RECONSTRUCTION OF LACERATED WOUND ON UPPER LIP IN A GRADED MURRAH HEIFER – A CASE REPORT

G. Kamalakar*, R. Mahesh and V. Devi Prasad

ABSTRACT

A 4 year old Graded Murrah Buffalo heifer was presented with extensive lacerated wound on upper lip and nostril on right side that occurred due to an accident. It showed excessive salivation, restlessness, presence of blood clots. The animal was examined thoroughly and prepared for surgery. Reconstructive surgery of upper lip and cheek was carried out under mental nerve block and linear block using Lignocaine hydrochloride. Good surgical technique and effective post operative management made the case successful recovery.

Keywords: graded Murrah buffalo, lacerated wound, lip, cheek, reconstructive surgery

INTRODUCTION

A wound is defined as discontinuity or separation of skin, mucous membrane, or any tissue surface. Lacerated wounds occur in animals more commonly due to accidents, while crossing fencing wire, injuries by sharp objects like glass pieces. A lacerated wound presents torn and irregular edges (Venugopalan, 2009). These wounds may occur at different places of body like face, inguinal region, abdomen, thorax, legs, etc. Because of the nosiposture ruminants are very often subjected to open wounds on near facial region due to automobile accidents, barbed fencing wires, snake bites, etc. Anterior facial region needs special attention in the surgical repair owing to the presence of important structures like buccal nerves, dental pads, incisors, etc.

CASE HISTORY AND CLINICAL OBSERVATIONS

A 4 year old Graded Murrah Buffalo heifer was presented to the clinic with a history of an extensive lacerated wound on face involving right side of upper lip and cheek due to an accident occurred yesterday. The animal showed excessive salivation and was unable to take feed and water properly due to the injury. On thorough examination the lacerated wound involved right side of lip, cheek and commissures tearing buccinator and levator naso labialis muscles. The injury was of full thickness, with serrated margins and measured 14 cm. Clotted blood was observed on wound margins with little contamination (F1).

TREATMENT AND DISCUSSION

The animal was casted in left lateral recumbency and prepared for aseptic surgery. It

Department of Veterinary Surgery and Radiology, College of Veterinary Science, Proddatur, Y.S.R. Kadapa District, Andhra Pradesh, India, *E- mail: drkamal_vet@yahoo.co.in

was given mental nerve block and linear infiltration with 2% Lignocaine hydrochloride along the wound margins on upper and lower sides. The injury was irrigated with 1:1000 Potassium permanganate lotion thoroughly to remove debris and clots. To make suturing perfect the skin and sub cutis was separated by under trimming and controlling the bleeding points. First the muscle layers were apposed using chromic catgut in continuous manner through the centre of the wound. Strepto penicillin powder was sprinkled on entire wound and skin edges were sutured in horizontal mattress pattern using 1/0 braided silk. Paste made of Zinc oxide and tincture benzoin was applied on suture line. Injection Amoxicillin+ Cloxacillin 3 g, injection Ketoprofen 2 mg/kg BW, injection Tribivet was administered intra muscularly. Owner was advised to give more of liquid diet. Wound dressing was done every day with paste of zinc oxide and tincture iodine. Sutures were removed on 10^{th} post operative day (F2).

Lacerated wounds near nostrils are common in working bullocks due to irritation by bull nose rope and frequency of nose piercing injuries was 64% (Alam *et al.*, 2010). Here the injury caused by a wheel adjustment guide pointer of a car. Suturing in these cases was very difficult because, surgical procedure require mouth to be opened till the suturing was complete as the thickness of the wound involved inner surface of the upper lip and commissures.

A series of opposition sutures were placed using chromic catgut no. 0, joining buccinator, levator naso labialis muscles including fascia restoring the normal anatomical configuration of the anterior half of the rostral facial region. Then sub cutaneous sutures were placed using no. 0 chromic catgut. Cutaneous wound was sutured using no. 1 black braided silk in horizontal mattress pattern. The animal was kept on Intravenous alimentation for 3 days in order to restrict the movement of the jaws which otherwise would have impaired wound healing. The wound healing was observed to have been protracted which was thought to be because of the involvement of micro organisms inhabitants of the oral cavity.

Atropine sulphate was given sub cutaneously 0.04 mg/kg BW in order to create dry mouth condition thus augmenting wound healing. The wound was found to heal by cicatrisation and the wound contraction was minimal. The animal was said to have normal prehension and masticatory habits indicating a complete and uneventful recovery.

The horizontal movement of jaws during mastication and rumination together with the presence of normal ruminal fauna and flora interfere with normal wound healing. The ruminant saliva is rich in bicarbonate content thereby further delaying wound healing. Normally ruminants sink their rostral part of the face into the gutters for drinking soiling the sutured part. Further if the animals were let outside they find their way into the pond for wallowing. These factors further pose a challenge before a surgeon for wound healing. Hence, the intravenous alimentation used in this case may be attributed for relatively quick healing.

Chromic catgut was used as it was readily available and cheaper. To prevent infection injection Amoxicillin and to alleviate pain injection Ketoprofen was administered. For better cutaneous wound healing different authors used various agents like fibrin glue (Michel and Harmond, 1990), honey (Bergman *et al.*, 1983), sea buck thorn ointment (Gupta, 2002) and obtained better granulation tissue formation, reepithelialisation and other favourable histo-pathological factors. In this case paste made of Zinc oxide and tincture

Figure 1. Photograph showing lacerated wound of lip and cheek. Observe blood clots and contamination.

Figure 2. photograph taken at the time of suture removal. Observe clear apposition.

benzoin was used on first day as an anti coagulant and from next day onwards combination of zinc oxide and tincture iodine was used because of their better wound healing and antiseptic properties respectively. Topical application of zinc oxide enhances reepithelialisation of partial thickness wounds in pigs. The cell division in wounds is connected with increased demand for zinc due to its function in enzymes required for cellular replication and zinc found to be slightly mitogenic to epithelial cells (Agren *et al.*, 1991).

REFERENCES

Agren, M.S., M. Chvapil and L. Franzen. 1991. Enhancement of re-epithelialisation with topical zinc oxide in porcine partial-thickness wounds. *J. Surg. Res*., **50**: 101-105.

Alam, M.R., N.G. Gregory, M.S. Uddin, M.A. Jabar, M.S. Choudhury and M.C. Debnath. 2010. Frequency of nose and tail injuries in cattle and water buffalo at livestock markets in Bangladesh. *Anim. Welfare*, **19**: 295-300.

Bergman, A., J. Yanai, J. Weiss, D. Bell and M.P. David. 1983. Acceleration of wound healing by topical application of honey. *Am. J. Surg*., **145**(3): 374-376.

Gupta, M. 2002. Studies on efficacy of Sea buck thorn (Hippophae rhamnoides) in the healing of infected cutaneous wounds in canines: Thesis submitted to CSKHPKV, Palampur, Haryana. *Indian J. Vet. Surg*., **23**(2): 109.

Michel, D. and M.F. Harmand. 1990. Fibrin seal in wound healing: Effect of thrombin and Ca^{2+} on human skin fibroblasts growth and collagen production. *J. Dermatol. Sci*., **1**(5): 325-333.

Venugopalan, A. 2009. *Essentials of Veterinary Surgery*, 8th ed. Oxford & IBH Publishing Co. Pvt. Ltd., New Delhi, India.