

Lower limb complications

Larval therapy – better than Robbie Williams?



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Mr William's recent comments that he would like Britain to get behind him in his bid to 'break' the American market have been widely reported. Rather like Robbie, maggots have long been hailed as excellent in the UK and often

derided in America. Perhaps no longer. The two articles that lead this quarter's lower limb complications section are not exactly rocket science, although recent shuttle disasters make you wonder how good that is anyway, but do provide something above anecdotal evidence for the effectiveness of larval therapy.

Wolff and Hanson (2003) describe an open-labelled study of larval therapy in 74 patients with necrotic or sloughy ulcers. Larvae were effective in completely debriding the ulcers of all of the 29 patients with diabetes compared with 86% of the necrotic ulcers. Two-thirds of patients were cleared with a single application; in my experience a second application is often required in the majority of patients.

The effect of larvae on pain is hard to

differentiate as separate results were not available for the group with diabetes. Again, in the experience of our clinic, any pain associated with infection often improves in patients after larval therapy.

More exciting is a nearly randomised and controlled study of larval therapy versus standard therapy from an American veteran's centre. This study, by Sherman (2003), compares wounds treated with maggots, conventional therapy, or maggots after failing conventional debridement. In a small sample, (only 20 ulcers in 18 patients), the study provides evidence for the superior efficacy of larval debridement over other means, with improved granulation and healing rates.

The ready availability of podiatric surgery in the US, and perhaps a fee per item of service reimbursement system, has long worked against the humble maggot in its quest to become as popular in the US as it is rapidly becoming in most centres in the UK and Europe. Perhaps, like Robbie Williams, if we get behind them enough they too will succeed in the US. I wonder who will have the first number one?

CLINICAL AND EXPERIMENTAL DERMATOLOGY



Larval therapy proves effective for debriding ulcers

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓✓

- 1 Larval therapy has been used for many years to help wound healing.
- 2 The aim of this study was to investigate whether the larvae of the blowfly, *Lucilia sericata*, can effectively debride chronic ulcers.
- 3 The effects of larval therapy on the wounds of 74 patients with necrotic or sloughy chronic ulcers of different aetiologies was investigated.

4 Larval therapy was effective in ulcer debridement in 86% of the necrotic ulcers. A single application was clinically beneficial in two-thirds of patients.

5 No ulcer type was more suited to larval therapy than another, but there was an excellent response in all 29 patients with diabetes.

6 Larval therapy also reduced odour in 58% of the 31 foul-smelling ulcers of mixed aetiology.

7 No serious side-effects were observed. A quarter of the patients experienced less pain during treatment.

8 Larval therapy was effective for debriding ulcers, easy to use, and well accepted by patients.

Wolff H and Hansson C (2003) Larval therapy – an effective method of ulcer debridement. *Clinical and Experimental Dermatology* **28**: 134–37

DIABETES CARE



Maggot therapy is more effective than conventional care

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓✓

1 There has been an increase in the use of maggot therapy in the last few years, but its optimal role has not been clearly defined.

2 This study aimed to assess the efficacy of maggot therapy for treating foot and leg ulcers in patients with diabetes in whom conventional treatment has been unsuccessful.

3 Ulcer length, width, circumference, and surface area were calculated from digitised photographic images in 18 patients with 20 non-healing foot and leg wounds for at least 8 weeks, or until hospital discharge.

4 The changes in necrotic and total surface area of chronic wounds treated with maggot therapy, standard surgical or non-surgical treatment were compared.

5 Maggot therapy was associated with faster debridement and wound healing than conventional therapy.

6 Within 4 weeks, maggot-treated wounds were not only debrided but were covered with healthy granulation tissue over about 56% of their wound base. By contrast, granulation tissue covered only 15% of the base of the wounds treated conventionally.

7 Maggot therapy should not be considered as a last resort (i.e. as an alternative to amputation), but as a second or third-line option earlier during the course of therapy.

Sherman RA (2003) Maggot therapy for treating diabetic foot ulcers unresponsive to conventional therapy. *Diabetes Care* **26**: 446–51

‘Elevated foot pressure is an important risk factor for foot complications. However, foot pressure alone is a poor tool by which to predict foot ulcers.’

DIABETES CARE

Foot pressure is an important risk factor for ulcers

Readability	✓✓✓✓
Applicability to practice	✓✓✓
WOW! factor	✓✓✓✓

- 1 Identification, quantification, and mitigation of pressure and cycles of stress could be important factors in risk assessment and management of patients before and after ulceration.
- 2 This study aimed to evaluate the effectiveness of dynamic plantar pressure assessment in 1666 patients with diabetes to determine patients at high risk for neuropathic ulceration.
- 3 In total, 263 patients presented with or developed an ulcer during the 24-month follow-up period. Baseline peak plantar pressure was significantly higher in the ulcerated group than in the group who did not ulcerate.
- 4 Elevated foot pressure is an important risk factor for foot complications. However, foot pressure alone is a poor tool by which to predict foot ulcers.

Lavery LA, Armstrong DG, Wunderlich RP, Tredwell J, Boulton AJM (2003) Predictive value of foot pressure assessment as part of a population-based diabetes disease management program. *Diabetes Care* **26**: 1069–73

EUROPEAN JOURNAL OF VASCULAR & ENDOVASCULAR SURGERY

Infrainguinal grafts safe for people with diabetes

Readability	✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓

- 1 The frequency of femorodistal reconstructions in patients with diabetes presenting with critical limb ischaemia (CLI) is increasing. However, it is unclear whether infrainguinal reconstructions should be recommended to patients with diabetes.

JOURNAL OF GENERAL INTERNAL MEDICINE

Education improves likelihood of proper foot examination

Readability	✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓

- 1 Physician adherence to guidelines for the proper examination of diabetic feet is less than optimal.
- 2 The aim of this study was to determine the effect of a physician-directed intervention on the documentation of proper diabetic foot examinations.
- 3 Two short presentations on the importance of foot examination as part of routine diabetes care were given to resident physicians.
- 4 There was a significant increase in the performance of proper foot examinations over the course of the study.
- 5 A simple low-cost educational intervention significantly improved adherence to diabetic foot examination guidelines.

O'Brien KE, Chandramohan MD, Nelson DA (2003) Effect of a physician-directed educational campaign on performance of proper diabetic foot exams in an outpatient setting. *Journal of General Internal Medicine* **18**: 258–65

- 2 Graft patency and clinical outcome were determined in 211 patients (94 with diabetes) and CLI who have had infrainguinal bypass surgery.
- 3 The primary cumulative patency rate at 1 year in patients with and without diabetes was 66% and 56%, respectively.
- 4 The healing rate of ischaemic foot ulcers and survival rate were lower in patients with diabetes than in those without diabetes.
- 5 Diabetes did not adversely affect graft function. Infrainguinal bypass grafting can be safely done in patients with diabetes.

Wölfle KD, Bruijnen H, Loeprich H et al (2003) Graft patency and clinical outcome of femorodistal arterial reconstruction in diabetic and non-diabetic patients: results of a multicentre comparative analysis. *European Journal of Vascular & Endovascular Surgery* **25**: 229–34

JOURNAL OF VASCULAR SURGERY

Pedal arterial reconstruction is effective

Readability	✓✓
Applicability to practice	✓✓✓
WOW! factor	✓✓✓

- 1 Dorsalis pedis (DP) artery bypass can be used successfully for the treatment of ischaemic foot complications in patients with diabetes. However, some surgeons prefer to use more traditional popliteal and tibial arterial reconstructions.
- 2 This study is a review of the last 10 years of using DP bypass for ischaemic limb salvage in patients with diabetes.
- 3 A total of 1032 bypasses to the DP artery were performed in 865 patients between 1990 and 2000 at this centre. Retrospective analysis of the computerised vascular registry was carried out.
- 4 There was a mortality rate of 0.9% within 1 month of surgery, and 42 grafts failed in a month.
- 5 Primary patency, secondary patency, limb salvage, and patient survival rates were 37.7%, 41.7%, 57.7%, and 23.8%, respectively, at 10 years. Primary graft patency was better in patients with diabetes than in those without diabetes.
- 6 Length of stay >10 days and DP bypass for the surgical indication of previous graft occlusion were independently predictive of worse graft patency at 1 year.
- 7 Pedal arterial reconstruction is safe, simple, durable, and highly effective. It is particularly well suited for ischaemic foot salvage in patients with diabetes.
- 8 DP bypass should be in the armamentarium of all vascular surgeons treating limb ischaemia in patients with diabetes.

Pomposelli FB, Kansal N, Hamdan AD et al (2003) A decade of experience with dorsalis pedis artery bypass: analysis of outcome in more than 1000 cases. *Journal of Vascular Surgery* **37**: 307–15

‘Diabetes did not adversely affect graft function. Infrainguinal bypass grafting can be safely done in patients with diabetes.’