

INTRA-ORAL GRAFT CONTRACTION: A COMPARATIVE STUDY BETWEEN SPLIT-THICKNESS SKIN GRAFTS AND REVERSED DERMAL GRAFTS

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ABSTRACT:

Twelve adult male mongrel dogs were divided into two equal groups to study the effect of thickness on graft contraction, in group I the thickness of each graft (split-thickness skin graft and reversed dermal graft) was 0.3 mm., in group II the thickness of each graft (split-thickness skin graft and reversed dermal graft) was 0.56 mm. The grafts were used to reconstruct bilateral buccal mucosal defects (1 X 2 cm) where split-thickness skin grafts were applied on the right side and reversed dermal grafts were applied on the left side. It was found that after 3 months postoperatively contraction of (0.3 mm) reversed dermal grafts was about 64% while the contraction of (0.3 mm) split-thickness skin grafts was about 64.5%. Graft contraction for (0.56 mm) grafts was only about 40% for the reversed dermal graft and about 45% for the split-thickness skin graft. Histologic examinations showed that the affinity of oral tissues to the dermal graft was more than the split - thickness skin grafts. It is concluded that reversed dermal graft is still gaining more benefits over split-thickness skin grafts and the thicker the reversed dermal graft the lesser the contraction.

INTRODUCTION AND REVIEW OF LITERATURES:

Skin grafts are used to minimize wound contraction. Wound contraction means the diminution in size of an open wound which is the result of the centripetal movement of the whole thickness of the surrounding skin. There are many factors which affect wound contraction such as size and depth of wound, shape of the wound, the presence or absence of dressings and the site of wounding⁽¹⁻⁵⁾.

Wound contraction occurs early within the first 10-15 days after wounding. It is quite independent of epithelialization which can occur simultaneously with contraction. Contraction must be distinguished from contracture, a term which has been used to describe a deformity resulting from contraction in an area where the skin overlies and is attached to the fascia of muscle or to tendon sheaths and the end result of resorption and remodeling of a scar⁽²⁾.

Many theories have been suggested regarding the mechanism of wound contraction. As regards the graft contraction, there is primary contraction when the skin graft is first removed from the donor site, it undergoes an immediate shrinkage. Davis and

Kitlowski⁽⁶⁾, measured the changes in skin graft area and found that full thickness graft shrank 44% while the skin half the thickness of the whole skin contracted 22%. Thinner split-thickness shrank 9% while Olier-Thierch grafts did not undergo primary contraction, primary contraction is passive and is probably due to the elastic recoil of the dermis.

Secondary contraction, is the contraction of the graft as it heals in the recipient site⁽⁷⁾, the amount and rate of this shrinkage are determined in large part by the kind of the graft; full or split - thickness, type of recipient bed whether fixed or rigid underlying structures or not. Thus a contracting graft does so within a contracting wound⁽²⁾.

Thickness of full and split-thickness grafts is relative, since skin thickness varies with location and with sex and age of the patient⁽⁸⁾. Skin is known to be the thickest on the trunk, palm and soles, and thinnest on the eye lids and postauricular area, skin in equivalent areas in males is thicker than in females, the thin skin of childhood gradually thickens until the fourth or fifth decade, after which it progressively thins⁽⁹⁾.

Using a skin graft of 0.56 mm resulted in

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