

NECROBIOSIS LIPOIDICA DIABETICORUM (Report of a new clinical entity)

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Summary

Necrobiosis lipoidica diabeticorum (NLD) presents a typical clinical picture. There are also five atypical forms. This is a report of a 6th atypical form of NLD which presented as lichen simplex chronicus and had characteristic histopathological features.

Amongst the cutaneous manifestations of diabetes mellitus, necrobiosis lipoidica diabeticorum (NLD) is rare. It may be directly related to abnormal carbohydrate metabolism, or occur in its absence. Clinically NLD appears as multiple yellow, red, or bluish nodules and yellowish sclerotic plaques that vary in size and occur chiefly on the extremities, but, at times, elsewhere on the body.

Materials and Methods

A study was undertaken among 200 established diabetics to study various cutaneous manifestations. The most prominent part of the skin lesion was selected for histopathological studies. Specimens were stained with Harris haematoxylin and eosin solution,

periodic acid Schiff stain and Van Gieson stain. Frozen sections were made for demonstration of fats and other lipids.

Observations

Four diabetic patients (2.0%) were found to have necrobiosis lipoidica diabeticorum (NLD) out of which three patients were males and one a female. The average age of onset of NLD was 40.7 years; in two cases, NLD appeared four years after the control of diabetes. Three cases had typical clinical pictures confirmed by histopathology, but in the fourth case there was a hyperkeratotic plaque 4 c.m. x 4 c.m. in size located in front of the left ankle with a verrucous surface, and well defined borders and severe itching (Fig. 1). Clinically it was diagnosed as lichen simplex chronicus but the histopathology showed typical dermal changes of NLD.

Histopathology: The skin lesion which was clinically diagnosed as lichen simplex chronicus, showed marked hyperkeratosis and irregular acanthosis of the epidermis (Fig. 2). The epidermis of rest of the three cases was normal. The histopathological changes in the dermis were almost identical in all 4 specimens (Fig. 3).

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Fig. 1
A typical form of Necrobiosis lipoidica diabetica presenting as Lichen Simplex Chronicus.

There were areas of extensive necrobiosis in the upper dermis with multiple large and diffuse palisading granulomas. The granulomas consisted of central necrobiotic connective tissue and peripheral inflammatory infiltrate



Fig. 2
Marked irregular acanthosis in epidermis and palisading granulomas in upper dermis (H & E x 100)

made up of variable numbers of histiocytes and lymphocytes. A few epithelioid and giant cells were occasionally present. Foam cells were present in granulomas and also in areas of collagen degeneration. There were marked vascular changes showing endothelial proliferation and deposition of PAS positive material around the blood vessels. Frozen sections stained with Sudan IV showed numerous fat globules and Van Gieson stain showed the breakdown of collagen in areas of necrobiosis.

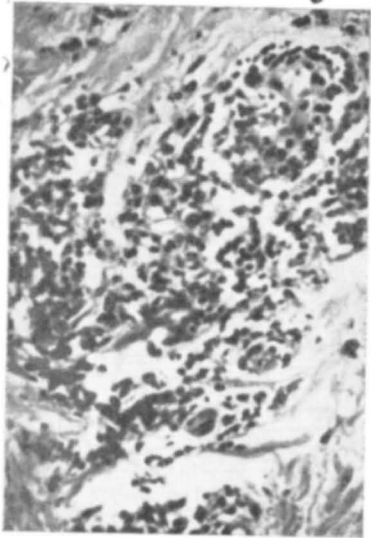


Fig. 3
Full blown granuloma showing chronic inflammatory cells and fat vacuoles (H & E x 400).

Discussion

The incidence of necrobiosis lipoidica diabetica was 2% in contrast to the previous study² which showed only 0.3%. The greater incidence of NLD in India could be due to the greater incidence of cutaneous manifestations than in Western countries and the increased incidence in males might be due to male dominance in Indian diabetes⁴. In two cases NLD appeared even after the diabetes was under control. This finding is in agreement

with the views of others⁵, who described that the control of diabetes does not influence the course of the disease.

The lesions of NLD are grouped histopathologically into three principal types: (1) palisading granulomatous, (2) tuberculoid, and (3) intermediate. The palisading granulomatous type is characteristic of the lesions from patients with diabetes mellitus where epithelioid cells and giant cells are not conspicuous². In all four cases we found moderate palisading rather than unique histocytic epithelioid cell reaction of NLD occurring in nondiabetic patients.

The extensive necrobiosis with significant amounts of lipid seen in our cases, have also been well described by others³, and the vascular changes, however, are part of the process of necrobiosis, hyalinisation and fibrosis of the collagen. In general, the epidermal changes are not significant in NLD. In three cases the epidermis was either normal or atrophic. However, the fourth which was clinically diagnosed as lichen simplex chronicus, showed marked hyperkeratosis and irregular acanthosis and

hyperkeratosis have also been observed by other workers, but these rare changes were seen in typical NLD lesions³. Until the present time, 5 atypical forms of NLD were known. These were (1) Nodular and noduloulcerative type (2) ulcerative type with a red border, (3) granuloma annulare like, (4) scaly polycyclic type (5) like angiodermatitis⁴. This entity presenting as lichen simplex chronicus adds to the previous list as the 6th atypical form of NLD.

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