

# Pinch grafting for chronic venous leg ulcers in general practice

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**SUMMARY.** *Twenty-five patients with chronic venous leg ulcers were treated in general practice by pinch grafting. Fifteen of the ulcers (60%) were completely healed one year after grafting. Prior to grafting 19 patients (76%) complained of daily pain in the ulcer. These patients experienced complete relief from pain after grafting. Pinch grafting is a simple, safe and effective therapy when applied in a domiciliary environment.*

## Introduction

LEG ulcers are prevalent in general practice and tend to heal slowly. In a recent survey of an Edinburgh group practice the prevalence of leg ulceration was 10 per 1000 of the adult population. In the same paper the author claimed that 55% of ulcers surveyed had been open for more than six months, 40% for more than a year and 10% for more than five years.<sup>1</sup>

Venous leg ulcers, which are secondary to venous insufficiency, have been shown in all studies to be the most common type of leg ulcer and are thought to affect 1–2% of the population.<sup>2</sup> It is generally agreed that venous ulcers heal best if the associated oedema can be removed or prevented by compression bandaging. This compression together with elevation of the limb during rest periods empties varices, forces blood into the calf muscle pump and thus promotes venous return. In their series of chronic ulcers treated by complete bed rest Gupta and Saunders claim that the average duration of treatment was three months.<sup>3</sup> In general medical practice it is difficult to ensure that patients rest, and hospital supervision is not always possible. In another study it has been claimed that patients with leg ulcers occupy 28% of dermatological beds each year.<sup>4</sup> The effectiveness of the many topical treatments which have been claimed to promote ulcer healing is open to debate.<sup>5</sup> Many are expensive and treatment can be time consuming.

Surgical treatment of leg ulceration includes split-skin and pinch grafting. It has been claimed that the former technique promotes healing<sup>6,7</sup> but it normally requires a general anaesthetic and would be technically difficult for the family doctor to perform. Clinical trials of pinch grafting suggest that the technique is relatively simple and that the healing time is shortened.<sup>4,8-10</sup> The procedure does not require a general anaesthetic and is a minor surgical procedure. Pinch grafts were originally described by Reverdin who mainly used grafts of epidermis.<sup>11</sup> Ho claimed that, in a hospital setting, 79.5% of venous ulcers healed successfully using this technique when reviewed one year after grafting.<sup>8</sup> Similarly Millard claimed an initial success rate of 75.7%.<sup>4</sup> Other trials claim that no patient suffered post-graft deterioration and that after acceptance the grafts form a uniform sheet of resilient skin taking its blood supply from the surrounding tissues.<sup>9,10</sup> Millard has shown that the post-grafting success rate for atherosclerotic and vasculitic ulcers is poor.<sup>4</sup>

The aim of this work was to study pinch grafting as a viable and reliable technique for general practice and to assess the state of healing 12 months after operating. All the patients had leg ulcers which were more than six months in duration and had failed to respond to compression bandaging and/or topical treatments.

## Method

Patients were referred by 12 part-time lecturers of the Queen's University of Belfast whose practices served a population of approximately 80 000 patients. At a preliminary clinical examination all the patients had their lower limbs examined from a vascular and neurological viewpoint. Blood samples were taken for rheumatoid arthritis latex, lupus erythematosus cells and blood sugar analysis. Ulcers which were found to be other than purely venous were excluded from the treatment. Patients were required to rest at home for one week after grafting and where this was not possible they were returned untreated to the care of their practitioner. Isolation of  $\beta$ -haemolytic streptococcus from the ulcer was also a contraindication as this organism has been shown to be responsible for graft rejection. Prior to treatment the patient's district nurse was informed of the procedure and asked to ensure that a bed cradle and commode were supplied to the patient's home. Arrangements were made for a joint domiciliary visit by the patients' district nurse and the author one week after grafting to dress the donor and graft sites.

Twenty-five patients with chronic venous ulcers were treated with pinch grafts. Where an ulcer contained necrotic tissue or pus, saline soaks were used for several days prior to grafting to encourage the surface to granulate. In the majority of ulcers non-pathogenic organisms were isolated prior to grafting. These were not considered to be a contraindication for the procedure. Two patients who had obvious cellulitis around their ulcers were treated with systemic antibiotics prior to grafting.

The anterolateral aspect of the patient's thigh was used as the donor site and using lignocaine (2%), an area of skin slightly larger than the ulcer as determined by planimetry was anaesthetized. Pinch grafts varying in diameter from 0.2 cm to 0.5 cm were taken by raising the skin with a syringe needle and cutting with a scalpel. Up to 50 pinches were taken from the donor site, depending on the size of the ulcer. The grafts were then placed on the surface of the ulcer ensuring complete coverage and care was taken to avoid epithelial overlap. 'Bactigras' (Smith and Nephew), non-adherent dressing and release dressing were then placed on both graft and donor sites in consecutive layers. The dressings were then secured with a compression bandage covered with 'Netelast' (Roussel). Postoperative pain in the donor site was controlled with paracetamol and rest at home for one week was prescribed. For grafts located on the ankle patients were asked to avoid both plantar movement and dorsiflexion to prevent displacement of the grafts. Dressings were replaced at weekly intervals and gradual ambulation was permitted after one week. Donor sites were usually well healed after two weeks. Intergraft epithelization commenced after 14 days and healing was well advanced by 28 days. Patients were subsequently followed up for a period of 12 months, initially at monthly intervals.

**Table 1.** Results of 12-month follow-up of 25 patients with chronic venous ulcers treated by pinch grafting.

	Number of ulcers	Age of patient ± SD (years)	Duration of ulcer prior to grafting ± SD (months)	Size of ulcer prior to grafting ± SD (cm <sup>2</sup> )	Mean survival of graft ± SD (months)
Ulcer healed	15	70.0 ± 11.5	12.9 ± 9.5	20.3 ± 15.7	—
Partial rejection or failure of graft	10	71.0 ± 10.9	22.2 ± 28.9	20.6 ± 16.0	2.9 ± 2.5

SD = standard deviation.

## Results

Twenty-five patients (19 women and six men) had their ulcers treated by pinch grafting. The mean age of the patients was 70 years with a range of 51–88 years. The mean duration of the ulcers which were grafted was 12.7 months with a range of 6–96 months. Twelve months after grafting 15 ulcers (60%) were completely healed (Table 1). Nineteen patients (76%) claimed that they had pain in their ulcer prior to grafting. Grafting relieved the pain immediately for most patients. Mild pain in the donor site was experienced by six of the patients (24%) but this was controlled by paracetamol. All of the patients were pain free on the first postoperative day. In 10 patients (40%) there was partial rejection or failure of the graft. The mean survival of these grafts was 2.9 months. The duration of ulceration prior to grafting was longer in patients who rejected their grafts but this difference was not statistically significant (Table 1). Fourteen of the patients (56%) claimed that their ulcers were initiated by scratching or trauma. All of the patients were advised to wear an elasticated stocking in the long term as a preventive measure.

## Discussion

Millard's hypothesis<sup>4</sup> that pinch grafting can be carried out without hospitalization has been confirmed. Grafting can be carried out successfully in the primary care setting providing patients have family support to enable them to rest post-operatively. It has been confirmed that pinch grafts form a soft, pliable and resistant skin cover which can withstand the stresses of everyday life.

The claim of Vesterager that split-skin grafting relieved the pain of the ulcer has been confirmed.<sup>12</sup> The pain did return if there was partial breakdown of the graft but was often less severe. In this series no ulcers were seen to deteriorate as a result of graft failure. It has been shown that pinch grafting may accelerate the healing process in 60% of stasis ulcers which are resistant to conventional therapy. Prior to grafting 70% of the patients were receiving dressings from a nurse at least three times per week. As a result of this treatment there has been a considerable reduction in the nursing time required by these patients. The cost of topical applications has also been substantially reduced. In a recent survey carried out in the Lothian Health Board, district nurses claimed that they were treating 499 patients with leg ulcers and that 55% of these ulcers were present for more than six months. These figures would suggest that conservative therapy is not the definitive solution. The scope for pinch grafting in primary care would appear to be considerable.

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## Amateur psychologists

Data from the National Ambulatory Medical Care Survey in the USA show that the majority of psychotropic drugs and 'psychotherapy/therapeutic listening' provided to adults in office-based primary care are given in visits during which no diagnosis of mental disorder is recorded. This finding was not explained by the tendency of physicians to record drug treatment without an appropriate diagnosis or by management of specific nonmental disorders with mental treatments. Patients who receive treatment without diagnosis tend to be older, established patients with established diagnoses who see the physician for a shorter visit and are more likely to have a follow-up appointment. The data do not provide evidence as to whether mental treatment without mental diagnosis results from inadequacies in the current diagnostic system, inadequacies of physician knowledge and skills, or other factors. Further clarification of this issue will require new research models.

Source: Jencks S. Recognition of mental distress and diagnosis of mental disorder in primary care. *JAMA* 1985; **253**: 1903-1907.