1.0 INTRODUCTION

Dogs are one of the oldest species of animals to have been tamed by man. In return for the food that man shared with them, they have followed him from the days he was a hunter-gatherer in the forests through the days he was a cultivator of land, to the modern day of information technology boom. The relationship has grown from one of mutual benefit to one involving strong emotional bondage between man and animal.

Traumatic spinal injuries in dogs must be older than this relationship. However, the association of dogs with man appears to have increased their chances of sustaining such injuries. In olden days, dogs have sustained spinal injury due to attack by wild animals or accidents when following their masters during their hunting trips or due to attack by enemies when trying to defend their master or his assets. In today's developed world the occurrence of this type of injury in dogs seems to have increased further due to increased frequency of encounters with speeding automobiles and chances of falling from buildings.

Traumatic spinal injuries may occur due to internal or external trauma. Internal trauma of the spinal cord results from intervertebral disc disease, pathological fractures, or congenital vertebral anomalies or instability, whereas external trauma results from automobile accidents, falling from heights, attack by man and animals, blunt objects hitting or falling on the back, and projectiles like bullets hitting the spinal column (Shores, 1992). Internal trauma may result in concussive or compressive injuries of the spinal cord because of the protruded or extruded disc material, fractures or luxations. External trauma may also cause vertebral fractures, subluxations, luxations or fracture-luxations which may result in severe compressive trauma to the spinal cord. Fractures may affect any part of the vertebrae like body, articular processes or the
spinal processes. Luxations are caused by tearing of the annulus fibrosus of the intervertebral disc and associated disruption of the diarthroidal joints and longitudinal ligaments. Trauma can also result in spinal haemorrhage or spinal cord concussion, which is a functional or anatomical abnormality of the cord in the absence of bony, ligamentous or disc lesions (McKee, 1990). These injuries can cause varying degrees of neurological dysfunction in affected dogs, with severe injuries leading to paraplegia. The condition causes unexplainable physical discomfort to the dogs and emotional distress to their owners.

Many techniques like wiring (Gage, 1968), vertebral body plating (Swaim, 1971), dorsal spinal plating (Gage and Hall, 1972), dorsal spinal stapling (Swaim, 1975a), modified spinal stapling (McAnulty et al., 1986), pin or screw and polymethylmethacrylate fixation (Blass et al., 1988), external skeletal fixation (Shores et al., 1989) and modified spinal stapling with tension band wiring (Voss and Montavon, 2004) have been evolved over the years for stabilization of a fractured or dislocated vertebral column. Each technique has its own applications, advantages and disadvantages (Bagley, 2000). Many decompressive procedures like hemilaminectomy (Gage, 1968), dorsal laminectomy (Dueland et al., 1973) and mini-hemilaminectomy (Braund et al., 1976) have also been evolved to relieve compression on the spinal cord.

Combination of spinal fixation techniques and decompressive surgery, preferably hemilaminectomy, has been used for the treatment of traumatic paraplegia in dogs (Cook, 1992). However, many of the dogs with traumatic paraplegia still die on their own due to complications associated with the disease or are euthanized due to lack of neurological improvement following inadequate treatment. Many a time, adequate treatment cannot be provided to veterinary patients with traumatic paraplegia because of the costly treatment protocols that are not affordable to many of the owners or lack of professional skill on the part
of veterinarians because of the inadequate diagnostic facilities available and complexity of treatment modalities. Modified spinal stapling and tension band wiring is a relatively simple technique which does not require sophisticated equipments or costly implants. It can be performed by a surgeon with basic skills in orthopaedic surgery.

Keeping this in view, the present study was undertaken with the following objectives.

1. To study the occurrence of traumatic posterior paralysis in dogs among the clinical cases presented to the College Hospital.

2. To study the types of spinal lesions associated with traumatic posterior paralysis in dogs.

3. To evaluate the efficacy of medical management and spinal fixation techniques in posterior paralysis.

4. To compare the efficacy of spinal stapling with tension band wiring with or without hemilaminectomy.

5. To study the clinical and radiographical changes associated with traumatic posterior paralysis and treatment.

6. To study the haematological and biochemical changes associated with traumatic posterior paralysis and treatment.