Indian Journal of
Dermatology & Venereology

(Incorporating Indian Journal of Venereal Diseases & Dermatology)

Vol. 30; No. 2. March-April 1964

ORIGINAL ARTICLES

MALIGNANT NEOPLASMS OF THE SKIN*

By

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Malignant neoplasma of the skin and adnexae are common among the white races and infrequent in dark complexioned Asian and African races. The geographic variation observed in the incicence of these neoplasms offered an international platform for a conference on the biology of skin cancer, held under the auspicies of National Institutes of Health, Bethesda, Washington and the proceedings of this conference contributed for a most informative monogram. The early recognition of precancerous lesions of the skin such as senile keratosis, Bowen's disease, leukoplakia and an awareness to occupational hazards including repeated trauma and sun's rays over the exposed parts of the skin has helped in preventing the same.

An analysis of the malignant tumours of the skin registered at the deparment of Pathology, Guntur Medical College, for the period 1955 to 1962 discloses some interesting features. Just over 50% of them are accounted by squamous-cell carcinoma and the next in the order of frequency are basal-cell carcinoma and malignant melanoma. (Table I). There were 132 skin cancers.

TABLE I

Nature of Skin Cancer

Squammous-celi Carcinoma		Tricho-epithelioma		Basal-cell Carcinoma		Malignant Melanoma		Carcino-sarcoma		Secondary Adenocarcinmatous deposit	
No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
81	55.3	3	2.2	23	17.4	20	15.1	1	0.8	1	0.8

Careful study of the clinical history of these patients reveal that occupational trauma by way of friction or habits and customs or burn scars offered ground for the development of squamous-cell carcinoma. Heel was the third common site of cutaneous malignancy and this from the clinical history is attributable to bare feet of the South Indian. All these patients are drawn from the law income group.

* Presented at The Second All India Cancer Conference 12-1-64. Received for publication on 28-1-64.

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More arresting and distressing is the occurrence of squamous-cell carcinoma in freckled children of xeroderma pigmentosa. The cancers in these cases are multiple and occur over the exposed parts of the body in relative young age groups between 5 to 15 years. These cases are often seen by the eye surgeon for carcinoma of evelid or conjunctiva.

TABLE 2

Site Distribution of Squamous-cell carcinoma Of Skin

Site	Male	Female	Total	Remarks
Head and Neck	14	11	25	Squamous-cell carcinoma secondary to xeroderma pigmentosa in three cases and sebaceous cysts in three cases.
Chest	2	1	3	
Upper Limbs	5	2	7	2 of them were secondary to burn scars.
Back	2	1	3	Sites of friction as in dhoti
Iliac Crest	–	1	1	cancer, malignancy following
Inguinal area	1	2	3	granuloma venerium etc.
Groin	3	–	3	
Gluteal area	–	3	3	
Scrotum	1	–	1	
Lower Limbs	4	6	10	Two of these are secondary to to burn scars.
Heel	14	–	14	
Site not mentioned	1	–	1	
	47	29	76	

The age distribution of the occurrence of squamous-cell carcinoma showed variation and one case was encountered in a child less than ten years old excluding cases observed in xeroderma pigmentosa. (Table 3).

TABLE 3

Age Distribution Of Squamous-cell Carcinoma

Age In Years	0-10	11-20	21-30	31-40	41-50	51-60	61-70	Age not mentioned
Number in each	1	3	14	12	24	11	3	7

All clinically diagnosed papillomata need be subjected to histological examination as occasionaly these show malignant transformation. (Fig. 1A).

Case 1: *Epithelioma Heel of the Foot*: G. G., Hindu male aged 25 years had an everted large ulcer over the heel. It was clinically suspected to be melanoma. (Fig. 1). Biopsy No. 298A/62 revealed epithelioma.

Fig. 1. Epithelioma Heel.
Fig. 1 A. Malignant Papilloma (Squamous).
Fig. 2. Epithelioma Gluteal Region.
Fig. 3. Epithelioma over The Para Umbilical Area.
Fig. 4. Epithelioma Nape of The Neck.
Fig. 5. Epithelioma In An Inmplantation Cyst (H & EX 65)

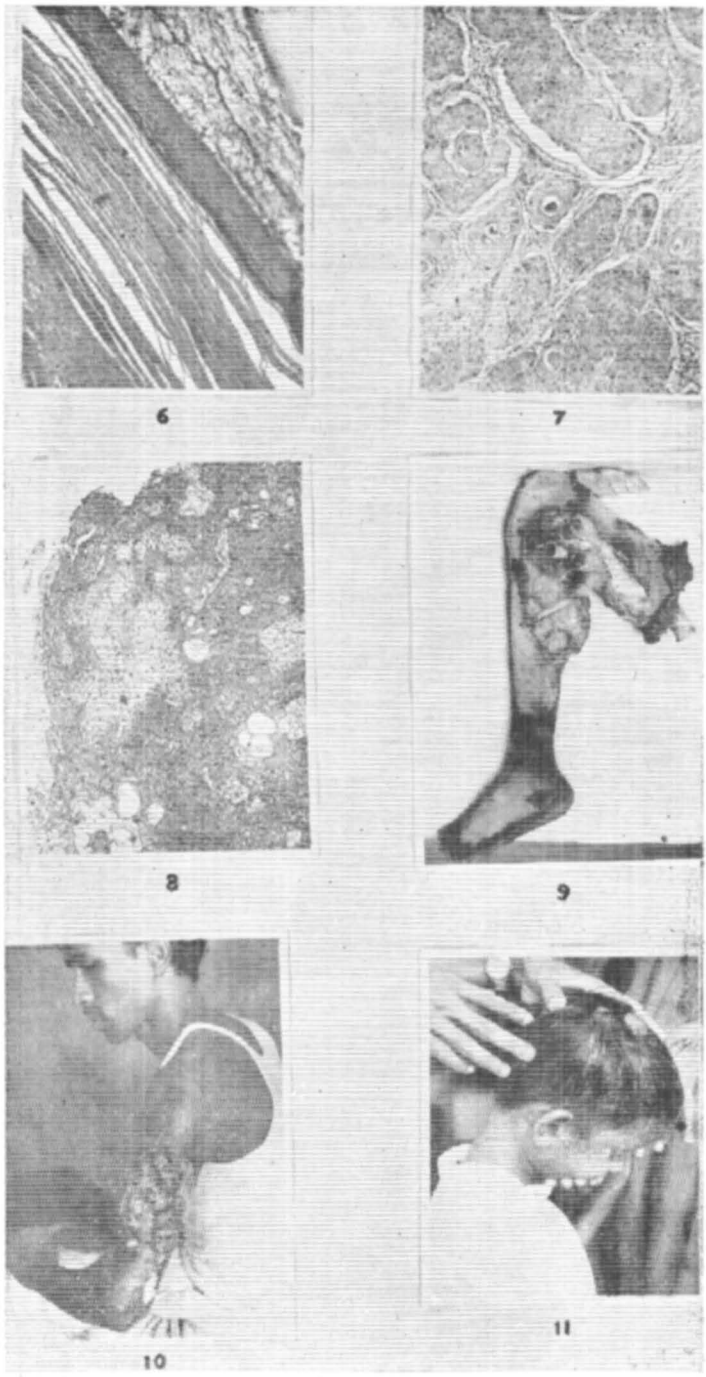


Fig 6 Epithelioma In A Sebaceous Cyst (H & EX90)

Fig. 7. Epithelioma In A Sebaceous Cyst (H & EX90)

Fig. 8. Epithelioma In A Sebaceous Cyst (H & EX 90)

Fig. 9. Epithelioma Over Bend Of Knee In Burn Scar.

Fig. 10. Epithelioma Arm In A Burn Scar.

Fig. 11 & 11A Photographs Show epithelioma scalp and conjunctive in a xeroderma pigmentosa boy.

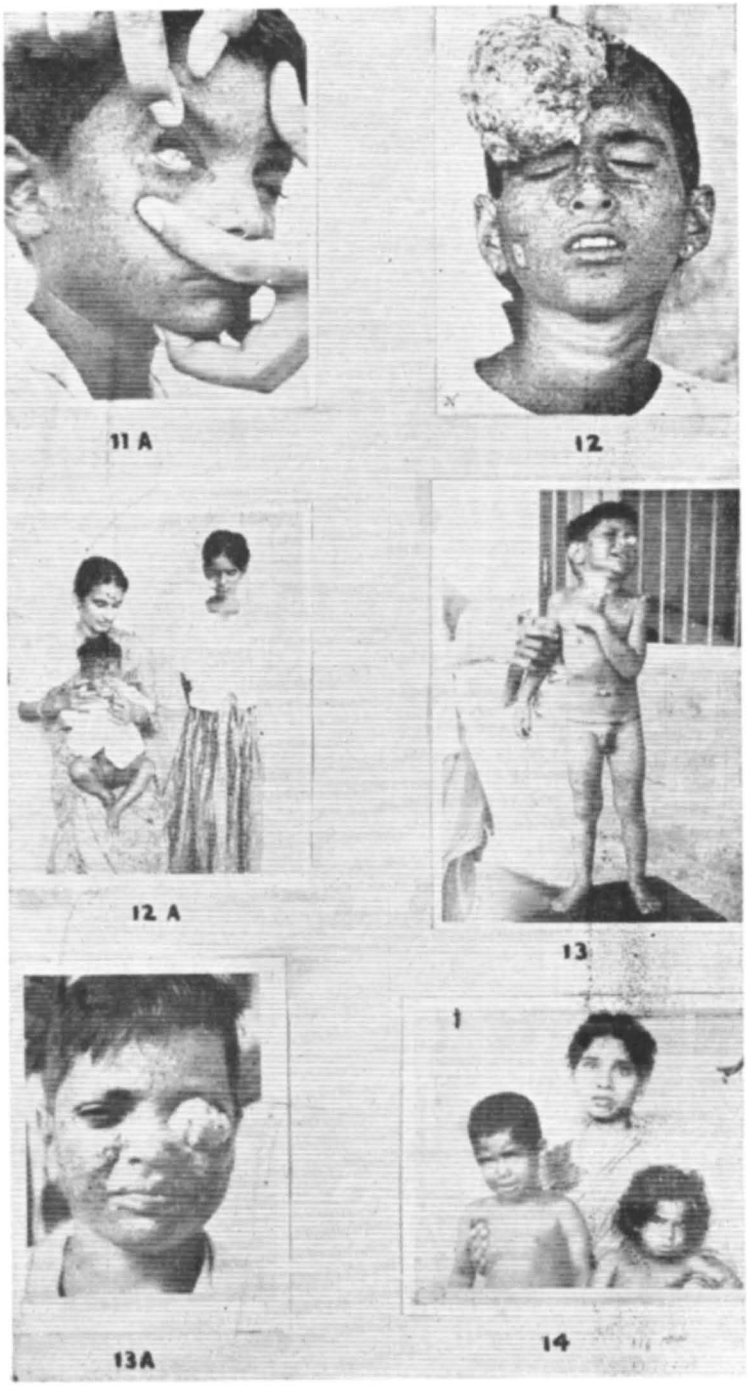


Fig. 12. Photographs show epithelioma fore head in a xeroderma pigmentosa case and Fig. 12A the younger brother of the patient with freckles depicting photophobia.

Fig 13 & 13A Multiple epitheliomata in two brothers of xeroderma pigmentosa.

Fig. 14. Two children of a mother with xeroderma pigmentosa.

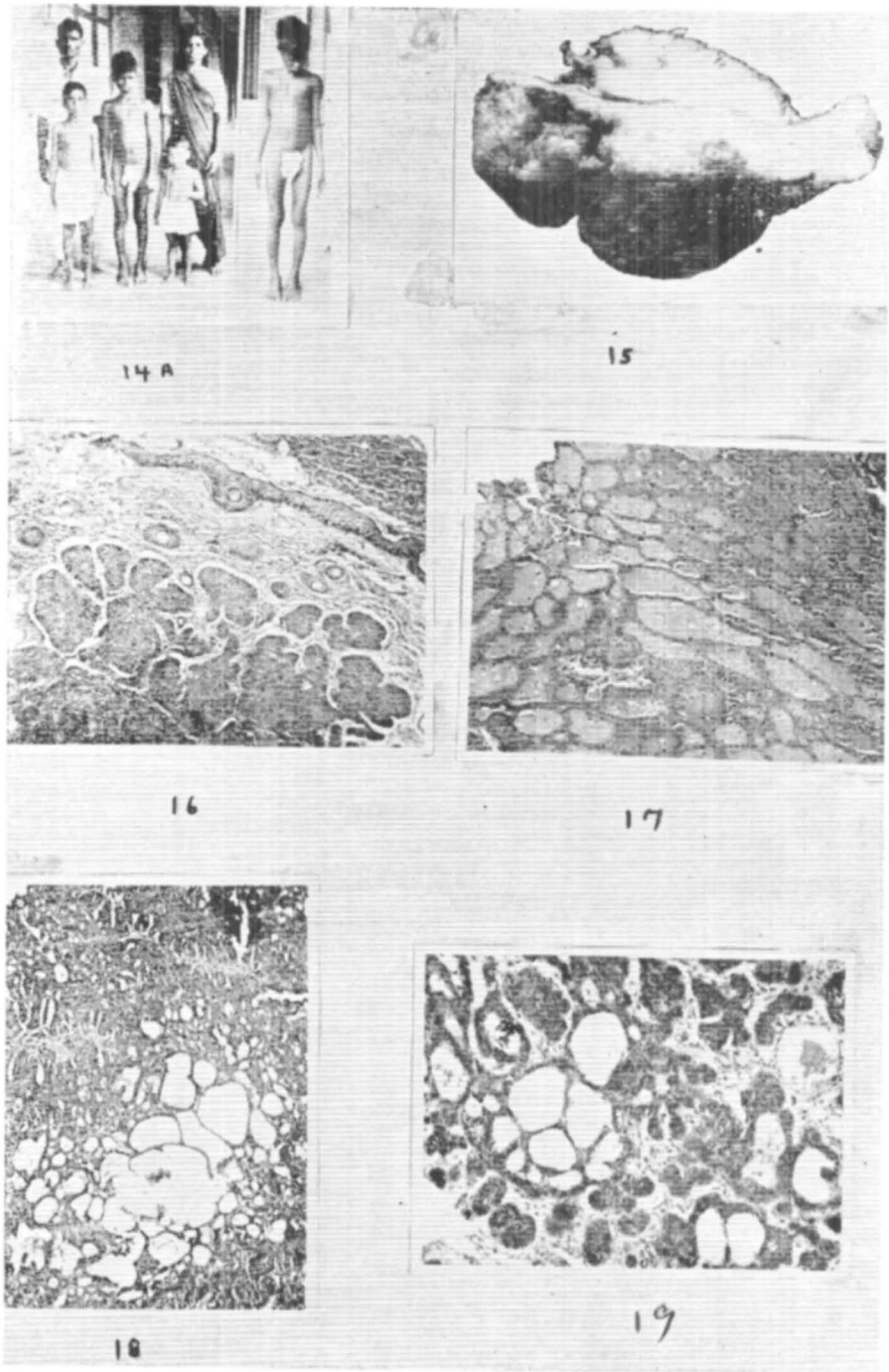


Fig. 14. A family of xeroderma pigmentosa cases.
Fig. 15. A Massive Basal-cell Carcinoma Lip.
Fig 16. Photomicrograph of Typical Basal-cell Carcinoma (H & EX 90).
Fig. 17. Photomicrograph of Adenoid Cystic Epitheliomatous Pattern of Basal-cell Carcinoma (H & EX 70).
Fig 18 & 19 Photomicrograph of Cylindromatous pattern of Basal-cell carcinoma (H & EX 60).

Case 2: *Epithelioma Over Gluteal Region*: Female aged 50 years had an ulcer over the gluteal region. It started as a small nodule, ulcerated and increased in size. The edges were everted and epidermoid carcinoma was suspected. Biopsy No. 1303-4/56 revealed epithelioma. (Fig. 2).

Case 3: *Epithelioma Over Para Umbilical Region*: Male, Hindu, aged 23 years developed nonhealing ulcer. (Fig. 3). Biopsy No. 716/61 showed epithelioma.

Case No. 4: *Epithelioma Over The Nape of the Neck*: Male aged 50 years developed an ulcer extending the nape of the neck to the occipital region. (Fig. 4) Biopsy No. 1645/60 showed epithelioma.

Case 5: *Epithelioma in An Implantation Cyst*: Occassionally implantation cysts are the sites of malignant transformation. (Fig. 5). The cyst was in the midline of the neck for 8 years in a male aged 25 years.

Case 6: *Sebaceous Cyst Carcinoma*: Out of 26 cases of sebaceous cysts registered three cases presented squamous cell carcinomatous change. This is rather of high incidence. (Fig. 6)

Case 6A: *Sebaceous Cyst Carcinoma*: Muslim male aged 50 years had a swelling over the occipital region. Biopsy No. 3227/58 showed epitheliomatous change in a sebaceous cyst. (Fig. 7)

Case 6B: *Sebaceous Cyst Carcinoma*: Hindu male aged 60 years had cyst over the forehead. This was ulcerated. Biopsy No. 693/59 ehowed squamous-cell carcinoma in a sebaceous cyst. (Fig. 8).

In cases 2 to 6B a comman pathogenetic mechanism seem to play in intiating malignant change. It is believed that constant friction by clothes or load carried liberates sebaceous material which turns to be a chemical carcinogen and the same material contained in sebaceous or dermoid cysts induces carcinomatpus change. (Khanolkar and Surya Bai).

Case 7: *Squamous Cell Carcinoma in a Burn Scar*: Extensive ulcerative and proliferative lesion was seen over bend of the knee. Residual healed burn scars could be seen. Sections of the scar revealed squamous cell carcinoma. (Fig. 9). Similarly another patient had growth over the mid arm (Fig. 10) and cicatricial contraction of the skin owing to burn scars was made out. Biopsy showed squamous cell carcinoma. These two cases typify Marjolin's ulcer, result of constant friction over burn scars.

Case 8: *Xeroderma Pigmentosa and Squamous-cell carcinoma*: B. V. S. R., a male a child age 5 years showed pigmented spots all over the body. (Freckles) The body developed warty growth and ulcerated nodules over the forehead, malar area and conjunctiva. He developed photophobia. (Fig. 12). Sections of this showed squamous papilloma and carcinoma. Long sleeve jacket, pyjamma, hood,

tinted glasses for the eyes and antiactinic cream for hands and face were applied to prevent malignant change.

Case 8 A Xeroderma Pigmentosa and Squamons-Cell Carcinoma: A girl aged 12 years developed fumgating growth of the scalp. A few months later she developed a similar growth skin over the cheek. Sections of these showed squmous cell carcinoma. (Fig. 12) She had freckles all over the body. In two more families children with photophobia and freckles were seen. (Figs. 13 & 14) These are kept under observation.

Basal-Cell Carcinoma: Basal cell carcinoma is the next frequent malignant tumour of the skin. They were 21 and 18 of them were over the face, forehead and scalp. Two were over the chest and one over the back, Some of them were of considerable size. Some of them were of the pigmented basal cell carcinoma type. One of them was located over the lip. (Fig. 15) All the histological variants of basal cell carcinoma-solid buds (Fig. 16) adenoid cystic epitheliomatous pattern, (Fig. 17) and cylindromatous types were seen. (Figs. 18 & 19) In none of them lymph nodes were enlarged.

TABLE 4

Site Distribution of Basal-cell Carcinoma.

Site	Face	Forehead	Nose	Back	Chest Wall	Scalp	Close to Eye lids
Number	4	2	1	1	2	1	10

Malignant Melanoma: There were 20 cases of malignant melanoma. In addition to these the registry contained 2 cases of pigmented epithelioma and 2 cases of pigmented basal cell carcinoma. 16 of the 20 cases were seen over the foot. (Table 5)

TABLE 5

Site Distribution of Malignant Melanoma

Site	Foot	Buttock	Thigh	Back	Inguinal Region
Number	16	1	1	1	1

Case 9 Malignant Melanona witn Lymph Node Metastases: Patient gave the history of an indurated ulcer developing in the sole of the foot after a thorn prick. (Fig. 20) The foot was amputated and the ulcer was shown to be malignant melanoma. Some time later he developed swelling of the inguinal lymph nodes which on excision revealed melanomatous deposits. (Figs, 21 & 22)

Case 9 A Malignant Amelanotic Melanoma Foot: An old lady following a thorn prick developed a growth over the foot. The leg was amputated. (Fig. 23) Sections of the tumour mass showed amelanotic melanoma. (Fig. 24)

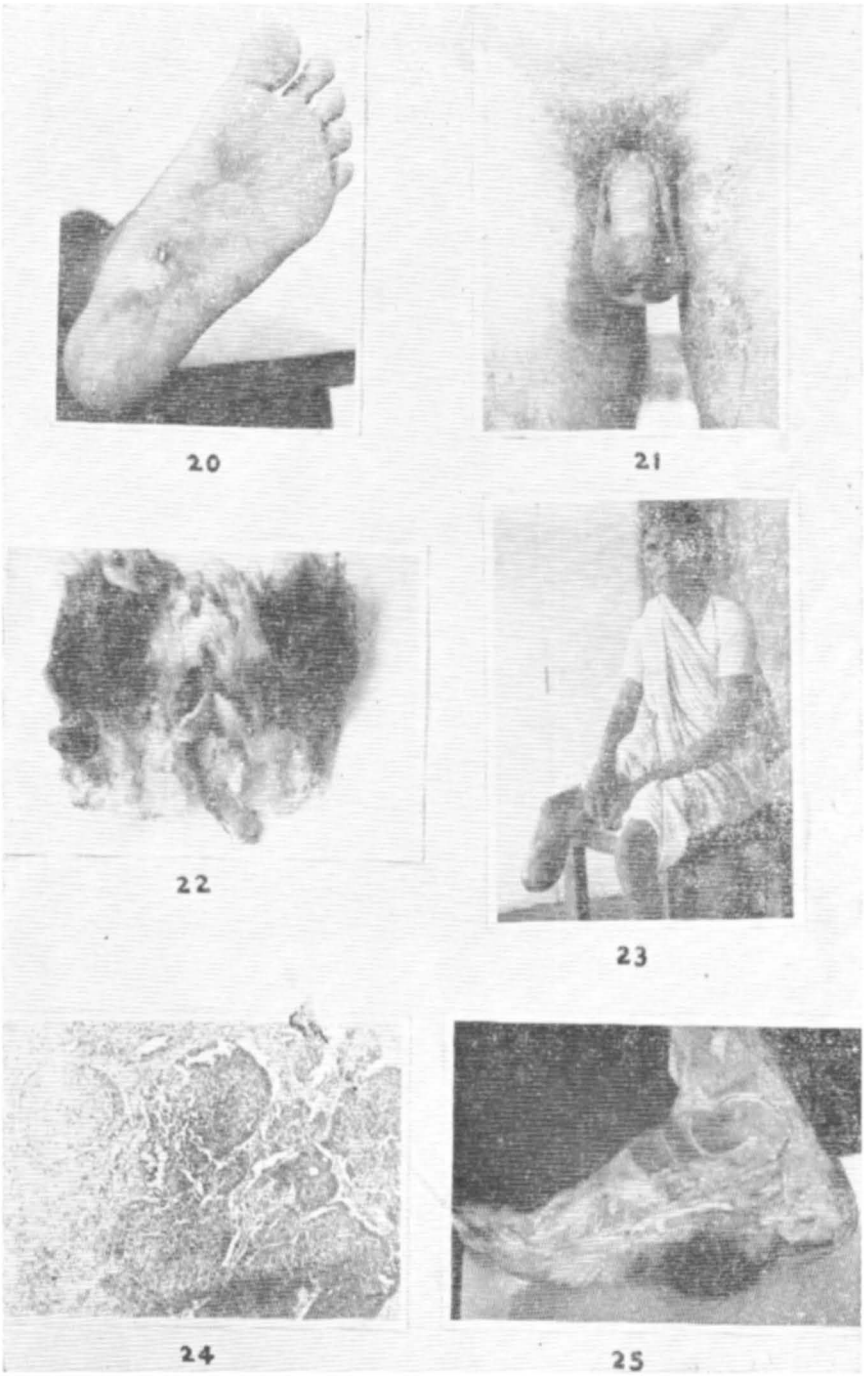
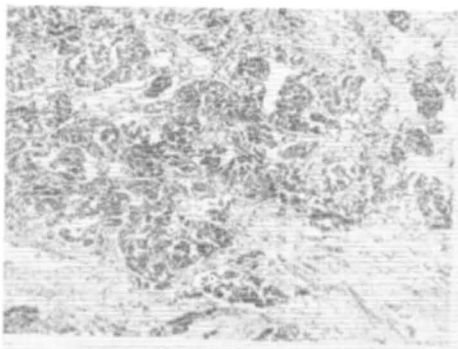


Fig. 20. Melanoma Foot.
Fig. 21. Melanomatous Deposits in Inguinal Lymph Nodes.
Fig. 22. Excised Inguinal Lymph Nodes with Melanomatous Deposits.
Fig. 23. Photograph shows Amputated Leg For Melanoma.
Fig. 24. Photomicrograph of Amelanotic Melanoma (H & EX 100).
Fig. 25. Photograph Shows Sectioned Surface of Amputated Foot Witn The Black Tumour.



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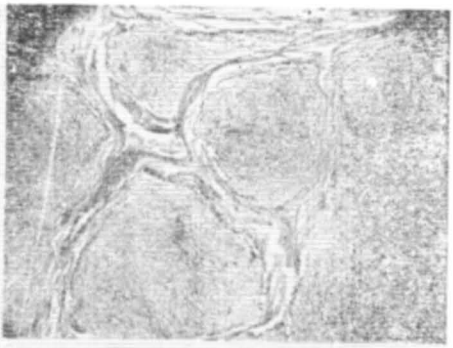

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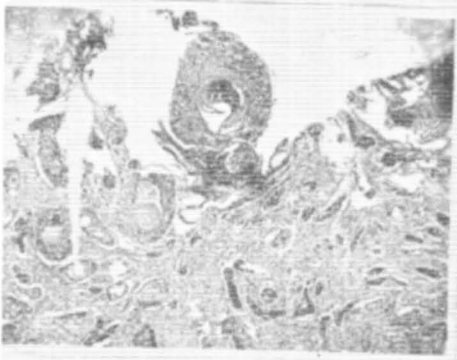

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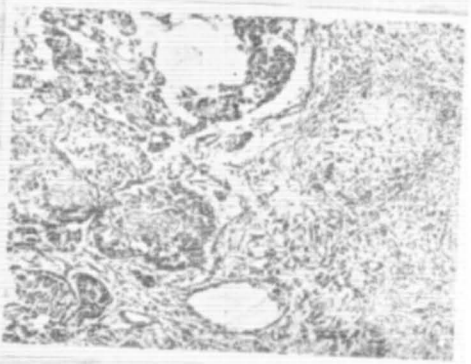

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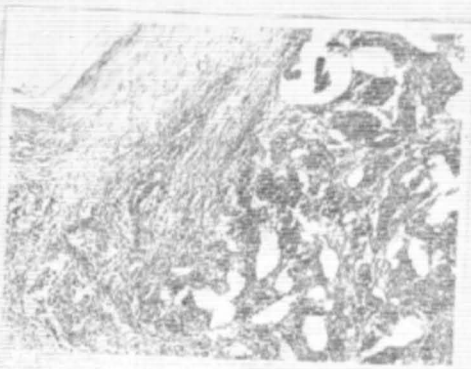

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Fig. 26 Photomicrograph Shows Malignant Melanoma (H & EX 90).
Fig. 27. Photomicrograph Illustrates Amelanotic meladoma. (H & EX 45)
Fig. 28. Photomicrograph Illustrates tricho-epithelioma. (H & EX 40).
Fig 29. Photomicrograph shows epithelloma and sarcomatous components of carcino-sarcoma. (H & EX 100)
Fig. 30. Photomicrograph Illnstrates Adenocarcinomatous Deposit in Skin. (H & EX 60)

Case 9 B Malignant Melanoma Foot: An young male developed a black tumour over the mid sole of the foot. (Fig. 25) The foot was excised and sections of the tumour showed typical melanoma picture. (Fig. 26)

Case 9 C Amelaotic melanoma: A female aged 60 years had a nonhealing ulcer foot. Section of it showed amelanotic melanoma. (Fig. 27)

Case 10 D Tricho-epthelioma: One occasionally encounters a tumour of the hair matrix. This is of low malignancy or doubtful malignancy. We had two cases in the registry.

A Hindu male aged 30 years had an ulcer over the right side of the cheek. Section of it showed typical features of tricho-epithelioma. (Fig. 28)

Carcinosarcoma: This is an uncommon tumour of the skin. Careful histological examination of sections from multiple blocks could only disclose the twin elements of this combination tumour.

Case 11 Hindu male aged 45 years had a fungating growth left shoulder. He noticed it six months back and increased in size after applying counter irritants. No lymph nodes were palpable. The tumour was excised. Sections covering the tumour were studied. Well differentiated epithelioma with tumour emboli were seen. Close to this but distinct from it the stroma showed sarcomatous change. (Fig. 29). Myxomatous change of the stroma was observed. These changes are typical of carcinosarcoma.

Case 12 Adenocarcinomatous Deposit In The Skin: At times secondary carcinomatous deposits in the skin need to be differentiated from sweat gland carcinomas. These secondaries often arise from hepatoma, bronchogenic carcinoma or hyper nephroma. We had only one case of adenocarcinomatous deposit. (Fig. 29)

SUMMARY

1. For the period 1955 to 1962 there were 132 malignant tumours of the skin out of 3083 malignant tumours in other sites registered, giving a percentage of 4.2. This is higher than what is reported for the people in the tropics.

2. Of these epithelioma contributed to over 50% and many of them were secondary to either trauma or friction or burns. or actinic ray as in Xeroderma pigmentosa.

3. Basal cell carcinomas were not infrequent and all histological variants were encountered.

4. Malignant melanoma is a frequent epithelial tumour of the skin and its occurrence in 80% of the cases does strongly support trauma as causal in the barefooted individuals.

5. Occasionally adenocarcinomatous deposits may be encountered as secondary from an known or unknown primary neoplasm.

6. Carcino-sarcoma, a rare type of combination tumour of skin is described.

7. The findings recorded above strongly suggest preventive measures against cutaneous malignancies.

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ERRATA

RECENT ASSESSMENTS IN THE AETIOLOGY AND THERAPY OE SKIN CARCINOMAS

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October-December 1963 issue

On page 196 last para: the names and years in the brackets should read (Laycock, 1954; *Ward, W. H., 1955, Ward, J., 1956.*

On Page 198, 1st para: should read in the 2nd line "*dermatitis, Bowen's disease, arsenical keratoses, burn scars, chronic sinuses, fissures.*

On page 212 references, No. 77 should read Ward, J., *(1956) not 1950.*

The legend under Fig. 4 applies to Fig. 5 and vice versa.