

BASAL CELL EPITHELIOMA (A Clinico-pathological study of 172 cases)

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The present paper deals with a clinico-pathological analysis of 172 cases of basal cell epithelioma representing 28% of the total skin cancer cases, 1.44% of the total malignant tumours, 1% of the total tumours and 0.24% of the hospital admissions. M: F ratio was 1.26 : 1. The mean age was 54.06 years, with the maximum number of cases in the fifth decade. Most (94%) of the lesions were seen on the head and neck region. Histopathologically, it showed solid (60.5%), adenoid cystic (15.7%), keratotic (9.3%), pigmented (6.4%), basi-squamous (3.5%) and morphoea patterns (2.3%). Perineural lymphatic invasion was seen in 52% of the adenoid cystic basal cell epithelioma. Amyloid (12.8%) and amyloid like deposits (29.65%) were seen in 42% of the cases. Amyloid deposits were seen as lichen amyloidosis in 10.46% cases and in or around the tumour cell masses in 16.8% cases. It appeared as structureless, homogeneous, eosinophilic material and showed congophilia with apple-green birefringence on polarising microscopy. It was found to be KMNO₄ sensitive (AA type protein-secondary amyloidosis). Amyloid like deposits appeared as less homogeneous, basophilic, fractured material which showed non-specific congophilia without apple-green birefringence and stained with acid orcein stain indicating degenerated collagen (elastoid-degeneration).

Key words : Basal cell epithelioma, Clinico-pathologic analysis.

In western countries, particularly USA the basal cell carcinoma is the commonest type of skin cancer. Dorn and Cutler¹ reported an incidence of 55% during a survey of the white population in 10 cities of USA. The incidence of basal cell carcinoma in the Indian literature ranges from 12%² to 30%.³ There are only a few reports in India detailing clinico-pathological data on the basal cell epithelioma.²⁻⁵ The present communication deals with data on 172 cases of basal cell epithelioma.

Materials and Methods

During a period of 16 years and 6 months between 1971 and June 1987, we had 172 cases of basal cell epithelioma. These cases were reviewed in view of the age and sex incidence, anatomical location, histopathological types and other associated features. Sections were cut from the preserved paraffin blocks and

sections were stained with haematoxylin and eosin. Special stains like PAS, VG, methyl violet, alkaline congo red and acid orcein stain were used whenever required.

Results

One hundred and seventy two cases of basal cell epithelioma accounted for 28% of the skin cancers, 1.44% of the total malignant neoplasms and 1% of the total neoplasms. The incidence of basal cell epithelioma was 0.24% of the hospital admissions. Ninety six cases were males and 76 cases were females. The average age was 54 years and it was almost identical in either sex. The peak incidence was seen in the fifth decade. The maximum number of cases were seen around the eye. Ninety four per cent of the lesions were located on the head and neck region. Table I shows the anatomical location of 172 basal cell epithelioma. Nodulo-ulcerative lesion was seen in 160 cases and grossly pigmented lesion in 12 cases. The clinical diagnosis in the pigmented lesions was malignant melanoma.

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Table I. Anatomical location of the 172 cases of basal cell epithelioma.

Anatomical location	Number of cases
Eye and around it	45
Face	43
Nose	28
Cheek	18
Forehead	9
Lip	5
Scalp	6
Ear	5
Neck	3
Other	10

Histopathologically, it showed basalioma cells with peripheral palisading surrounded by proliferating mucinous stroma with radially oriented bundles of collagen fibres. Mucinous stroma showed retraction due to shrinkage during fixation and processing of the tissue. The inner cellular element was arranged haphazardly. Mononuclear cellular infiltrate was seen in the stroma and comprised of lymphocytes and plasma cells. Epithelial connection was seen in 98 cases. Appreciably prominent necrosis was seen in 9 cases. Melanin

pigment of a variable intensity was seen in 49 cases, and marked melanosis in 11 cases. The pigment was usually extracellular. Granulomatous inflammation was seen in 3 cases. Histopathologically classical solid pattern was seen in 60% of the cases, adenoid cystic pattern in 15.68%, keratotic in 9.30%, pigmented in 6.39%, basi-squamous in 3.48%, morphoea in 2.32%, fibro-epithelial in 1.74% and comedo in 1.16% of the cases (Figs. 1 and 2). Perineural lymphatic invasion was seen in 52% of the adenoid cystic basal cell epithelioma (Fig 3).

Amyloid and amyloid like deposits were seen in 42% cases. Twenty two (12.8%) cases showed amyloid deposits in the form of structureless, homogeneous, eosinophilic, amorphous, hyaline-like masses, usually around the tumour masses in the stroma and overlying the superficial dermis in 18 cases and within the tumour islands in 12 cases (Fig. 4). The amyloid material stained with congo red and gave apple-green birefringence on polarising microscopy. With crystal violet it showed uniform metachromasia. The amyloid material was KMNO_4 sensitive thereby

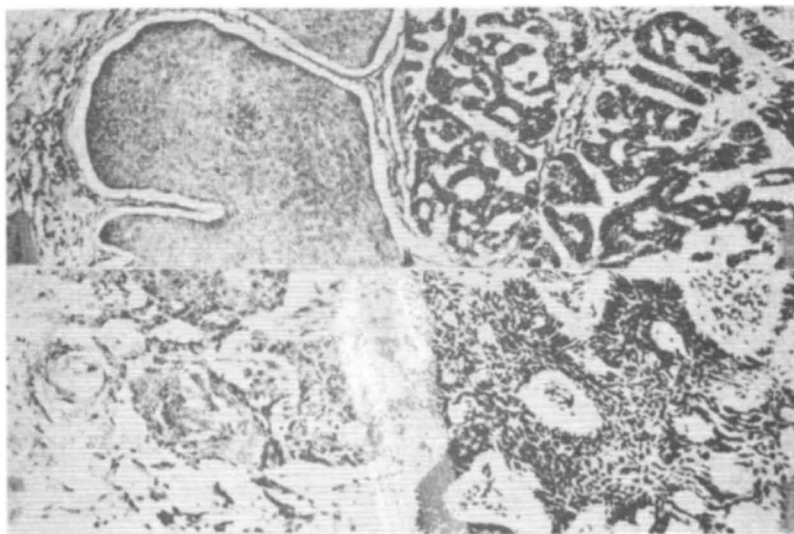


Fig. 1. Various patterns of basal cell epithelioma (H and E \times 100). (A) Classical solid pattern with cleft-like spaces. (B) Adenoid cystic pattern. (C) Keratotic pattern. (D) Basi-squamous pattern.

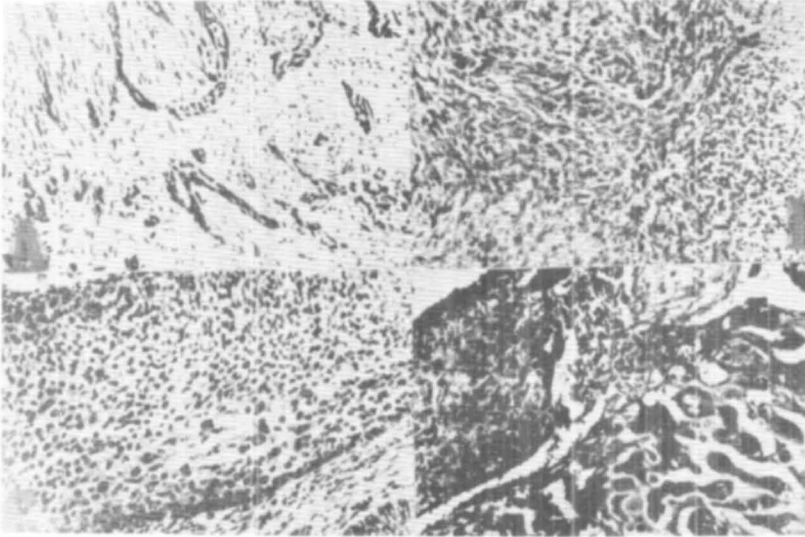


Fig. 2. Various patterns of basal cell epithelioma (H and E \times 100). (A) Morphoea pattern. (B) Fibro-epithelial pattern. (C) Sebaceous pattern. (D) Amyloid deposits.

Fig. 3. Perineural lymphatic invasion in adenoid cystic basal cell epithelioma (H and E \times 100).

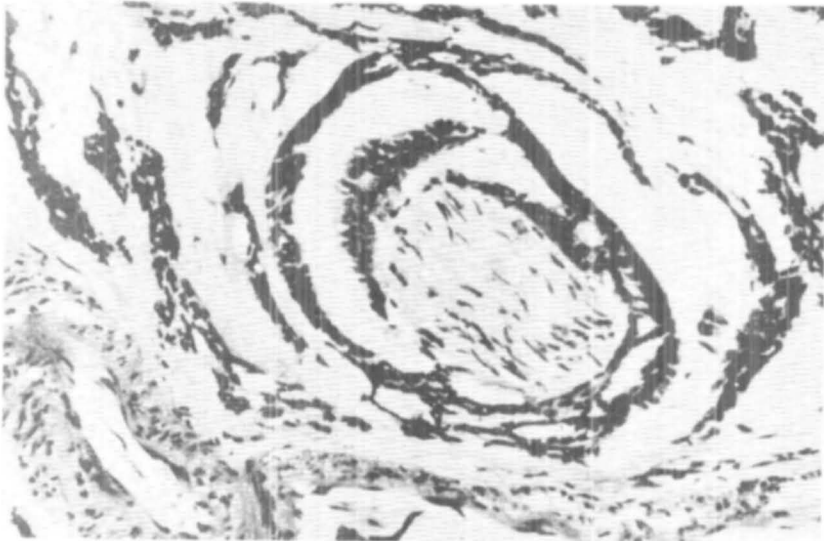
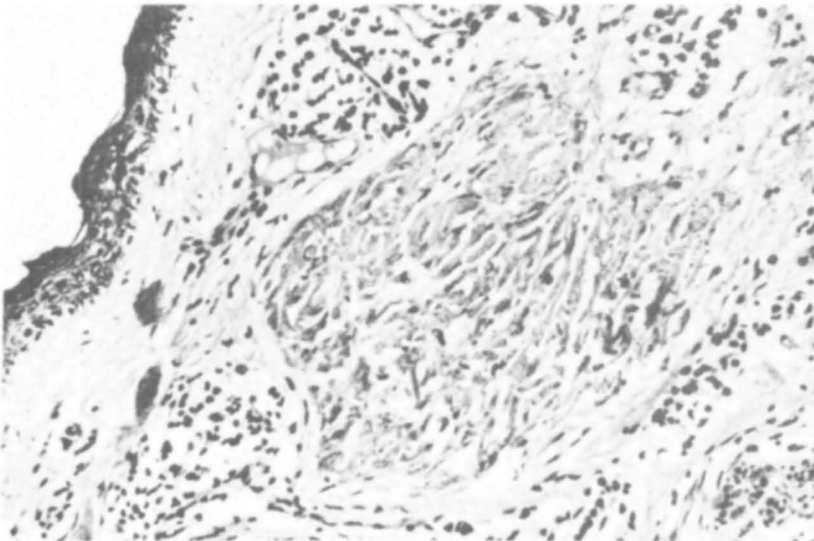




Fig. 4. Amyloid deposits as lichen amyloidosis in basal cell epithelioma (H and E $\times 100$).

Fig. 5. Elastoid degeneration in the superficial dermis in basal cell epithelioma (H and E $\times 100$).



indicating that it is AA type amyloid deposits characteristic of secondary amyloidosis. Fifty one (29.65%) cases showed deposits in the superficial dermis, basophilic, less homogeneous and fractured which stained with acid orcein, thereby indicating it to be degenerated collagen (elastoid degeneration) characteristic of solar keratosis (Fig 5).

Comments

The incidence of basal cell carcinoma is much higher (55%) in the western literature.¹ In the Indian literature, the incidence of basal cell epithelioma ranged from 12%² to 30%.³ In the present study, it was 28% of all the skin cancers. The mean age of the patients being 54 years is in close accordance to that of the other worker.⁵ Ninety four per cent of the lesions were located on the head or neck region, and this figure is slightly higher than that of others.⁵ These lesions rarely occur on the muco-cutaneous junctions or mucous surfaces, and seldom on the palms⁶ or soles.⁷ Wakeley and Childs⁸ collected 237 cases of basal cell carcinoma, of which 210 lesions were seen on the face and the remaining 27 on the limbs, back, trunk, neck and the anal margin. Histopathologically, Lennox and Well⁹ classified basal cell carcinoma into pigmented and non-pigmented variants. In the present study, marked melanosis was seen in 11 cases and these were designated as pigmented basal cell epithelioma. Exceptionally, basal cell carcinoma metastasizes to the lymph nodes¹⁰ and somewhat less frequently via the blood to distant sites such as skeleton¹¹ and lung.¹² Costanza et al¹³ collected 90 documented cases of metastasizing basal cell carcinoma. Small areas of keratinization were present in some of these cases.¹³ However, such foci occur in the typical non-metastasizing basal cell carcinoma also. In the present study, we had 16 cases of keratotic and 6 cases of basi-squamous carcinoma. Perineural lymphatic invasion was seen in 8.1% of the basal cell epithelioma and all these cases were of the adenoid cystic varie-

ty. Smout and French¹⁴ showed that the risk of metastasis is greater in the adenoid cystic tumour.

Amyloid and amyloid like deposits were seen in 73 cases. The deposits with tinctorial properties of amyloid were seen in 12.8% of the basal cell epithelioma, which is identical to that of other workers.^{15,16} However, the incidence reported by Ganter and Beurlet¹⁷ (30%) and Weedon and Shand¹⁸ (65%) was much higher. The amyloidogenesis in basal cell epithelioma appears to be due to the degenerating tumour cells or apoptotic bodies phagocytosed by macrophages with release of microfibrils and/or tonofilament protein, progressing to polymerization with beta pleated sheet conformation and coated with immunoglobulin.¹⁸ Gueft¹⁹ on X-ray diffraction analysis suggested that amyloid and keratin share a common beta pleated sheet pattern and show positive staining with antikeratin antiserum.²⁰

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