



Medicine for Managers

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The Diabetic Foot

Diabetes sufferers, particularly those with resistant disease or in whom control is poor, may suffer a range of complications including heart disease, kidney disease, bowel disorders, visual deterioration and stroke. They also often suffer foot problems as a result of the disease induced progressive peripheral blood vessel disease and neuropathy, resulting in infection, ulceration, gangrene and in some cases amputation.

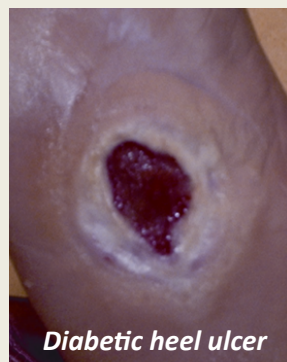
Complications of diabetes affecting the feet can often be avoided by careful foot care, although even with exemplary care, avoidance of disease cannot be guaranteed.

The problem of neuropathy (nerve damage), which results in loss of sensation to the feet, and peripheral vascular disease, which impairs the normal nutritional and healing functions of the feet, means that they are exposed to damage which cannot be effectively repaired.

In consequence any damage to the foot may be perpetuated and can result in the development of ulceration and infection.

Somewhere between one in fifteen and one in twenty of diabetic patients have an active foot ulcer. In areas poorly supplied with blood the breakdown of the skin allows the entry of

infection which may be progressive and which may not respond so well to antibiotic therapy. A diabetic ulcer is often painless, is surrounded by a thick area of keratinised callus, and is commonly infected. It is smelly and may have a purplish coloration.



The ulcer may become very large and deep with infection spreading to bone and joints. The consequences may be osteomyelitis and spreading infection as a result of impaired defence systems.

Ultimately such infections may become life threatening with the development of septicaemia unless effectively controlled, often by amputation. In the United Kingdom about 2-3 diabetics per 1,000 have had an amputation of part or all of a foot.

To avoid foot problems a good general approach is mandatory with attention to good control of

blood sugar, control of blood pressure and cholesterol, smoking cessation and weight management to achieve a satisfactory BMI.

Foot care is essential for every diabetic patient. A comprehensive approach involving patient education to maintain foot health and to identify any early changes which might lead to more complex problems is very important.

The education should include routine foot care, hygiene, nail care, inappropriate practices such as trimming calluses or applying proprietary treatments and the potential consequences of neglecting the feet.

Any inflammatory, infective or ulcerative change should be reported immediately so that appropriate care can be provided.

Good quality footwear which does not lead to calluses or ulceration is necessary. If any infection or ulceration occurs urgent medical care is required to provide the necessary treatment.

Regular routine foot checks will also identify any sensory loss or arterial disease; foot pulses and the use of Doppler ultrasound to assess vessel patency and flow acts as an early warning of impending complications.



All diabetic patients will be recalled for regular routine foot inspections. Good practice requires annual inspection. During such examinations the patients' feet will be inspected for deformity or signs of ulceration and infection. Sensation and pulses will be checked. They will be exhorted to contact their GP or podiatrist if they notice any foot changes such as pain, discolouration or signs of infection. Higher risk patients will be seen more frequently, usually by the local podiatry service and many services have open access facilities for patients who notice any deterioration in their feet.

Good diabetic control, requires careful attention to preventive measures including:

- Regular foot checks
- A ban on smoking
- Control of blood sugar, cholesterol and blood pressure
- Good, well-fitting footwear
- Using moisturising cream on the feet
- Being extremely careful if cutting nails

If patients develop foot ulcers their risk of an amputation is increased but with appropriate surveillance and treatment and good monitoring, re-ulceration can be minimised. However, in patients who do not comply with the foot care programmes and in whom ulceration develops and progresses, amputation becomes more likely and post-amputation survival is poor with an estimated one in twelve patients dying in the peri-operative period following such surgery.

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