Diabetes and the skin

Part 2 – leg ulcer

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Case history – Susan

Susan aged 22 years, has had type 1 diabetes since the age of 9. She and her parents had some difficult times during Susan's adolescence with multiple hospital admissions for diabetic ketoacidosis and hypoglycaemia. Since Susan began employment in her current job as a receptionist and has her own apartment, she has been managing her diabetes much better and has not had a hospital admission for the past 2 years. However, her control is still not optimal (A1c 9–11%, target <7) and you have been trying to convince her to change from her twice daily pre-mixed insulin to a basal bolus schedule which would improve her glycaemic control and give her more flexibility in her lifestyle.

When you raised this issue Susan asks if improving her blood glucose control would improve the 'sore' she has on her leg. The lesion has a distinct edge, is not tender and there is no lymphadenopathy.

Question 1
What is the 'sore'?

Question 2
Would improved blood glucose control help?

Question 3
What else can be done?

Question 4
What is the prognosis?

Answer 1
The lesion is necrobiosis lipoidica diabeticorum (NLD). The name derives from necrosis of collagen in the lower dermis (hence necrobiosis) with inflammatory changes involving foam cells (hence lipoidica). This is largely a cosmetic problem that mostly affects young women with type 1 diabetes. The lesions are usually on the anterior aspect of the leg. (Lesions can occur in most areas of the body but usually appear on the pre-tibial area and dorsum of the ankles). Early in their development they are dusky-red with a yellow tint, tend to expand, and can become quite large, flat, yellow-brown with sharp, irregular borders. The epidermis is smooth or slightly scaly and atrophic and there may be telangiectasia. Sometimes the skin ulcerates and secondary infection may develop.

It may be difficult to be confident about the diagnosis in the early stages when lesions are small (eg. diameter <3mm). A dermatologist may make a positive diagnosis on clinical grounds or by skin biopsy. It is important to make a positive diagnosis as other skin lesions such as granuloma annulare or cutaneous sarcoidosis may look similar. Lesions may remain stable for many years or gradually progress.

Answer 2
Necrobiosis lipoidica diabeticorum is clearly associated with type 1 diabetes, but its relationship to glycaemic control is uncertain. Susan may not notice any difference in the lesions even if she does improve her blood glucose control, however she would reduce the risk and severity of secondary infection if the lesions ulcerate.

Answer 3
Topical and intralesional glucocorticoids have been reported to improve NLD, particularly when used in early lesions. Moisturisers can maintain skin integrity, and protection from trauma reduces the risk of ulceration and infection. Surgical removal and skin grafting may be successful, but NLD may recur in the graft or elsewhere.

Answer 4
Necrobiosis lipoidica diabeticorum is generally chronic with gradual progression. Rarely there may be spontaneous remissions. As noted, the major problem is mainly cosmetic, but sometimes lesions repeatedly ulcerate and become infected.

Conflict of interest: none declared. AFP

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