

Simple, inexpensive surgical procedure for diabetic foot ulcers greatly reduces healing time, amputation rates

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DIABETES



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Performing proactive surgery to adjust the mechanics of the foot, appears to be effective to treat diabetic foot ulcers, a common and debilitating complication of diabetes, without the potential complications and at significantly lower cost compared to conservative management.

The preliminary study, being presented at the annual meeting of the European Association for the Study of Diabetes (EASD), held this year (19 Sept- 24 Sept), describes how these day-case procedures in 19 [patients](#) successfully resolved all [foot ulcers](#), prevented diabetic foot sepsis, and reduced recurrence and amputation rates compared to 15 patients treated conservatively.

"Although the procedure is relatively simple, its potential is revolutionary", says lead author Dr. Adrian Heald from the Salford Royal NHS Foundation Trust, Salford, UK.

Diabetic foot ulcers are open sores or wounds that occur in around 15% of people with diabetes at some point in their lives, at an [estimated cost](#) of £935 million to the NHS. Ulcers are commonly located in the areas subject to the most weight-bearing like the bottom of the foot, and are responsible for around 80% of lower extremity amputations in people with diabetes.

In the UK, death rates after diabetic foot ulceration are high, with up to half of patients dying within 5 years of developing an [ulcer](#), rising to 70% within 5 years following an amputation.

Early intervention is important in the management of diabetic foot ulcers, with people who receive expert care most quickly having the best outcomes. Orthopedic and vascular surgeons have become embedded within most UK specialist diabetes foot multidisciplinary teams to offer reactive interventions to the common complication of diabetic foot sepsis, such as drainage of abscess or amputation.

In this study, researchers describe how a day-case procedure list within specialist diabetes foot multidisciplinary teams has affected outcomes by performing proactive simple surgical procedures.

Between April 2019 and April 2021, 19 patients with [diabetic foot ulcers](#) (without associated abscesses) were offered a percutaneous procedure performed under local anaesthetic by an [orthopedic surgeon](#), while 14 patients were treated conservatively, with best medical and podiatric management.

The aim of the [surgery](#) was to adjust the mechanics of the foot to remove the pressure on the ulcerated region to accelerate healing.

All 19 patients undergoing surgery had evidence of [diabetes](#) and/or neuropathy (nerve damage). Of these, 10 patients (average age 71 years, 8 male, 2 female) with toe apex ulcers and damaged flexor tendons underwent toe tendon releases in which the tendon is cut to relax the toe into a straight position.

A further 9 patients (average age 49 years, all male) with ulcers on the sole of the foot behind the toes and tightness in the Achilles tendon underwent Tendo-Achilles lengthening to stretch the tendon to allow the patient to walk flat-footed.

After one year of follow-up, all patients in the surgery group achieved successful ulcer resolution (average time 3.3-4.5 weeks) compared to three patients (36%) in the usual care group (average time 20 weeks).

During follow-up, no patients in the surgery group were admitted for diabetic foot sepsis compared to seven (46%) in the usual care group. And ulcer recurrence occurred in only two patients (10%) in the surgery group compared to 10 (66%) in the conservative treatment cohort.

Similarly, amputation was more common in the usual care group (7 patients, 66%) than the surgery group (2 patients, 10%). No patients in the surgery cohort died, whereas six in the conservative care group died.

The researchers estimate that compared with the average usual care cost of £9,902, the average new procedure cost was £1,211, giving average savings of £8,691 per patient—an 88% reduction in healthcare costs following the procedure.

"Our study is the first in the UK to demonstrate practical and financial feasibility of simple orthopedic interventions to accelerate healing of mechanical forefoot ulcers for patients with diabetic neuropathy", says Dr. Heald. "We urge other diabetic multidisciplinary foot teams to explore this treatment option."

Provided by Diabetologia

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