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Management of complications following carpal hygroma excision in a heifer

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A carpal hygroma is an acquired bursa, which is fluid filled localized swelling over the dorsal aspect of the carpal joint (Shukla *et al.*, 2020). Predisposing factors for carpal hygroma include trauma due to constant rubbing with rough/hard flooring, narrow or short stalls, which restrict free movement of the animal, heavy body weight and high milk yield (Shukla *et al.*, 2020; Venugopalan, 2020). Brucellosis can also be responsible for causing knee hygroma (Chhatpar *et al.*, 2012). Highest breed prevalence was observed in Holstein Friesian (87.02%), followed by Jersey cross (9.16%) and buffaloes (3.82%) (Phaniraja *et al.*, 1999).

Acute bursitis can be managed by aspiration of serous fluid, administration of steroids like hydrocortisone acetate and antibiotics such as penicillin G-sodium, dihydrostreptomycin and neomycin; whereas, chronic bursitis can be treated by topical application of adsorbent like iodine ointment or instillation of an irritant solution after aspiration of hygroma contents or bursal incision (Venugopalan, 2020). Surgical excision is recommended in case of chronic bursitis (Chhatpar *et al.*, 2012). Since there is limited information about management of postoperative complications of carpal hygroma excision in the veterinary literature the present case report tries to emphasize on it.

An 8-month-old HF heifer weighing about 175 kg was presented with a complaint of small swelling on the right carpal joint since four months, which increased in size gradually. The heifer was reared on concrete flooring. History revealed that the previous treatment by a paravet with steroids, diuretic, NSAID and hot water fomentation with magnesium sulphate proved unfruitful. Clinical examination revealed a fluid-filled, soft, painless swelling measuring 12.5 cm in length over the right carpal joint. Needle aspiration revealed slightly yellow-coloured fluid, indicating carpal hygroma. The physiological parameters were within the normal range and a decision for surgical excision of the hygroma was taken.

The heifer was sedated with xylazine (0.03 mg/kg body wt, i.v.). The surgical site was prepared aseptically, followed by local infiltration of 2% lignocaine HCl (Fig. 1). An elliptical incision was made over the swelling, and the bursa was removed intact by dissection of the peri-bursal tissues and adhesions. Occasional bleeders were clamped and ligated as required. The dead space was obliterated, followed by the trimming of excess skin. The wound edges were apposed using horizontal mattress sutures followed by pressure bandaging to restrict the movement. Postoperatively the patient was administered ceftriaxone (10 mg/kg body wt. for 5 days) and meloxicam (0.25 mg/kg body wt. for 3 days) intramuscularly. The next day, suture dehiscence of the proximal suture line was observed as the patient tore the bandage in an attempt to rise on the carpal joint (Fig. 2). The wound was dressed followed by re-suturing the next day. A restrictive, Robert-Jones bandage with a 'window' to allow daily dressing of the suture line was applied by fastening three bamboo splints medially, posteriorly, and laterally (Fig. 3). Cotton tape was applied at the level of the wound on each layer of gauze bandage to prevent it from fraying and loosening. The heifer adapted to sit with the splint bandage in place. Healing of the suture line was observed 15 days post re-suturing followed by suture removal (Fig. 4). However, due to the bratty behaviour of the heifer, the splint bandage was kept in place for 5 more days.

In the present case, the animal was reared on hard uneven flooring since birth, which might have resulted in repetitive trauma eventually leading to carpal hygroma as also observed by others (Venugopalan, 2020; Singh *et al.*, 2021). The animal should be provided with soft bedding or kept on *kuccha* floor along with the provision of daily exercise (Hanuman *et al.*, 2021). Medical treatment of carpal hygroma in the present case was unsuccessful, which could be attributed to its chronic nature. Hence, surgical excision was opted as also suggested by Chhatpar *et al.* (2012). In the present study, bamboo splints fastened over Robert-Jones bandage with a 'window' to facilitate dressing of the suture line worked well to restrict mobility of carpal joint, which

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Fig. 1: Carpal hygroma. Aseptic preparation of surgical site.

Fig. 2: Suture dehiscence of the proximal suture line.

Fig. 3: Restrictive Robert-Jones bandage with splints and a 'window'.

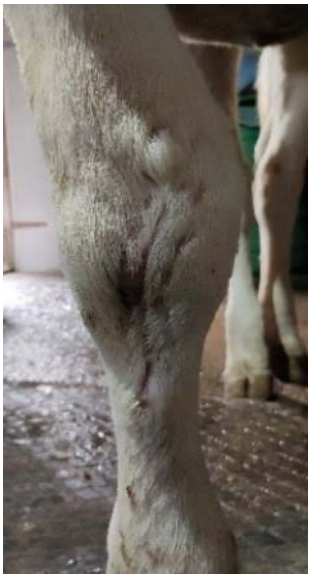

Fig. 4: Healing of surgical wound after re-suturing and restrictive bandaging.

is an affordable alternative to fibreglass used by Singh *et al*. (2021). Postoperative complications such as suture dehiscence, wound infection, seroma formation, and exudation could be monitored from the window created. Restricting joint mobility as well as animal movement was found to be crucial for successful post-operative management. The success of post-operative complication management could be attributed to owner compliance, keen monitoring of the patient post-surgery, and prompt response.

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