

STAINLESS STEEL WIRE SUTURING OF ELEPHANT SKIN - A CASE REPORT

Sooryadas S. and Jacob P.K.

Introduction

Both free-ranging and captive elephants have ample opportunity to sustain injuries to the skin (Mikota, 2006). The goal of wound management is to prevent further contamination, remove debris, debride dead tissue, provide drainage, and create an environment conducive to the formation of a healthy vascular bed (Liptak, 1997). Knife-cut injuries of elephant skin and its suturing using stainless-steel-wire are rare in the literatures. A case of knife-cut injury of the elephant (*Elephas maximus indicus*) skin and its successful management by stainless-steel-wire suturing is presented here.

History and findings

This case was referred to the District Veterinary Centre, Kollam. The elephant had a fresh and deep incised wound on the skin of both hind legs. One was on the medial aspect of the left hind leg towards the distal end (Fig. 1), while the other was on the lateral aspect of the right hind leg, just above and through the nail (Fig. 2).

Treatment and Results

The wounds were profusely lavaged and

cleaned with povidone iodine diluted in normal saline. 2% Lignocaine was infiltrated into the wound margins, for effecting local analgesia. The wound edges were then apposed using 22 G stainless-steel-wire in a horizontal mattress pattern. After suturing, 10 ml of tetanus toxoid was given as intramuscular injection. This was followed by parenteral antibiotics, which was continued for five days. The wound surface was dressed with Povidone iodine ointment. The wounds healed uneventfully (Figs. 3 & 4).

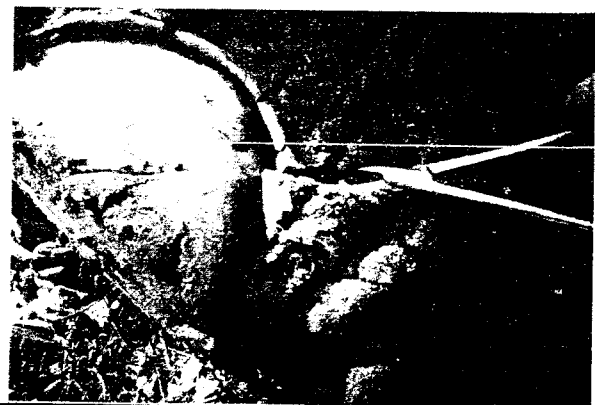
Discussion

The elephant skin is comprised of two layers: the external, nonvascular epidermis and the underlying dermis composed of collagen and containing nerves and blood vessels. Skin thickness varies considerably over the body. The skin on the medial pinnae and at the oral and rectal mucocutaneous junctions is thin. Thicker skin covers the head, legs, dorsum, and trunk. Actual measurements vary from 1.8 mm on the medial surface of the ear to 1.0 cm on the medial side of the leg and 3.2 cm on the dorsum (Shoshani et al., 1982). The skin overlying the lateral thigh muscles of the hind limb and the triceps muscle of the forelimb may be 2.5 cm or

Figure 1: Fresh cut wound on medial aspect of the left hind leg



Figure 2 – Fresh cut wound on the lateral aspect of right hind leg, just above and through the nail

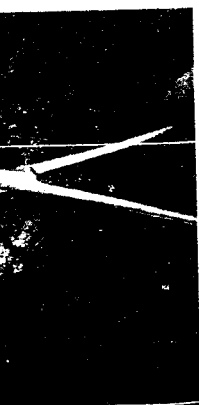


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more. The skin is usually thinner on the forelimb than the rear (Olsen, 1999).

Wounds can be flushed with sterile saline (or boiled-and-cooled water if sterile solutions are not available), dilute povidone iodine or dilute chlorhexidine. The administration of tetanus toxoid should be considered for deeper wounds, although data on dose and effectiveness in elephants is lacking (Mikota, 2006). A variety of topical agents can be applied; however, keeping the wound clean and devoid of necrotic tissue is most important. Skin closure should be with a monofilament fiber which is less likely to wick infection from the skin surface to deeper tissues. Metal staples are reported to be not suitable for elephant skin closure (Fowler, 2006). But, stainless-steel-wire was employed in this case and was found successful. It can thus be concluded that stainless-steel-wire can be used successfully for apposing fresh, incised wound on skin of elephants, especially in areas of less skin tension.

Acknowledgement

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Figure 3: Wound on the left hind leg after healing

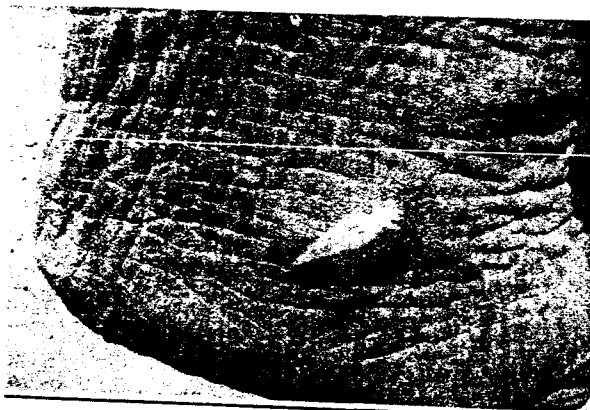
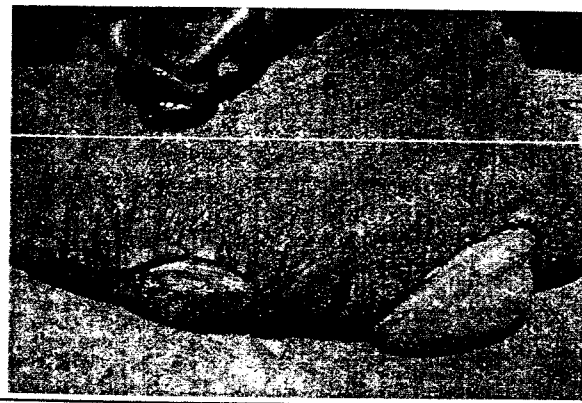


Figure 4: Wound on the right hind leg after healing



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