

## BULLOSIS DIABETICORUM

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### Summary

The incidence of "bullous diabeticorum" was 1% in a study of 200 diabetics. In the past it has been reported that bullous diabeticorum is always an intraepidermal bullous disorder. Recently Kerl and Kresbach<sup>7</sup> reported subepidermal bullae in this condition. In this study, bullous diabeticorum in 2 patients with diabetes showed intraepidermal bulla in one and subepidermal bulla in the other.

Bullous lesions in diabetics are common like other cutaneous lesions. Rocca and Pereyra in 1963 first described 14 diabetics who developed bullous lesions of feet without any trauma. The lesions were superficial, asymptomatic and healed slowly without scarring. Subsequently this condition was termed as "Bullous diabeticorum" by Cantwell and Martz<sup>1</sup> in 1967 who described these bullae as being intra-epidermal, asymptomatic and multiple. Other authors<sup>2</sup> reporting a study of 5 cases of bullous diabeticorum found that intra epidermal bullae were present in all the cases without acantholysis. Various other workers<sup>3-6</sup> also reported the intra epidermal site of the bullae in bullous diabeticorum. But Kerl and Kresbach<sup>7</sup> in 1975 described recurrent, sudden and spontaneous appearance of asymptomatic bullae specially on the lower thighs,

feet and toes which were frequently associated with pretibial pigmented patches. Histopathology in these cases revealed subepidermal bullae without or with minimal inflammatory infiltrate in the corium.

### Material and Method

200 established diabetic patients attending the diabetic clinic of Maulana Azad Medical College and Associated Irwin and G. B. Pant Hospitals, New Delhi, constituted the material for this study. Cases were picked up at random.

The control group was formed by 200 nondiabetic patients, who attended the out patient wing of the department of Medicine of Maulana Azad Medical College and Associated Irwin and G.B. Pant Hospitals. The socio-economic status, age, sex, season of the year and other parameters in both the control and the study groups were same.

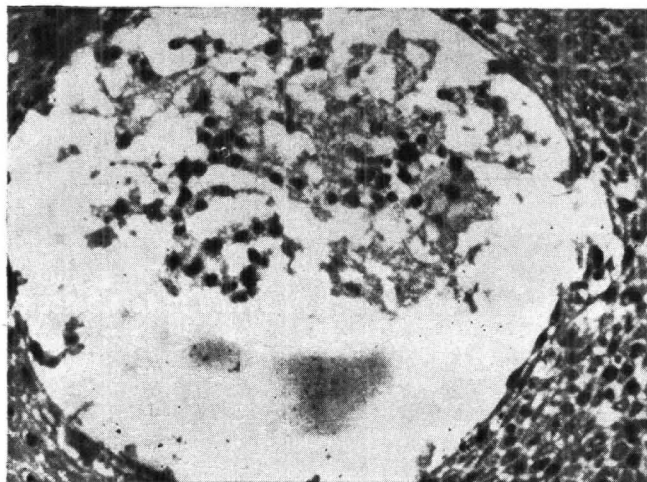
All the patients were thoroughly examined for presence of any skin disease and details of any detected lesion were carefully recorded. During the study, 2 patients were found to have bullous lesions. The bulla from each patient

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**Fig. 1** Intra epidermal bulla containing exudate. (H & E  $\times$  400)

was examined histopathologically. Specimens were stained with Harris' Haemotoxylin and Eosin, with periodic Acid Schiff (PAS) stain and Weigart's staining method for elastic fibres (VGE).

#### Case - I

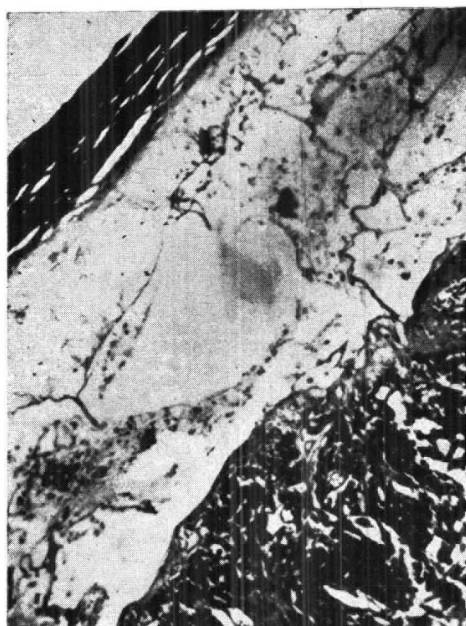
A male, 50 years of age, presented with complaint of bullous lesions on both feet for 2 days. The patient was a known diabetic for 12 years. On examination, there were multiple, asymptomatic tense bullae present on the medial side of both feet. They had regular and well defined borders of size  $\frac{1}{2}$  to 2 c.m. clear contents and non-erythematous base. Bulla spread sign and Nikolsky's sign were negative. On staining the bulla fluid with giemsa stain, few polymorphs were seen. No eosinophils and no tzanck cells were present. Histopathology (Fig. 1) showed intraepidermal bulla and the dermis showed edema, dilatation of blood vessels and perivascular infiltrations. On VGE both collagen and elastic fibres in corium were normal and on PAS staining PAS +ve material was seen around the blood vessels.

#### Case - II

A female, 67 years of age, presented with complaint of bullous lesions in the

webs between thumbs and index fingers of both hands for 3-4 days. The patient was a known diabetic for 9 years. On examination, there were multiple bullae similar to those of case 1 clinically. On staining the bulla fluid with giemsa stain, few polymorphs were seen. No eosinophils and no tzanck cells were seen. Histopathology (Fig. 2) revealed normal epidermis with sub-epidermal

bullae containing polymorphs and eosinophilic material inside it. There was vascular proliferation with thickening of vessel wall in the dermis. On VGE staining, features of senile elastosis were present as the collagen bundles had fused with increased elastic fibres.



**Fig. 2** Sub-epidermal bulla with senile elastosis (H & E  $\times$  100)

TABLE 1  
Showing details of two cases of bullosis diabeticorum

Case No.	Age	Sex	Duration of diabetes	Duration of bullous lesions	Site of bulla (histopathological.)	VEG Staining	PAS Staining
1	50	M	12 yrs.	2 days	Intra epidermal	Normal	PAS +ve material deposition around blood vessels.
2	67	F	9 yrs.	3-4 days	Subepidermal	Senile elastosis	PAS +ve material deposition around blood vessels.

On PAS staining, PAS positive material was seen deposited around the blood vessels.

### Discussion

In this study of 200 diabetics, 2 patients (1.0%) were found to suffer from "bullosis diabeticorum". One patient had asymptomatic, multiple, intraepidermal bullae which had appeared without trauma. This finding corroborates to the previous reports<sup>1,3</sup>.

Recently Kerl and Kresbach<sup>7</sup> reported recurrent, asymptomatic, multiple subepidermal bullae, frequently on toes, feet and lower thighs of diabetics. In the present study one patient (Case II) was found to have multiple, asymptomatic, subepidermal bullae on both hands. Thus histopathologically both intraepidermal and subepidermal bullae were found in this study. It can be concluded that bullosis diabeticorum in diabetes shows the picture of both intraepidermal as well as subepidermal bullae.

The aetiopathogenesis of bullosis diabeticorum is not clearly understood. Some authors<sup>6</sup> were unable to find any explanation for it; whereas others<sup>6</sup> attributed it to biochemical disturbances in carbohydrate and fat metabolism. But Kerl and Kresbach<sup>7</sup> suggested that necrolytic phenomenon observed in chronic diabetes could be responsible

for it. In the present state of our knowledge it is felt that bullosis diabeticorum can be better correlated with the derangement of carbohydrate metabolism.

Case II which had subepidermal bulla also showed features of senile elastosis on weigert's staining method for elastic fibres; the collagen bundles were broken down and fused with increase in the elastic fibres. Considering the age of the patient, it is difficult to comment on the relationship of this change with diabetes.

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