sections were cut from the stored paraffin blocks and these were stained with haematoxylin and eosin, PAS, DPAS, alcian blue and prussian blue stains. The cases were categorised as per the WHO classification for skin tumours.[6]

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Results

Twenty two cases of hair follicle tumours accounted for 23.4% of the skin appendages tumours. Histopathologically there were 15 cases of pilomatrixoma, 5 cases of trichoepithelioma and 2 cases of trichelemmoma. M : F ratio was 1 : 1. Mean age was 32 years (range 6 to 60 years).

Pilomatrixoma

There were 15 cases of pilomatrixoma accounting for 68% of hair follicle tumour. M : F ratio was 1 : 1. Mean age was 28 years (6 to 60 years). Six lesions were located on the arm, 3 cases each on the scalp and neck and 1 case each on the foot, eyebrow and breast. Duration of the tumour ranged from 6 months to 5 years. Clinically, these had been diagnosed as lipofibroma in 4 cases, neurofibroma in 3 cases, sebaceous cyst in 2 cases and 1 case each as dermoid cyst, papilloma, tubercular lymphadenitis and carcinoma breast. The tumour was located just beneath the skin. It was freely mobile non-tender and non-ulcerative. Grossly, the tumour was circumscribed and partially encapsulated. The size ranged from 1.5 × 2 cm to 3 × 1.5 × 1 cm. Cut surface was greyish white, with chalky white areas of calcification in some cases giving a gritty sensation while cutting. Microscopically, it showed two types of cells i.e. eosinophilic ghost cells and basophilic cells in a variable proportion. Eosinophilic ghost cells

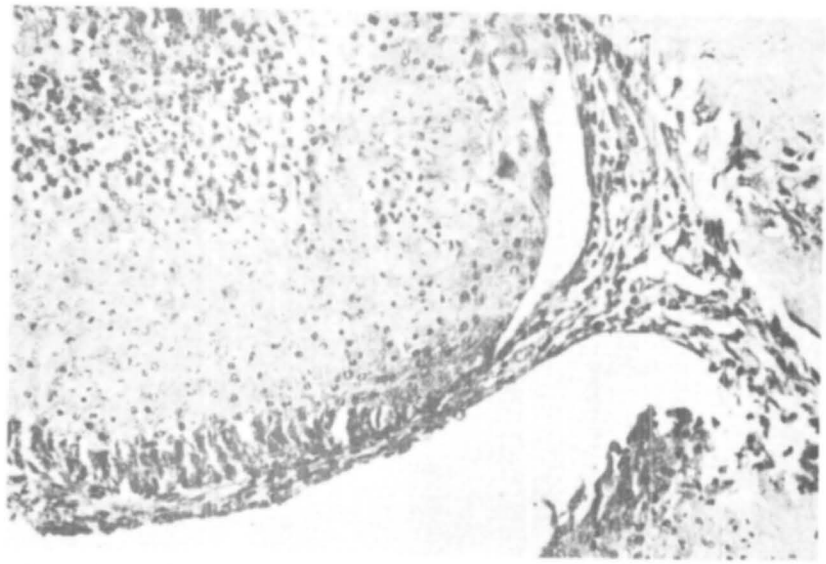

Fig. 1. Microphotograph from calcifying epithelioma with eosinophilic ghost cells bordered by basophilic cells with dystrophic calcification (H&E × 100).

appeared as round to oval cells in sheets with pale eosinophilic cytoplasm, having distinct cell borders, without nuclei in most of the cells and pyknotic nuclei in some. These masses were surrounded by darkly-stained basophilic cells with elongated nuclei and scant eosinophilic cytoplasm. Areas of calcification and keratinization were seen in all the cases. Hair shaft and melanin pigment were not seen. Stroma showed mild to moderate lymphocytic and plasma cell infiltration with giant cells (Figs. 1 and 2).

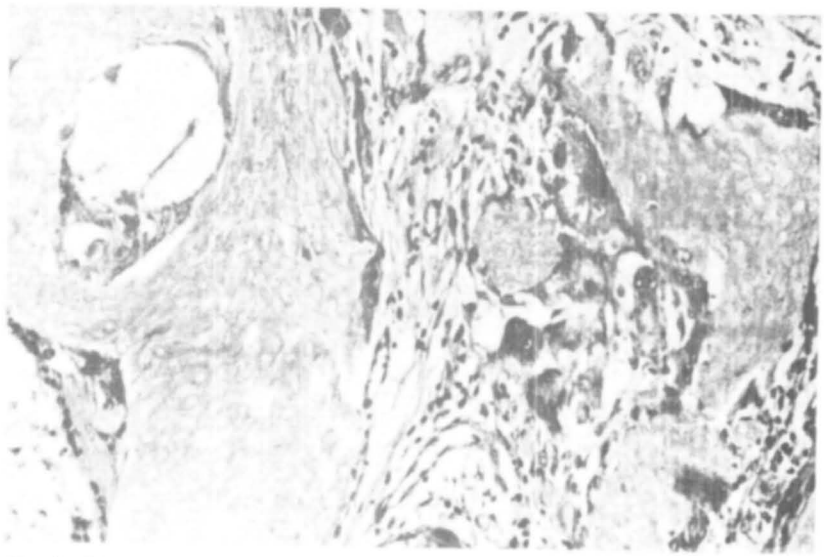

Fig. 2. Ghost cells bordered by mononuclear cells and giant cells in a case of pilomatrixoma (H&E × 100).

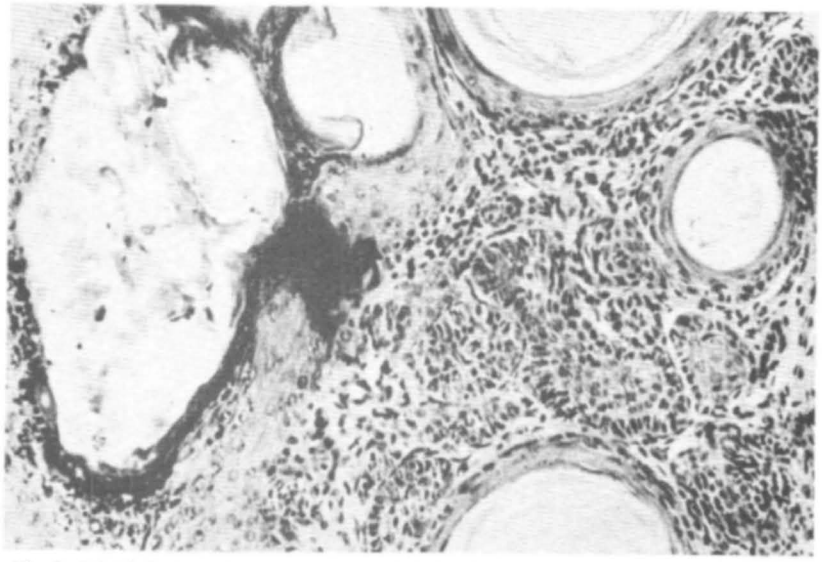

Fig. 3. Multiple keratin cysts surrounded by hair matrix cells from a case of trichoepithelioma (H&E × 100).

Trichoepithelioma

Five cases of trichoepithelioma included 3 males and 2 females (M : F ratio 1.5 : 1). The mean age was 45 years (range 20 to 75 years). Two cases each were located on the scalp and face and 1 case on the chest wall. Grossly, the size of the tumour was 1 × 0.5 × 0.5 cm to 4.5 × 3 × 1 cm. Microscopically, it showed multiple horny cysts simulating varying degrees of keratinization to abortive pilar structures, which may be connected to the surface epithelium by epithelial tracts (Fig. 3).

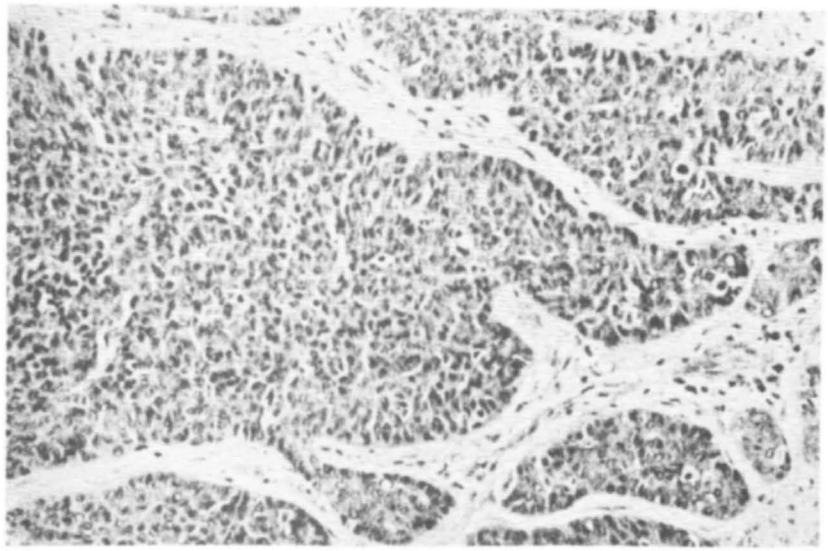

Fig. 4. Nests of cells having eosinophilic to clear vacuolated cytoplasm bordered by thick vitreous sheath at the periphery characteristic of trichelemmoma (H&E × 100).

Trichelemmoma

There were 2 cases of trichelemmoma, 1 case with either sex. Their ages were 40 and 45 years. These were located on the leg and scalp with the clinical diagnoses of fibroma and papilloma respectively. The size of tumour measured 2 × 2 and 3 × 2.5 × 1 cm. Microscopically, it showed solid masses of clear, cuboidal to polygonal cells with sharply defined cell borders, well demarcated from the surrounding corium by thin strands of fibrous stroma (Fig. 4). In the central area, it showed differentiation towards hair shaft cells (Fig. 5). The cytoplasm was PAS positive and diastase sensitive, indicating the presence of glycogen. The peripheral cells showed palisading with distinct PAS positive vitreous layer.

Comments

Vaishnav and Dharkar[2] reported 48 cases of adnexal tumours of skin, which included 6 (12.5%) cases, of hair follicle tumours. Pilomatrixoma accounted for 68% of cases in the present study, whereas in Vaishnav and Dharkar[2] series it accounted for 50% of the cases. Pilomatrixoma has been described as an infrequent tumour. It was first described by Malherbe and Chenantais.[7] The face and upper extremities are the most common sites. The tumour may arise at any age, but about 40% of the tumours arise before the age of 10 years and 60% are seen in the first two decades.[8] The term pilomatrixoma as suggested by Forbis and Helwig[9] appears more suitable, as it indicates the histogenesis of the lesion and its benign nature.

Trichoepithelioma accounted for 23% of the hair follicle tumours. All the lesions were solitary. Solitary trichoepithelioma is more common than multiple trichoepithelioma.[10] It is characterised by numerous horny cysts as well as abortive hair follicle,[11] whereas keratotic basal cell epithelioma shows little differentiation towards hair structures.

Solitary trichelemmoma was first recognized by Headington and French[12] as a small tumour usually on the face and neck, comprising of glycogen rich cells, surrounded by vitreous cuticle with palisading at the periphery. The incidence of trichelemmoma in the present study was 9%. It should be dif-

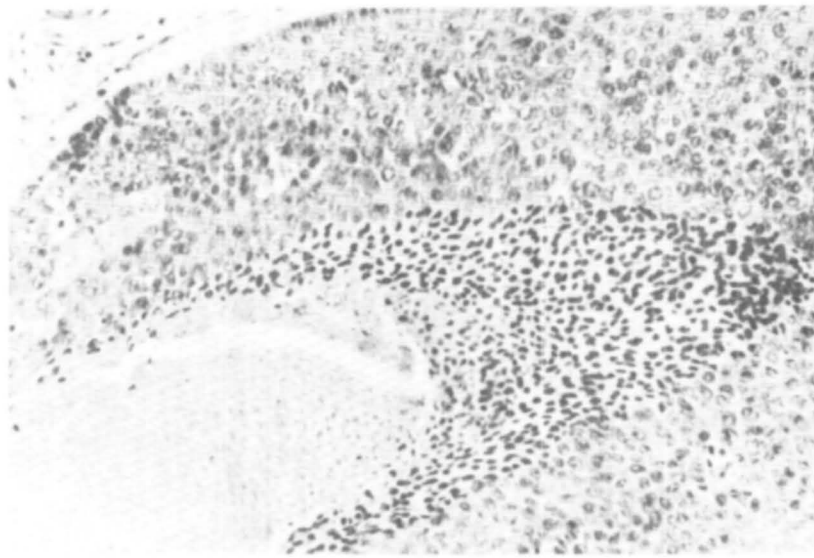

Fig. 5. Differentiation towards hair matrix cells in the centre of eosinophilic cells in a case of trichelemmoma (H&E × 100).

ferentiated from the clear cell variety of eccrine acrospiroma and sebaceous carcinoma. The cytoplasm in eccrine acrospiroma shows PAS positive diastase resistant material, whereas in trichelemmoma it shows diastase sensitive material. Sebaceous carcinoma shows cellular anaplasia with pagetoid invasion of surface epithelium and sudanophilic intracytoplasmic fat droplets.

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