

## CLINICAL MANAGEMENT OF SECOND DEGREE BURNS IN A SHE BUFFALO: A CASE REPORT

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### **ABSTRACT**

This communication reports a case of second degree burns in a she buffalo which was successfully treated without any complications. Very few reports are available regarding the clinical management of burns ( Archibald, 1974; Tyagi and Singh, 2002) in buffaloes.

**Keywords:** second degree burns, buffalo

### **INTRODUCTION**

A burn is nothing but charring of tissue when it is exposed to dry heat. The burns are classified into first degree, second degree, third degree burns based on the extent of destruction to the tissue. Second degree burns are those which involve the epidermis and dermis layers of the skin. The burned area will be red and may show blisters and the skin is hot, painful to touch. In case of third degree burns all the layers of the skin are involved and the underlying structures such as nerve endings gets damaged. Hence in case of third degree burns there will be no pain. The first and second degree burns are together grouped as Group I (Davis, 1984). The outcome of the case mainly depends not only on the degree of burns but also on the extent or area involved.

### **Case history and observations**

A she buffalo was presented to clinic with severe burns. The burns were due to the fact that the thatched housing under which the animal was kept caught fire. The buffalo was kept restrained so there was no way for the buffalo to escape. The case was immediately rushed to the hospital. Examination of the buffalo revealed that about 40% of the total surface area was involved. By the time the animal was brought to the clinic (50/minute), it was in recumbency and its responses to external stimuli were sluggish. The temperature was 104°F. The respiratory rate was 28/minute. The heart rate was 90/minute due to hypovolemia. The quality of pulse was weak

### **TREATMENTS AND DISCUSSION**

The animal was put on comfortable bedding, and the treatment was started. As the quality of the pulse was very weak and the animal's response to external stimuli was sluggish, it was established that the animal was in a state of shock. The shock may have been due to fact that a large area of skin was involved, since this might have caused severe evaporative losses during and after the incident. (Tyagi and Singh, 2002) Dehydration was clearly evident with increased capillary refill time. In such cases, fluid therapy is primarily aimed to establishing the circulatory volume (Pierson, 1969). This can be achieved by giving the electrolyte solutions. But in such cases the quantity of the crystalloids need to



Figure 1. 0<sup>th</sup> day- six hours post treatment- note the extensive burns involving 40% of the total surface area.



Figure 2. 0<sup>th</sup> day- six hours post treatment- note the extensive area involved on the face.



Figure 3. 8<sup>th</sup> day post treatment- note the marked improvement of the lesions.

be given are very high volumes. Hence, the colloid solution was considered initially (Archibald, 1974). This was done by giving Haemaccel [containing degraded gelatine (equivalent N<sub>2</sub> content of 0.63 gm) 3.5 gm in 100 ml, Electrolytes in mmol/Litre are Na 145, K 5.1, Ca 6.25, Cl 145] 1 litre I/V followed by the crystalloid solution of DNS 3 litres I/V. Then hypertonic solution of 3 litres of 25% dextrose was given I/V. In order to save the life of the animal, dexamethasone was also given 0.1 mg/kg bwt I/V. To mitigate the pain ketoprofen 2.5 mg/kg bwt was also given. Silverex (silver sulfadiazine 1% w/v) ointment was prescribed which was applied topically in severely injured parts. A course of antibiotic was also started. The antibiotics metronidazole 10 mg/kg bwt I/V, benzithine penicillin 4,800,000 units on alternate days was considered. The combination was considered in order to achieve a broad spectrum of action. The treatment was continued for about ten days. Daily cleaning of the affected parts was done with potassium permanganate lotion 1:1000 dilution and the application of the silverex ointment on critically injured areas was done. The remaining areas were cleaned. After the third injection, benzithine penicillin

was stopped, and an amoxycillin and cloxacillin combination was started instead. Fluid therapy was done for three days by making use of Haemaccel 2 litres I/V, DNS 2 litres I/V, RL 1 litre I/V and 25% dextrose 2 litres I/V. From fourth day onwards DNS 3 litres, RL 1 litre and dextrose 3 litres were given intravenously. The intravenous administration of metranidazole was stopped on day 5. The amoxicillin and cloxacillin was given till the complete recovery, during the first 6 days the animal continuously received NSAID ketoprofen to alleviate pain and to make the animal comfortable. The lesions started healing from fourth day onwards. This was evident from the fact that there was a decrease in the pain, the charred skin started peeling off exposing the underlying tissue. Then slowly in less affected areas there is development of melanin pigment which showed the tendency to change to dark colour. From 8<sup>th</sup> day onwards the severely affected areas showed the development of leathery skin which continued to grow over affected areas. It took about 20 days for the complete healing. The treatment with antibiotics was stopped on the 12<sup>th</sup> day onwards, but topical application of antiseptic powder was

advised to prevent bacterial complications, which would cause delay in healing process.

The case of second degree burns presented to the clinic with poor prognosis was successfully treated by proper fluid therapy, broad spectrum antibiotic and good hygienic practices.

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