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Autologus Full Thickness Skin Grafting for Degloving Wound in a Dog

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Abstract

A six months old female dog was brought to Teaching Veterinary Clinical Complex with a history of automobile injury leading to degloving wound in left hind limb below hock region with complete loss of paw. Loss of full depth of skin made routine surgical repair impossible. Wound bed was freshened and excessive granulation was removed surgically. Skin mesh graft was prepared after harvesting skin from left flank region and was sutured to wound bed using non absorbable silk sutures. Non adherent vaseline based chlorhexidine dressing was done. Animal showed uneventful recovery and hair growth

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over the transplanted skin graft was seen 60 days post grafting.

Key Words: Dog, skin mesh grafting, wound.

Materials and Methods
Clinical examination and thoraco-abdominal radiography showed no remarkable changes. Necrotic tissues and excessive granulation were sharply debrided, producing healthy, bleeding wound beds. Surgery was performed 15 days after presentation of the case. Mean while daily antiseptic dressing was done. A butter paper covered around the wound and surface area of wound was calculated as 9cm X 7cm by measuring the wound impression over the paper.

Atropine sulphate @ 0.04-.06 mg/kg i/m, Xylazine hydrochloride @ 1 mg/kg i/m and Ketamine hydrochloride @ 6 mg/kg i/m were used for all operative procedures. Wound was copiously lavaged with sterile 0.9% NaCl. Required area of full thickness skin from left flank region was harvested aseptically and fixed on a wax tray in upside down position with sterile paper pins. All fatty tissue was scrapped out with scalpel blade. A number of vertical slits were made at about one em apart from each other to prepare a mesh graft (Fig 1). The graft was applied over recipient site using simple interrupted sutures of 3-0 monofilament silk (Fig. 2) Wound was covered with a non-adherent petroleum-impregnated gauze contact layer following antiseptic dressing. A course of antibiotic (Amoxicillin + Sulbactum combination @ 10 mg/kg b.wt. I/M b.i.d. for 7 days) and analgesic (Meloxicam @ 0.5 mg/kg b.wt for o.d. for 4 days) was given.

Results and Discussion
The initial bandage was changed 5 days after surgery. The superficial surface of the graft site was slightly yellowish and easily removed with gentle lavage using sterile 0.9% NaCl. This may be attributed to either accumulation of fibrin/serous exudates or slough of the most superficial epithelial layer, or both according to Sean and Sharon (2010). The underlying epithelium appeared healthy and viable. The region was re-bandaged with a non-adherent petroleum-impregnated gauze contact layer. Bandage change on the 10th day after surgery revealed a healthy superficial epithelial graft surface with approximately 80% of the original graft appearing intact and viable. A small area of the distal portion of the wound bed was no longer covered by graft and healthy granulation tissue was filling the defect. Bandage was removed on day 15th after surgery. Physical examination 40 days after surgery revealed the graft site to be healthy and well healed. The graft site was slightly pigmented and the epithelial surface was shiny. Sparse, intermittent hair growth was noted from the periphery of the graft after 60 days post grafting (Fig 3). The owner reported no complications at home.

Successful graft achievement in this case was obtained by obliteration of infection, production of a stout bed of granulation tissue and appropriate immobilization of the graft site. These findings are in accordance with the observations of Swaim (2003). Development of the wound bed required an extended period of 15 days of debridement and bandaging due to gross contamination of the wound. This time
frame is similar to a previous study performed by Harris and Dhupa (2008). Wounds of distal extremity in this case prohibit the use of pedicle flaps, however they are considered more suitable and robust due to their innate blood supply as reported by Pavletic (1999).

**Summary**

Successful repair of degloving injury in a female dog was performed using autologous skin mesh grafting. Thorough debridement of excessive granulation and necrotic tissue were prerequisite for this procedure. A voiding movement of graft over recipient site further proved advantageous for obtaining good results.

**References**


