WHITE ANETODERMA

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Abstract

The entity 'White Anetoderma' has been studied histologically and its differentiation from similar clinical conditions has been discussed. That the macular white anetoderma manifests as a spontaneous suppression of melanogenesis with age, has been suggested.

It is seen as a well defined, whitish, pinhead to a pea sized, discrete macule with slight wrinkling. They are usually seen in persons past 35 years of age. Histologically they show absence of DOPA positive cells in the basal layer and atrophic changes in the corium.

They are often confused with vitiligo; hence our attempt to describe the condition as a definite entity.

Name 'White Anetoderma' appears to us to be most appropriate for the simple reason that it is whitish in colour and shows atrophic dermal changes.

Anetoderma, the linear or the macular varieties, are entities which are thought to be caused by stretching, pressure, inflammation, malnutrition etc. producing atrophy of the skin due possibly to damage to the underlying elastic fibres. In our practice, we very often come across cases where patients complain of small pinhead to pea sized, single or multiple, whitish macules, located mainly on the forearm, leg, thigh and occasionally lower part of trunk (Fig 1). These patients are usually over 35 years of age. On careful history and follow up we find these white spots remaining stationary in size and shape for years. No history of previous skin disease, inflammation or injury to the part in any form could be obtained. These whitish macules had a fairly well-defined border, with slight wrinkling of the surface. There was no infiltration or any other detectable morphological change. Its peculiar clinical presentation, confusion with vitiligo and the frequency with which it occurs attracted our attention. Since it did not fit in with any known clinical pattern, we gave it the name of 'White Anetoderma'.

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Materials and Methods

20 cases of 'White Anetoderma' were subjected to histomorphological study to find out if there is any underlying tissue change. The whitish macules which persisted for atleast 3 years without any alteration in size, were included in the present study. Out of 20 cases, 6 were females and 14 were males. The duration of individual lesion and site has been shown in Table No. 1

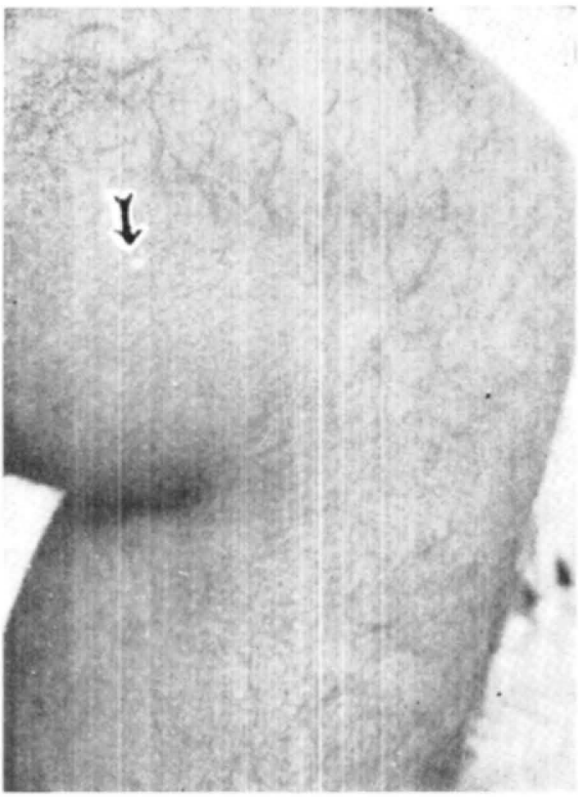

Fig. 1 A whitish macule is seen on the thigh having a well defined border (arrow).

Punch biopsies were taken by a punch biopsy needle having a diameter of 7 m.m. Care was taken to include a portion of the surrounding normal skin. The circular piece of skin thus obtained was divided into two equal parts, each part representing a portion of the white macule as well as the normal skin. One half of the skin piece was subjected to DOPA processing[1], and the other half was submitted to routine processing. Paraffin blocks were made and cut at 6μ. Serial sections were obtained and stained with haematoxylin and eosin and Verhoeff's haematoxylin elastic tissue stain[2]. The sections were studied and the findings summarised.

Results

On examination of the sections stained with haematoxylin and eosin we found that the melanin and basal clear cells were diminished or absent. There was no consistent increase of suprabasal clear cells which, of course, were seen occasionally. This feature was evident in sharp contrast to the normal skin possessing normal amount of melanin and large number of clear cells in the basal layer. The keratin layer appeared to be relatively thicker on the affected side. There was a reduction in the number of layers in the stratum malphigian, resulting in relative thinning of the epidermis (Fig 2). The rete ridges were short and blunted. On DOPA staining, there was complete absence of DOPA positivity whereas the normal skin portion was strikingly DOPA positive (Fig 3). The dermis showed an increase in collagen which were all closely packed bundles and focally hyalinised (Fig 4). By Verhoeff's haematoxylin elastic stain, a conspicuous reduction or at places even complete absence of elastic fibres was also observed (Fig 5). In comparison to this, the normal skin portion showed many elastic fibres in the upper dermis (Fig 6). In spite of the change in the dermal collagen and elastic fibres, the skin appendages did not show any appreciable change. The dermal blood vessels were unaffected. Sparse mononuclear cells lying in upper dermis were rarely observed.

Discussion

This entity, white anetoderma, is characteristic in its clinical presentation and peculiar in maintaining a constancy in growth pattern. It is important to recoginse this entity because it closely

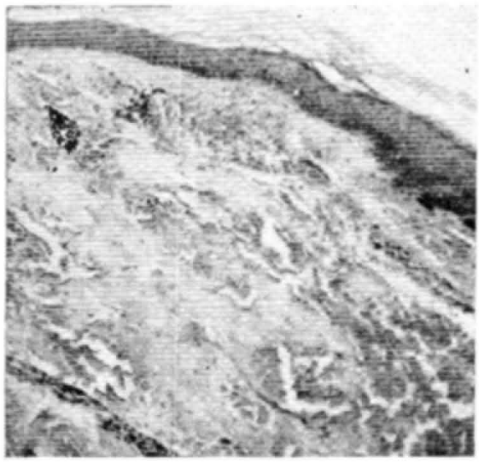

Fig. 2 The epidermis on the left side (white anetoderma) is thin and flat. The basal layer contains very little melanin. The normal skin on the right side has abundant melanin in the basal layer and the rete ridges can be seen (H & E x 35).

mimicks vitiligo. The following entities should be differentiated from white anetoderma.

1. Anetoderma
2. Vitiligo
3. Morphea

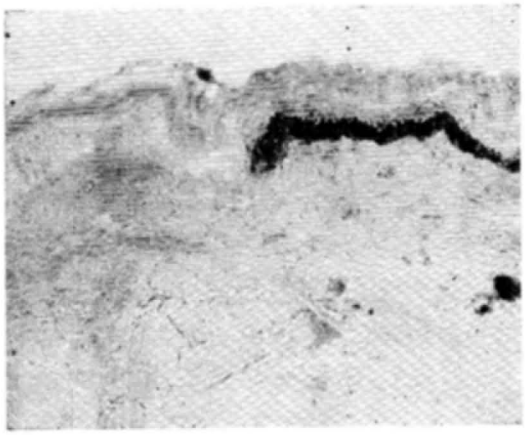

Fig 3 There is DOPA positive basal layer on the right side (normal skin) in contrast with DOPA negative reaction on the left (White Anetoderma) (DOPA x 100)

TABLE 1

Patients with Anetoderma

Case No.	Sex & Age	Sites of lesion	Number	Duration of lesion in years
1.	M 53	Leg	1	15
2.	M 41	Forearm	1	9
3.	F 65	Forearm, Leg	2	3
4.	M 44	Leg	1	3½
5.	M 48	Leg	1	6
6.	M 37	Both legs	2	4
7.	F 60	Lower back	1	7
8.	M 47	Wrist	1	10
9.	M 38	Thigh	1	4
10.	M 65	Legs, Lower abdomen	5	12
11.	F 53	Thigh	1	3
12.	M 48	Both legs	2	13
13.	M 55	Leg	1	15
14.	M 46	Leg, Thigh, Forearm	3	7
15.	F 84	Leg	1	6
16.	F 82	Forearm	1	13
17.	M 45	Lower abdomen	1	3
18.	F 66	Leg, Forearm	2	3
19.	M 50	Leg	1	6
20.	M 61	Forearm	1	11

Anetoderma of Jadassohnn follows several diseases like syphilis, leprosy, typhoid, obesity, Cushing's syndrome, malnutrition and collagen disorders etc. Macular atrophic areas with no loss of pigmentation is typical. It is usually seen in females of 20-40 years. Herniation is seen on palpation. DOPA reaction of the basal layer is positive.

Anetoderma of Schweninger Buzzi is seen as a bladder like new growth. By pressure, these can be inverted like a hernia into a hole in the corium. The basal layer contains DOPA positive cells.

Macular Morphea is a distinct clinical entity with thickening of the skin. On histological examination, there is extensive dermal sclerosis with atrophy of the skin

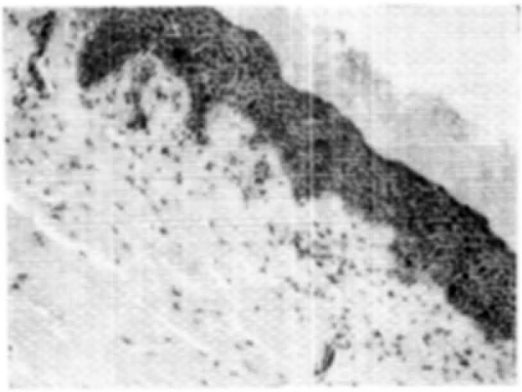

Fig. 4 The keratin layer is slightly thick. There is no melanin or clear cells in the basal layer. Sclerosis and focal hyalinisation is seen in the dermis. Sparse mononuclear cells are seen in the upper dermis. (H & E x 100)

appendages and thickening of the vessel wall. The basal layer shows DOPA positive reaction.

Vitiligo is a progressive or regressive lesion with complete depigmentation, absence of atrophy and DOPA negativity of the basal layer. There are no dermal changes in the collagen or elastic tissue. Cause is enigmatic.

After we have recognised this condition as a distinct clinical entity, the next logical question would be 'What is it due to?' The main histomorphological change as described above are the DOPA negativity and absence of melanin in the basal layer, and an increased amount of dermal sclerosis with reduction of elastic fibres. It must be pointed out that the dermal changes mentioned above become evident in lesions of long duration which may not be apparent in earlier lesions. Further, these white spots remain stationary in size and shape for years together (Table 1). One of the authors has similar spots on his right forearm and right leg (total 3) for the past 7 years without any alteration in clinical morphology of the lesion. Since no histomorphological change within the purview of our study could be demonstrated we presume that the absence of melanocytes and DOPA negativity of the basal layer in this presenile or senile age group might be as a result of spontaneous depression of melanogenesis as against spontaneous over production of melanin which results in senile lentigo. The dermal sclerosis and reduction in elastic fibres are interpreted as associated features of ageing, becoming more conspicuous with the ageing of the lesion. The name 'White Anetoderma' is recommended. White for depigmentation and Anetoderma for dermal changes. Absence of preceding history of inflammation or injury further establishes that the condition is primary and not secondary.

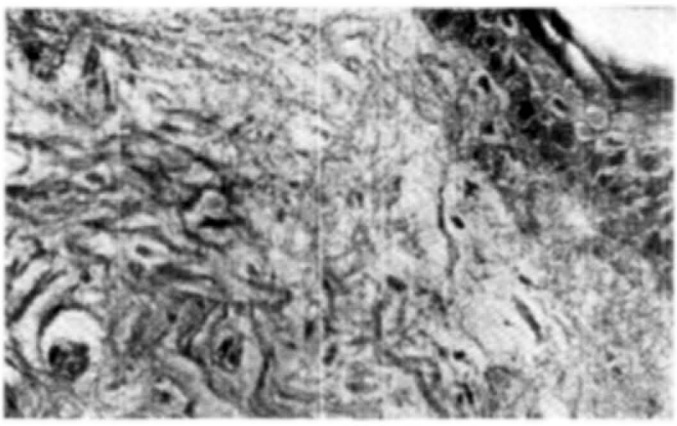

Fig. 5 The basal layer is devoid of pigment. There is no elastic fibre in the underlying dermis. (Verhoeff's Haematoxylin Elastic stain x 250)

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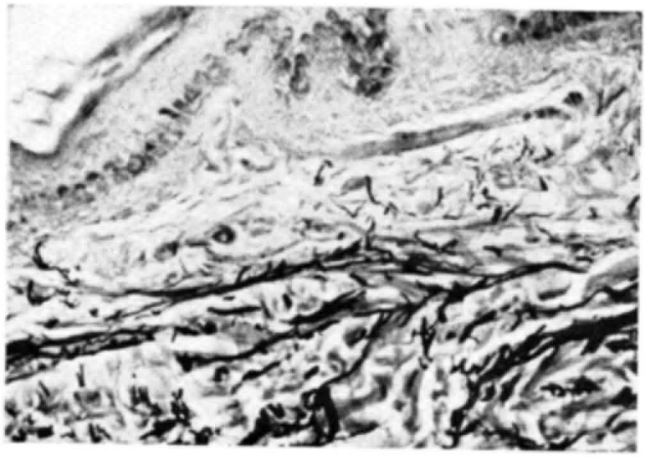

Fig. 6 Many elastic fibres in the upper dermis are seen in a normal skin. Compare with Fig. 5. (Verhoeff's Haematoxylin Elastic stain x 250).

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The VII Annual Conference of Indian Association of Dermatologists, Venereologists and Leprologists will be held at Srinagar in May 1979.