PERITUMOURAL LEUKODERMA

K. PAVITHRAN

Summary

Two patients with multiple, metastatic nodules in the skin are described. One of them was a 52 year old man who had midtarsal amputation of his right foot for 'melanoma' of the sole. The other was a female patient who presented with multiple cutaneous nodules which on histology proved to be undifferentiated carcinoma cell deposits. The primary site of carcinoma was not detected in this case. Both patients developed leukoderma around the metastatic nodules. Peritumoural leukoderma was followed by the spontaneous regression of two metastatic nodules in the latter case. The possible mechanism is discussed with a short review of the literature.

Leukoderma acquisitum centrifugum is a skin lesion in which a centrally placed skin tumour is surrounded by an acquired zone of depigmentation[1]. Usually the central tumour is a nevus cell nevus and so 'halo nevus' has been used as an alternate term. Similar phenomenon can occur around various skin lesions like neurofibroma[1], seborrhoeic keratosis, psoriasis, fibroma, papular sarcoid, vascular nevus, lichen planus[2], and German measles[3]. There are isolated reports of the development of leukoderma around malignant melanoma lesions in the skin[4-11]. Though some of these patients had received chemotherapy or irradiation before the development of leukoderma[7,12], others without any form of therapy also noticed similar loss of pigment of theskin[8,11]. Champion[9] in 1964 reported under the title of "Malignant Sutton Nevus" an unusual lesion which clinically presented as a central nodular melanoma surrounded by a pale zone which in turn was almost completely encircled by a zone of senile lentigo.

Spontaneous regression of melanoma has been noted previously[13,14]. But the development of peritumoural leukoderma before the spontaneous regression[1,4,5,6] is an interesting phenomenon to the dermatologists. Here two cases in which leukoderma developed around distant cutaneous metastases, one from a melanoma of the foot and the other from an occult carcinoma, are being reported.

Case No. 1 : A 52 year old farmer had mid-tarsal amputation in Feb 1977 for melanoma of the right sole which he developed on a pre-existing 'mole'. He had not received any form of chemotherapy for the growth. Block dissection of the inguinal glands was not done. Six months after surgery, on follow up, he was found to have a hard nodule 3 x 2 cm in size on the medial aspect of the right leg (Fig 1). The skin over and 1 cm around the nodule was found depigmented, which the patient noticed since one month

Tutor
Department of Skin & V.D.,
Medical College Hospital,
Trivandrum-695011

Received for publication on 16—8—80.

only. More detailed examination revealed multiple, hard nodules on the trunk also (Fig. 2) and most of these nodules showed leukoderma on and around their surface. The inguinal group of lymph glands were not enlarged. There was no hepatosplenomegaly. All other systems were clinically normal.

Investigations: Hb, WBC total and differential count, routine and microscopic, urine, LFT and X-ray of the chest, spine, skull and long bones were found to be normal. Histological study of one of the skin nodules revealed dense collection of tumour cells in dermis and subcutis. Most of these were epithelioid type and contained melanin. There were several mitotic figures in the tumour cells. Inflammatory cells were scanty. There was no junctional activity. The epidermis was found thinned out.

Patient was given palliative irradiation but he developed 'secondaries' in liver and was discharged from the ward at his request. The skin nodules did not regress and the leukoderma had persisted.

Case No. 2: A 52 year old house wife attended the Dermatology O.P. at Medical College Hospital, Calicut in June 1977 with complaints of multiple nodules on the trunk, for 6 months. She had noticed depigmentation of skin around these nodules for 2 months. On examination there were multiple,

Fig. 1

Metastatic nodule of melanoma on the right leg. Note depigmentation of skin over the nodule. He had mid-tarsal amputation of the right foot for melanoma of the sole.

hard, non-tender nodules on the trunk with surrounding leukoderma (Fig. 3). The skin overlying the nodules was adherent to the underlying mass and had Peau d' orange appearance. General systemic, vaginal, bimanual and rectal examinations revealed no abnormality. A clinical diagnosis of

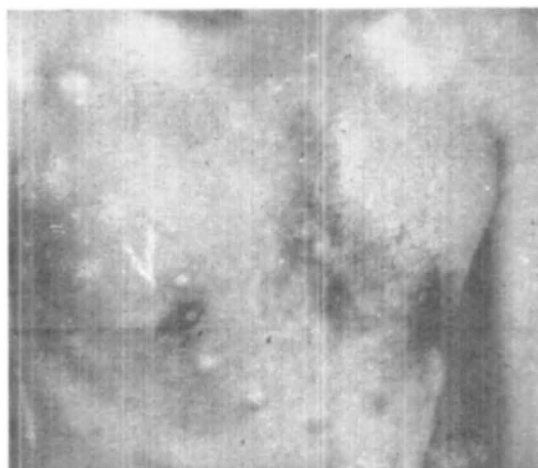

Fig. 2

Multiple metastatic cutaneous nodules of melanoma. Note leucoderma on the surface and around the nodules.

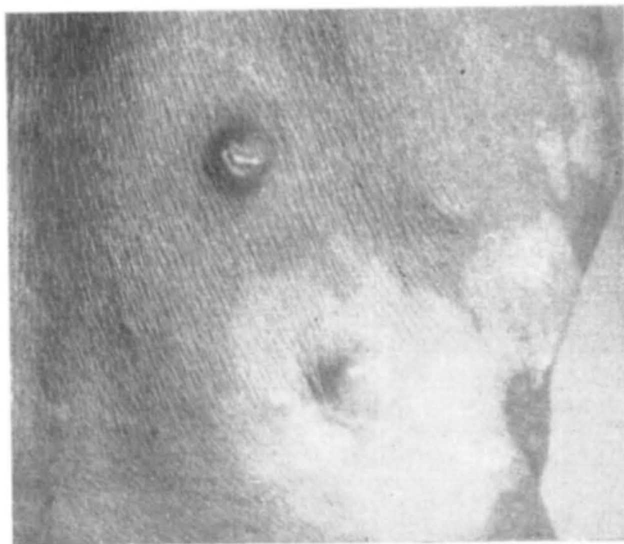

Fig. 3

Note multiple metastatic nodules in the skin from an undetected primary carcinoma. The skin over and around the nodules are depigmented.

cutaneous metastases was made and patient was subjected to detailed investigations.

Investigations: Hb, total and differential leucocyte count were normal. ESR was raised to 80 mm-hr (Westergren). Routine microscopic examination of urine was normal. Sigmoidoscopy, barium meal study ; X-ray of the chest, long bones and spine, LFT and thyroid function studies did not reveal any abnormality. Histological study of a skin nodule revealed dense collection of highly anaplastic tumour cells in the dermis and subcutis and was reported as "undiff rentiated carcinoma". Special staining for mucin gave negative result. The epidermis was found thinned out.

Thus we were unable to detect the site of primary carcinoma in this lady who presented with multiple metastatic nodules in the skin. She was advised radiotherapy. She went home and attended the radiology department 4 months later, when, surprisingly, it was found that 2 of the nodules had regressed completely leaving only depigmentation of the skin. She was given palliative radiation and a course of cyclophosphamide *(Endoxan)*. Most of the nodules showed tendency to regress partially. One year follow up of the patient did not reveal any recurrence, after which she was lost for follow up.

Discussion

While a considerable amount has been published on the halo nevus phenomenon, only few reports deal with leukoderma in association with melanoma. Case No. 1 presented with multiple metastatic deposits of melanoma in the skin. Peritumoural leukoderma as observed in this case has been reported previously also[4-11]. Chemotherapy for melanoma has been suggested as a possible aetiological factor for the development of leukoderma in some cases[12]. But our patient developed leukoderma without any preceding chemotherapy. The exact mechanism of this interesting phenomenon is not well understood. Though there was no evidence of spontaneous regression of metastases after the development of peritumoural leukoderma in this patient, previous reports [1,4,5,6] indicate that the chance of spontaneous regression of the tumour is more once the peritumoural leukoderma develops. Since benign nevi

can disappear following the occurrence of leukoderma, in the halo nevus phenomenon, the possibility exists that there is a similar mechanism responsible for the destruction of tumour cells. The patient reported by *Kopfetal*[1] had pituitary involvement by the growth and he suggested that involvement of the pituitary leading to a decrease in MSH in serum is responsible for the acquired leukoderma in his patient. X-ray skull of our patient did not show any evidence of involvement of the pituitary. Generalised melanosis, a feature of late stage of melanoma[15] was not seen.

Case No. 2 which presented with multiple metastatic carcinoma in skin also had peritumoural acquired leukoderma. Though such depigmentation of skin has been noted in various benign lesions[2],[3] and melanoma it has not been reported previously in metastatic carcinoma of the skin, to the best of our knowledge. In cutaneous metastases caused by haematogenous spread of a visceral carcinoma the appearance of skin lesions in a high percentage of cases is an early event and often precedes the recognition of primary tumour. Usually in such cases the nodule is only one or at the most few[16]. Our patient had multiple nodules. Spontaneous regression of two nodules in our patient is interesting. It is comparable to the halo nevus phenomenon. The primary site of carcinoma could not be detected in this case. Although histologic examination of skin metastasis may sometimes indicate the site of primary tumour, metastatic anaplastic cancers do not usually reveal their source on histologic study[7] as in this case. Presence of mucin may suggest the origin of a tumour from gastro intestinal tract[17]. Special staining did not reveal much in this case.

References

1. Kopf AW, Morril SD and Silberberg I : Broad spectrum of Leukoderma Acquisitum centrifuugm, Arch Derm 1965, 92 : 14.
2. Robinson : ADS, 1938, 38 : 200. Quoted by Sutton RL ; Malformations and Neoplasms of the skin and adjoining mucosae, Diseases of the skin, 11th Edn, Sutton RL, The C.V. Mosby Company, St Louis, 1956, p 1034.
3. Feldman : ADS, 1936, 32 : 942. Quoted by Sutton RL : Malformations and Neoplasms of the skin and adjoining mucosae, In Diseases of the skin, 11th Edn, Sutton RL, The C.V. Mosby Company, St Louis 1956, p 1034.
4. Sunmer WC : Spontaneous regression of melanoma, Cancer, 1953, 6 : 1040.
5. Sumner WC and Foraker : Spontaneous regression of human melanoma, clinical and experimental studies, Cancer 1960, 13 : 79.
6. Everson TD : Spontaneous regression of Cancer, Ann NY Acad Sci 1964, 114 : 721.
7. Karcher KH : Systematisierte Depigmentierung bei strahlen behan delten Melanomen, Dermatologica 1960, 120:255,
8. Ito M and Yoshida Y : Malignant melanoma, Tohoku J Exp Med 1952, 55 : 60. Quoted by Kopf AW, Morril SD and Silberberg I : Broad Spectrum of Leukoderma Acquisitum Centrifugum, Arch Derm 1965, 92 : 14.
9. Champion RH : Unusual melanoma-Malignant Sutton's Nevus, Brit J Der 1964, 76 : 347.
10. Sharpiro L and Kopf AW : Leukoderma Acquisition Centrifugum, Arch Derm 1965, 92 : 14.
11. Burdick KH and Hawk WA : Vitiligo in case of vaccinia virus treated melanoma, Cancer 1964, 17 : 708.
12. Matuzawa J, Watanabe M and Kondo R : Case of leukoderma in X-rayed portion of patient with melanosarcoma, Shinshu

Med J, 1953, 2 : 54. Quoted by Kopf AW, Morril SD and Silberberg I : Broad spectrum of leukoderma acquisitum centrifugum, Arch Derm 1965, 92 : 14.

13. Everson TC and Cole WH : Spontaneous regression of malignant disease, JAMA, 1959, 169 : 1758.

14. Allen EP : Malignant melanoma-Spontaneous regression after pregnancy, Brit Med J 1955, 2 : 1067.

15. Silberberg I, Kopf AW and Gumport SL: Diffuse melanosis in malignant melanoma, Arch Derm 1968, 97 : 671.

16. Kahn JA, Sinhamohapatra SB and Schneider AF : Hepatoma presenting as a skin metastasis, Arch Derm 1971, 104 : 299.

17. Braverman IM : Cancer, in skin signs of systemic disease, Braverman IM, WB Saunders Company, London 1970, p 1.

I. U. V. D. T. Conference

The 2nd regional meeting of International Union against the Venereal Diseases and Treponematoses Conference 1981, S. E. Asian and Western Pacific Region, will be held from October 23-26, 1981.

Proposed Themes with special emphasis on regional problems will include :

Primary Theme

1. The changing pattern of drug resistance of the gonococcus (with special reference to B Lactamase producers) and its effect on treatment and control.

Secondary Themes

1. The rising tide of Viral S. T. D.
2. Recent problems with the control of Syphilis
3. Is a chlamydial laboratory service worthwhile ? (N. S. U. and Chlamydia - help or hindrance)
4. Obstetric venereology

Included amongst the overseas speakers wiil be Dr. R. D. Catterall of London, president of the I. U. V. D. T. Notable speakers from the U.S.A. and Singapore are also anticipated.

Anyone wishing to attend and/or present a paper please address enquiries to : I. U. V. D. T. Conference, Postgraduate Office, The Medical Centre, Christchurch Hospital, Christchurch, New Zealand.

(See page No. 189)