

MANAGEMENT OF KNUCKLING WITH SCIATIC TOE BANDAGE IN A DOG

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Sciatic nerve deficit can occur as a result of spinal disease, trauma to the skeletal or peripheral nerve, or iatrogenic trauma. This is characterized by the loss of sensation with diminished or complete loss of conscious proprioception which is manifested by knuckling or standing on the dorsum of the toes of hind foot. The dorsum of the toe get bruised, abarated and leading to sloughing of the foot due to repeated walking on the dorsum of the foot. Sciatic nerve deficit in a Spitz dog due to faulty injection at the thigh and its management is presented in this paper.

HISTORY AND OBSERVATION

A 7 years old male Spitz dog was reported to Small Animal out patient unit of Madras Veterinary Teaching Hospital, Chennai with the history of knuckling with complete sloughing of the dorsum of the foot of left hind toe along with hard painful swelling on the thigh following administration of an injection at the thigh for some other ailment. On examination of the limb, hard swelling in the thigh and bruising with complete sloughing of the dorsum of toe with knuckling was noticed exposing the tendons, metacarpal bone and phalanges (Fig). The patellar reflex with diminished conscious proprioception was observed. Radiographic examination of the hind limb revealed no bony involvement. Hence the case was diagnosed as Sciatic nerve deficit of second degree and treatment was advocated.

TREATMENT AND DISCUSSION

The wound was cleaned and dressed with povidone iodine solutions and the limb was secured with 'Sciatic Toe Bandage' for keeping the toe in planter position (Slocum and Slocum, 1998). Low frequency LASER therapy @ 600 nm for 5 minutes for four consecutive days and there on three alternative days was advocated. Collagen gauze was applied over the wound for enhancing epithelialization and granulation. The hard swelling at the thigh region which got abscessed was drained out and treated with periodical dressing with povidone iodine solution. Chemotherapy with Ceftriaxone @ 10 mg/kg b.wt for a week and Amoxicillin Sulbactam @ 5 -10mg/kg b.wt was administered intravenously with consecutive dressing. The wound healed up by granulation tissue formation by 45 days and the animal was able to bear weight and walk normally.

Sciatic nerve deficit is loss of sensation with desensitization or loss of conscious proprioception manifested by knuckling or standing on the dorsum of toe of hind foot. Sensory input to the spinal cord from the lateral three digits is supplied by sciatic nerve, whereas the medial digit is supplied by femoral nerve. The injection given at the thigh might have induced damage to the myelinated fiber of the nerve or the hard swelling might have induced sciatic nerve deficit due to compression leading to knuckling. Sciatic toe bandage or spoon splint (L) are used to secure the toe, which prevents the flexion of the phalangeal metatarsal joint during ambulation and cause the patient to bear weight on the foot pad. Mild sciatic nerve deficit 'neuropraxia' could be well managed with sciatic toe bandage and the animal will recover eventually within 1-3 weeks. In case of severe damage to sciatic nerve 'axonotmesis' the healing process will take 2-3 months (Slocum and Slocum, 1998).

Low LASER therapy at the strength of 630-740 nm specific visible and near infrared wave stimulate wound healing by process of biostimulation and has proven to be effective for tissue vascularisation thereby enhancing wound healing process (Bartels, 1998). The collagen-impregnated gauze was found to be effective in epithelialization of the wound and thereby enhancing the process of wound healing (Madison *et al.*, 1991). Swaim *et al.* (2000) reported that hydrolyzed bovine collagen dressing was appeared to be hydrophilic and favoured an environment for the wound to be kept clean which enhanced early epithelialisation.

This communications would provide an insight for the field veterinarians on the necessary precautions to be taken during administration of injections and management of case of knuckling with sciatic toe bandage and collagen impregnated gauze.

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