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Successful management of chemical scalding in a feline

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Abstract
Chemical injuries resulting in wounds are common in pet animals, A two year old male cat was presented with a history of small wound on the lateral aspect of the thigh which was deteriorating day by day on application of the topical ointment containing gamma benzene hexachloride. On physical examination, a large wound with serous exudate was noticed. Wound was cleaned with normal saline and antimicrobial agent followed by topical application of Oint. Containing povidone iodine, sucralfate and cream fusidic acid. Immobilisation was done by bandaging. Antibiotic and anti-inflammatory therapy was given for successive five and three days respectively. Wound healing was observed within 45 days of treatment. Wound contraction and epithelialisation of the wound observed within 60 days of the post treatment.

Keywords: Chemical scalding, cat, gamma benzene hexa chloride, granulating wound

Introduction
Chemical injuries are most commonly noticed as accidental injuries in small animals. This may result from inadvertent contact with the noxious agent or malicious application (Slatter, 2003) [1]. These chemicals may be strong acids or alkalis or corrosive substances that destroy tissue by denaturing proteins or interfering with cell metabolism (Fossum, 2012) [2]. The mechanism of injury is through oxidation, reduction, corrosive, dehydration and vesication. The severity of the injury depends on type and strength of the chemical, volume , duration of the contact, penetration of the chemical and its mechanism of action (Senel and Ergin, 2014) [3]. Clinical signs include redness and inflamed skin, serous discharge, discolouration of the skin and sloughing of the skin (House 2013) [4]. Chemical injuries due to household agents include corrosives and dehydrating agents. Corrosives produce damage by protein denaturation which results in erosion and ulceration, dehydrating agents desiccate the tissue (Slatter, 2003) [1].

Treatment of the chemical injury involves thoroughly flushing the wound with large quantity of water. Removal of the dead tissue to control the sepsis and prepare a viable vascular bed (Fossum, 2012) [2]. Wound dressing by Topical application of the antiseptic solution to aid in wound healing (Slatter, 2003) [1].

Case history and clinical examination
A two year old male cat was presented to the Department of Veterinary Clinical Complex, College of Veterinary Science, Proddatur with a history of small wound developed at the lateral aspect of the thigh 10 days back due to accidental contact with some chemical agent. Later, pet was treated with ointment containing gamma benzene hexachloride for the past one week and wound was deteriorated day by day. On physical examination, a large wound measuring about 15 ×10 cm (Fig. 1) was noticed on lateral aspect of left thigh with serous exudate was oozing from wound site (Fig. 2).

Materials and Methods
The area around the wound area was clipped and wound area was initially flushed with normal saline to remove the debris attached to the wound. Later, diluted povidone iodine solution was used for cleaning. Debridement of dead tissue was done followed by application of Oint. Containing povidone iodine, sucralfate and cream fusidic acid. Wound was immobilised with hydrophilic bandage. Systematically animal was administered with Antibiotic syp.

Amoxicillin clavulanate @ 12.5mg/kg body weight and anti-inflammatory syp. Meloxicam @ 0.2mg/kg body weight through per oral route for consecutive five and three days respectively. Wound dressing was done on alternate days.

Results and Discussion

In the present case serous exudates was minimal by 3rd day and healthy granulation tissue (Fig. 3) was observed within a week. This is in accordance with Fossum (2012) [2] who stated that during repair phase of the wound healing fibroblasts migrate to wound surface and the inflammatory phase subsides within 2-3 days and healthy granulation tissue appears as bright red. Wound contraction was observed within 45 days of treatment (Fig.4). Epithelialisation of the wound with minimal scar was observed within 60 days of the post treatment (Fig. 5). During the wound healing there will be transition from inflammatory phase to repair phase. This repair phase is marked by appearance of the healthy granulation tissue, re-epithelialisation and wound contraction (Cassie N, 2021) [5]. Povidone iodine is an broad spectrum antimicrobial agent with good efficacy and tolerability, thus aids in wound healing (Bigliardi *et al*., 2017) [6]. Topical application of sucralfate aids in healing of the epithelial wounds which is marked by granulation tissue development (Masuelli *et al*., 2010) [7]. Fusidic acid is an antibiotic that act by preventing the bacterial infection to the wound (Bouza, 2009) [8]. Thus, povidone iodine, sucralfate and fusidic acid was useful in treatment of the wound in cats.

Fig 1: Chemical injury on the lateral aspect of the thigh

Fig 2: Large open wound with serous exudate

Fig 3: Formation of the healthy granulation tissue

Fig 4: Contraction of the wound edges

Fig 5: Epithelialisation of the wound with minimal scar formation

Conclusion

Chemical injuries resulting in wounds are common in pet animals, wound healing can be achieved through regular dressing of the wound with antimicrobial agents, and topical application of ointment containing povidone iodine and sucralfate, fusidic acid cream will aid in the formation of granulation tissue, epithelialisation of the wound and wound contraction.

Conflict of Interest

Not available

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Not available

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