SURGICAL MANAGEMENT OF OLECRANON BURSITIS IN FOUR HAND RAISED GOLDEN JACKALS (*CANIS AUREUS*)

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ABSTRACT

Hand raised four Golden jackals of age around 6 months were observed with olecranonbursitis. Frequent rubbing/ trauma from the wooden floor of the refuge den was suspected to be the reason for development of olecranon bursitis. The case was confirmed by aseptic aspiration of content from lump. Later surgical intervention was planned. They were immobilized with ketamine hydrochloride and diazepam at the dose rate of 10 mg/kg and1 mg/kg, respectively. Surgically, the lumps were removed and recovery was seen in a month of surgical intervention.

Key word: Olecranon bursitis, Golden jackal, *Canis aureus*, surgical management

Introduction

Jackals are medium-sized canid, considered the most typical representative of the genus Canis (Clutton-Brock *et al.*, 1976). The Golden jackal (*Canis aureus*) is featured in schedule-II (part-I) species under the Wildlife Protection Act, 1972. The Golden jackal is fairly common throughout its range. They feed on wide range of foods, enables to live in different habitats. They are opportunistic and venture into human habitation at night to feed on garbage. Change in land use pattern, shrinkage of their natural habitat, availability of food, road kill, increase conflict are the possible threat for declining their population in certain areas. Study on evolutionary tree has found that the Grey wolf and dog are most closely related and followed by Coyote, Golden jackal and Ethiopian wolf and these species can hybridize with dogs in the wild (Lindblad-Toh *et al.,* 2005)

Wild animal under captivity susceptible to various type of trauma because of the housing environment. Olecranon bursitis or capped elbow or hygroma of elbow or elbow seroma is fluid filled cavity surrounded by a dense fibrous connective tissue due to inflammation over the olecranon bursa (Sharma *et al*., 2015). Canine elbow joint is surrounded by olecranon bursa just beneath the skin to facilitate smooth gliding of the skin over the olecranon (Kantia *et al.,* 2015). The animals with bursitis are not usually lame. Over a long period of time, elbow hygromas may become inflamed and ulcerated. If the hygroma is secondarily infected, the animal may exhibit pain and fever (Johnston, 1975). In this case study of 4 Golden jackals, it was found that wooden refuge was the cause of chronic trauma resulting in bilateral olecranon bursitis. Surgically the lumps were removed and, in a month, recovery was observed with healing of surgical wound.

Case history

Four orphan Golden jackals, 3-4 days old were admitted at Bodoland Wildlife Transit Home, Wildlife Trust of India-Mobile Veterinary Service-Western Assam, Kokrajhar, BTC, Assam, a satellite station of Centre for Wildlife Rehabilitation and Conservation (CWRC), Borjuri, Golaghat, Assam for hand raising. The pups grownup to 6 months of age and weighing up to 5-6 kg at the centre. Initially a soft lump caudal to the right forelimb elbow joint was palpated in one of the pup. More aggressive therapy like aspiration of content and the injection of corticosteroid into the hygroma were performed but reoccurrence was observed. This treatment was no longer followed because of complication of infection (Johnston, 1975). In due course of time all the four pups developed bilateral bursitis of varying lump size. Pain and affection of gait was not significant. Based on the physical examination and clinical signs, a diagnosis of elbow hygroma was made on that point of time. Consideration a case of recurring and type of enlargement of lumps, surgery was planned.

Surgical management

The pups were withheld for food and water prior to the operation for a period of 12 hours. All the pups were immobilized with intramuscular administration of ketamine hydrochloride and diazepam at the dose rate of 10 mg/kg and 1 mg/kg b.wt., respectively. Pups attained surgical plane of anaesthesia within 3 minutes. Intravenous fluid therapy was initiated and continuous infusion rate of ketamine hydrochloride was maintained during the period of surgical management. The pups were prepared for aseptic surgery and positioned in lateral recumbency exposing the affected limb where surgical intervention was to be done (Fig.1). An incision of 3-7 cm was made on skin depending on size of bursitis. The bursa was removed by controlling bleeding points with help of ligation. After removal a simple continuous suture was done to remove the dead space and then simple interrupted suture (Polygalactin 910, 2-0) placed on skin. A pressure bandage was placed on elbow joints with cotton, cotton gauge and adhesive tape at least to be kept for 3 days. Same method was followed for remaining pups. They were kept post operatively on ceftriaxone @ 20 mg/kg b. wt. for 7 days, chlorpheniramine maleate @ 0.5 ml/kg b. wt. for 3 days and meloxicam @ 0.1 mg/kg b. wt. for 5 days intramuscularly. Serratiopeptidase tablet was given OD PO for 5 days. Regular dressing was done externally with povidone iodine and gamma benzene hexachloride spray. Out of four pups two were observed with external suture tearing. The individuals were re-sutured after cleaning the wound with antiseptic solution and physical debridement. All the individuals recovered after 30 days of surgical intervention and no recurrence was observed

Results and Discussion

There is scarce information about cause, treatment of bursitis in Golden jackal and best suited post-operative care

for wild animals. Prior to development of bursitis, all the four pups were kept in an enclosure with wooden refuge den with minimal human exposure to maintain their wild instinct. They run and taking refuge inside the refuge den, each time approached by animal keeper for providing food and health monitoring. Frequent rubbing/trauma from the wooden floor of the refuge den was suspected to be the reason for bursitis. Reports on dog suggest that capped elbow is more frequently reported in young dogs of large breeds before a protective callus form on the bony prominence (Nath *et al*., 2014). Repetitive trauma in dogs lying on hard surfaces during housing (Kousi *et al.,* 2017) and housing environment of research dogs, especially cage bottoms and cement runs, may predispose them to hygromas (Nemzek *et al*., 2015). All the four pups were restrained chemically. Ketamine hydrochloride at a dose rate of 10 mg/kg and diazepam at a dose rate of 1 mg/kg b.wt. in combination was found to be effective for the Golden jackals to undergo surgical operation. Few of the study also revelled about the use of xylazine and ketamine hydrochloride at a dose rate of 1 mg/kg and 10 mg/kg, respectively for immobilization of captive Indian jackal (Catherine *et al*., 2017). The results were smooth and relatively rapid induction with smooth recovery. A combination of 113 ± 24 µg/kg medetomidine and 2.1±0.3 mg/kg ketamine or 88±16 µg/kg medetomidine and 0.47 ± 0.08 mg/kg midazolam injected intramuscularly also found safe and effective immobilization for at least 20-30 min in free-ranging golden jackals (King *et al*., 2008). Post-operative care for wild animals has always been a challenging. Special importance was also given to prevent removal of bandage, stature tearing, licking and infection. Elizabethan collar was prescribed until complete wound healing to prevent self-trauma from chewing/licking. All the pups were shifted to a separate small size cage (4 ft X3 ft X3 ft) to restrict movement with soft bedding. The animal was examined daily and its welfare monitored during the period. The pups recovered completely within a month of time.

In conclusion, surgical excision of elbow hygromas found to be an effective treatment in our case, though there were high chances of post operative care complication. Special care on housing environment and attendant need to be familiar with such cases for successful handing rising of orphan cub/kitten.

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Fig. 1: Surgical removal of bursa in Golden jackals

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