

SKIN GRAFT SURVIVAL ON A FASCIA LATA GRAFT

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Skin grafts may be used with advantage as a "physiological dressing" to improve poor recipient sites prior to definitive grafting. In the case presented here, the repeated application of stored autograft skin to an underlying fascia lata graft eventually produced sufficient revascularisation to allow complete take of a split skin graft.

CASE REPORT

A 65-year-old man presented in 1973, 15 years after previous excision of a basal cell carcinoma, with a recurrent ulcer occupying a large part of the vault of the skull. Both tables of the skull had been destroyed and a sheet of pulsating infected dura mater was exposed in the base of the lesion (Fig. 1). The patient himself complained only of headache, whilst his wife objected mainly to the foul smell emanating from the wound.

Complete excision of the lesion was not thought possible and, after full investigation, including angiography, it was decided to perform a palliative resection and cover the defect with local flaps, through which the residual tumour could be irradiated.

The affected area was excised with a 3 cm margin. The specimen included the full thickness of the skull from the margin of the ulcer and the underlying dura. An area of obvious infiltration by tumour in the region of the sagittal sinus was left in order to avoid serious neurological complications. The exposed brain was covered with a fascia lata graft, and the margins of the defect were covered with four transposition flaps from the forehead and adjacent



FIG. 1. Recurrent basal cell carcinoma of the vault of the skull with destruction of both tables of the cranium revealing a sheet of pulsating dura mater in the centre of the wound.

FIG. 2. Successful take of a split skin graft over the fascia lata graft which had been previously revascularised by repeated application of autograft skin used as a physiological "dressing".

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unaffected areas of scalp. An area of fascia lata graft measuring 7 cm × 5 cm remained uncovered in the left parieto-occipital region and on to this surface a piece of autograft skin was placed to act as a physiological dressing. This was reviewed at 48 hour intervals and renewed when necessary. Three weeks later an attempt was made to cover the defect using one of the transposed flaps as a "crane" flap. This was unsuccessful and resulted in necrosis of the flap. All the non-viable tissue was then excised and further dressings with autograft skin continued for another three weeks. At the end of this period it was noted that capillaries had grown into the fascia lata graft from the periphery of the defect in a centripetal fashion and a split skin graft applied at this time took successfully (Fig. 2). Six years after surgery, the patient is alive and the skin graft remains healthy. Unfortunately despite a full course of postoperative radiotherapy there is now an extensive recurrence of the tumour.

DISCUSSION

The use of fascia lata in cranial defects has a long history (Hische, 1916) and its specific use to cover exposed brain tissue was described in 1920 (Grey Turner, 1920). In that case, the fascial graft was covered with a skin flap. Fascia lata remains the most popular material in common use for the cover of denuded brain, although freeze preserved human dura mater has also been advocated (Meshkia *et al.*, 1973). We have been unable to find any other reports of successful skin grafting upon a bed of fascia lata in a situation where local tissue is not available for the fashioning of flap cover. Biological dressings have been found to be of value in the management of healing burns. Homograft and heterograft skin have both been used to dress other healing wounds, but have disadvantages when applied to regenerating epithelium. The collagen from commercial porcine skin becomes incorporated under regenerated epithelium causing unacceptable erythema and oedema (Salisbury *et al.*, 1973), whilst the rejection of homograft skin has a deleterious effect on the underlying recipient dermis (Miller, 1973). In a quantitative comparison of biological dressings (Robson *et al.*, 1973), autografts, homografts, heterografts and amniotic membrane were used as dressings on fresh wounds in rats which had been bacterially contaminated. Amniotic membrane and autograft skin were found to be equally effective in decreasing the bacterial count.

The revascularisation of free skin grafts depends at an early stage upon the qualities of the vessels of the recipient bed (Brozman, 1974). In this case, the regular and repeated application of autograft skin to an underlying fascia lata graft enabled it to develop a robust blood supply. When a definitive skin graft was applied following six weeks of dressings, it took readily and survived subsequently despite intense irradiation.

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