

Management of Traumatic Brain Injury in Juvenile Golden Jackal (*Canis aureus*)

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Abstract

A juvenile male Golden Jackal was rescued from a village. Anamnesis suggested possible injury due to automobile accident. Initial observation and physical examination revealed lateral recumbency and hindlimb stiffness along with dorsal curvature of the back. A thorough neurological as well as orthopedic examination led to neuro-localization of the lesion approximately in the cerebellar region. Radiographic examination concluded that there was no detectable skeletal abnormality. Leucocytosis, neutrophilia and significant elevation in the SGPT and ALP values were noticed. Defecation and urination were voluntary. Initial therapeutic management included administration of a combination of steroidal drugs and supportive therapy which was continued for three days along with supportive fluid therapy. Additionally, infrared therapy was initiated to improve the ambulatory response, coupled with physiotherapy. The pup was fed a protein rich diet along with oral Syrup containing mecobalamin vitamins and lycopene for the duration of rehabilitation. Appropriate ambulation with reduced incoordination was exhibited by the puppy. After a rehabilitation period of around 45 days, the puppy was released back in to the wild.

Introduction

The Golden jackal (*Canis aureus*) is a wild canid found in a varied number of habitats ranging from tropical forests to deserts. In India, the golden jackal is listed in Schedule III of the Wildlife Protection Act (1972). Golden jackals are opportunistic and often venture into human habitations at night to feed at garbage dumps, or scavenge on livestock carcasses. This generally leads to susceptibility of these animals to vehicular trauma due to speeding automobiles. Little retrospective or prospective clinical data exist pertaining to the treatment of canine and feline head trauma patients (Mukherjee, 2004.) The following case report records the therapeutic management of a case of a juvenile male Golden Jackal puppy which was rescued and presented to Jivdaya Charitable Trust, Ahmedabad.

Case History and Observations

A juvenile, male Golden Jackal was presented to the hospital after being rescued from the road by a wildlife rescue team. The jackal was reported to have hit by an automobile and was found lying on roadside. Initial clinical observation, revealed that the puppy was ataxic and exhibited a typical decerebrate rigidity posture. Heart rate and respiration rate were marginally elevated with normal rectal temperature. All the cranial nerve reflexes such as the dazzle, palpebral, menace reflexes were positive for both eyes. Cutaneous trunci responses were present. The Modified Glasgow Coma Scale score

was recorded as 13 indicating a guarded prognosis. Radiographic examination was non-significant. Urination and defecation were voluntary. Leucocytosis, neutrophilia and significant elevation in the SGPT and ALP values were noticed. Neurolocalisation identified the CNS lesions approximately in the cerebellar region.

Treatment and Discussion

Butorphanol was administered intravenously (@ 0.2mg/kg) to induce slight sedation as well as analgesia, ensuring stress free treatment experience. Furosemide (@ 4mg/kg) followed by mannitol (@ 0.25 mg/kg) was administered over a period of 25 minutes. Dextrose (25% @ 4mL/kg) was administered intravenously to correct the fluid deficit. Vitamin B and cefotaxime sodium (@ 30mg/kg) were administered. This therapeutic regimen was repeated twice a day along with physiotherapy which included walking exercises in a pelvic sling and exposure to infrared light for a period of 15 minutes. Massage, stretching, passive range of motion (PROM), assisted standing, weight shifting was also a part of the physiotherapy regimen. A significant improvement in the mentation and gait was exhibited by the puppy after a week from presentation and initiation of therapy. Assisted walking and infrared therapy was continued for a period of two weeks. Supplementation of mecobalamin vitamins and lycopene was done for a period of one month. A significant reduction in ataxia and rapid walking movements were recorded. Exhibition of aggression such as display of canines and growling was exhibited. The patient was released back in the wild

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after extensive rehabilitation for a period of two months under intimation to forest department.

Jackal is successful hunter, especially of rodents although they are scavenger. They tolerate human presence more readily than the wolf (*Canis lupus*) and thus can be commonly seen around human settlements. Due to growing urbanization, roads are constructed to connect villages, has led to increase chance of road accident in wild animals (Ojha 2017). Modified MGCS which is adapted from a human GCS is used to suggest prognosis of a canine TBI patient (Platt *et al.*, 2001). The patient's total MGCS score is calculated by summing the scores of each category. A patient with an MGCS of 3 to 8 (score category I) indicates a grave prognosis, 9 to 14 (score category II) guarded prognosis, and 15 to 18 (score category III) a good prognosis. Spinella (2022) reported that massage improved circulation and lymphatic drainage and could be used to decrease edema and pain while providing stimulation that encourages nerve regeneration. Gibb (2014) reported that massage also promoted neuroplasticity and was beneficial in improving motor performance and deficits. In the current scenario, administration of cortico-steroids and medications to reduce intra-cranial pressure combined with physiotherapy and rehabilitation proved to be a utilitarian strategy in the management of traumatic brain injury in the Golden Jackal Puppy.

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