

CLINICAL MANAGEMENT OF SECOND DEGREE BURNS IN MURRAH BUFFALOES - A TYPICAL CASE REPORT

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ABSTRACT

The present study deals with a case of second degree burns in three Murrah she buffaloes. The degree of involvement ranged from superficial partial thickness to deep and full thickness burns. Treatment was carried out using Dextrose normal saline, Ringer's lactate, benzathine penicillins, Metronidazole and antihistamines. Topically silver sulphadiazine ointment was applied. Significant and uneventful recovery was observed in all the animals.

Keywords: *Bubalus bubalis*, buffaloes, burns, Murrah, benzathine penicillin, metronidazole

INTRODUCTION

Burn is a type of injury to skin or deeper tissues caused by hot solids/liquids, fire, electricity and chemicals. Of these fire burns in animals are usually due to accidents (Tyagi and Singh, 2002). Usually burns occur in animals when a house in

which they are tethered or housed catches fire (Tyagi and Singh, 2010). The degree of severity of most burns is based on the size and depth of the tissue involvement and accordingly signs vary from mild discomfort to the life-threatening emergency. The prognosis of the case mainly depends not only on the degree of burns but also on the extent or area involved. The knowledge of treatment of burns in animals has been garnered from clinical studies of human burn victims. The severity and complication of the response to a severe burn demands a thorough knowledge of burn pathology and the highest level of medical and surgical care to ensure a positive outcome (Pope, 2003; Bohling, 2012). The present paper deals with three cases of burn injuries in buffaloes due to fire and its therapeutic management.

CASE HISTORY AND OBSERVATIONS

Three cases of burn injuries were reported in Murrah she buffaloes in Etawa area of District Jaipur, (Rajasthan, India) on April 19th, 2018.

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The burns were due to the fact that the thatched housing in which the animals were accommodated caught fire in the mysterious circumstances. As the animals were tied to strong polls with iron chains so, there was no way for the buffalos to escape from the accident and unfortunately by the time they were set free, they received second degree burns.

A team from MJFCVAS, Chomu went to the site immediately on getting a call from the owner. Examination of the buffaloes on site revealed that in one buffalo about 50% of the total surface area was involved while in the other two nearly 30% of surface area of body was affected. All the buffaloes had second degree burns involving the epidermis and dermis of the skin. The animals had lesions ranging from simple partial thickness burns on the head, face, neck, shoulder joint, right and left flank region characterized by complete black charring at the base of the ear and loss of superficial layers of skin at some places. In others the lesions were deep burns over the gluteal region, perineum and tail and in one case the tail was completely burnt from base up to the switch with gross distortion in its structure (Figure 1 and 2).

The systemic signs were less pronounced in superficial thickness burns while more conspicuous in deep thickness burns. Temperature was slightly higher in all buffaloes. The pulse and respiration rates were also found increased. The other clinical signs included inappetence, shriveled skin, loss of milk yield etc. The affected animals had increased thirst but on offering water they declined to drink and were scared.

TREATMENT AND DISCUSSION

Before starting the treatment, all the animals were provided comfortable bedding.

The initial therapy was started with colloids and crystalloids to stabilize the animals. Ringer lactate and 5% Dextrose were the fluids used for overcoming the dehydration at the rate of 40 ml/kg I/V b.i.d each for seven days to prevent the shock. Haemaccel (1 litre, I/V) was administered as colloid after the administration of crystalloids. They were treated with Inj. benzithine penicillin 4,800,000 units i/m on alternate days for 10 days which served as an antibiotic. Metronidazole 10 mg/kg bwt I/V was given for 7 days to control anaerobic infections. Inj. ketoprofen 2.5 mg/kg bwt I/m for b.i.d was used for relieving pain, Inj. Tribivet 10 ml i/m as liver extract, Inj pheriramine maleate (Avil) 10 to 15 ml according to body weight I/m for b.i.d for 5 days as antihistaminic.

The burn lesions were cleaned with 1:10000 potassium permanganate solution followed by 1% silver sulfadiazine (Silverix[®]) hydrophilic ointment smeared on burnt area for four weeks till complete healing was recorded. Silver sulphadiazine has broad spectrum activity against most of the bacteria, fungi and ability to penetrate necrotic tissue. Wound dressing with silver sulphadiazine hydrophilic paste provide an antiseptic and soothing effect. Potassium permanganate washings and silver sulphadiazine ointment helped in early healing and to overcome the bacterial infections. Similar effect of silver sulphadiazine was also reported by Chaudhary *et al.* (2010). To prevent the maggot and flies infestation topicure spray was used.

Fire and flame induced burns are the most commonly reported etiology of burns in large animals (Yadav *et al.*, 2010; Sandhya *et al.*, 2016). Pain response was least in this case despite severe tissue damage. This might be attributed to the damaged nerve endings because of second degree burns.



Figure 1. Deep burn lesions over the body of buffalo.



Figure 2. Image showing charring of ear pinna of a buffalo at the time of presentation.



Figure 3. Image showing recovery of burns after 30 days of treatment.

The parenteral therapy with intravenous colloids and crystalloids and broad spectrum antibiotics were more suitable in the present study, as the improvement was significant and progressive day by day. The combination of benzathine penicillin and metronidazole was considered in order to achieve broad spectrum of action against infections. The treatment adopted in the present case is similar to that done by Sagar *et al.* (2010) in a graded Murrah she buffalo and Kavitha *et al.* (2011) in twenty one Hallikar cattle. All animals recovered uneventfully after three weeks of treatment (Figure 3).

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