Bullosis diabeticorum: case report and review

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Abstract

Assessment of the foot is an essential component of clinical examination of the patient with diabetes. As the prevalence of diabetes in New Zealand is increasing rapidly, a growing number of clinical encounters will involve individuals with diabetes. We present a case of bullosis diabeticorum, review the important clinical features and propose a management strategy for this rare dermatological complication of longstanding diabetes.

Case report

A 56-year-old male presented with painless blistering of the plantar aspect of his left foot which had appeared rapidly the previous day. There were no systemic symptoms, nor new medications. He had longstanding type 2 diabetes (T2DM) (HbA1c 56 mmol/mol), diabetic retinopathy, peripheral neuropathy and nephropathy. He was treated for right Charcot neuroarthropathy managed by prefabricated walker (Moon Boot), and wore orthotic insoles and shoe on the left.

Examination revealed tense blisters over the plantar aspect of all toes on the left containing haemoserous fluid (Figure 1). There was no surrounding erythema nor signs of inflammation. The remaining skin and mucous membranes were intact.

The blisters were aspirated and washed daily with antiseptic (Betadine) washes to prevent secondary infection. Over 3 weeks there was spontaneous de-roofing and drainage followed by uneventful healing.

Figure 1
Four weeks later he re-presented with identical blistering on the right foot. Again the blisters developed rapidly (on this occasion overnight) with no clear precipitant. Examination findings were identical to the previous episode (Figures 2A and 2B). Investigations revealed normal inflammatory markers, normal white cell count and negative autoantibody screen.

The diagnosis of bullosis diabeticorum (BD) was made. The blister on dorsum of the hallux was left intact and spontaneously resolved. The blister on the 2nd toe de-roofed spontaneously. The remainder were drained then dressed to prevent secondary infection.

A Darco post-op open toe shoe was used to relieve pressure and accommodate dressings. Antibiotics were not given at any stage and (on both occasions) the blisters healed without scarring over a 6-week period, after which he resumed wearing the Moon Boot and othoses.

**Review**

BD was first used in 1967 to describe a rare dermatological complication of diabetes mellitus, but similar lesions had been reported previously. Blisters or bullae arise acutely (less than an hour to overnight) on the acral regions unprovoked by trauma. There is no established association with glycaemic control, other diabetes complication, drugs, infection or inflammatory conditions. Although feet are most often affected, blisters can occur on the trunk, arms or hands.
Lesions are mostly unilateral, but bilateral blistering can occur. Mechanical causes and other blistering dermatoses should be excluded before the diagnosis of BD can be made. Although usually confined to longstanding type 1 diabetes, BD can occur in T2DM and has been reported in prediabetes. The lesions vary in size (0.5 cm$^2$ to 10 cm$^2$), are usually filled with sterile serosanguinous fluid and resemble burn-blisters without surrounding erythema. They have no pathognomonic histological features.

The clinical course is mostly benign with complete healing within 5–10 weeks unless secondary infection occurs. Infection can lead to chronic ulceration. Lesions can become recurrent. Affected individuals are usually male (2:1 or 3:1), median age 65 years, with prevalent complications as expected with observed long diabetes duration (median 14 years).

BD is rare, with estimated annual incidence of 0.16% in a tertiary diabetes care facility.

There is no consensus on treatment, and no randomised trial evidence exists to guide practice. In most cases debridement when required, exudate management and appropriate pressure-relieving footwear allows spontaneous healing.

We advocate aspiration of tense blisters that continue to increase in size, and use of non adherent absorbent dressings with regular (1–5 days) inspection and dressing changes. Use of adhesive dressings risks unplanned de-roofing of blisters.

Due to significant risk of harm we advise against performing skin biopsy (in the absence of clear evidence to the contrary) in the setting of spontaneous blistering typical for BD.

**Conclusion**

BD is a rare complication of diabetes that should be recognised and managed appropriately by health professionals who care for individuals with diabetes. The precise aetiopathological mechanisms remain obscure. We have described a case of recurrent BD with successful outcome following conservative management.

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**References:**


