

# SURGICAL REPAIR OF ACHILLES TENDON RUPTURE IN A DOG

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Achilles tendon rupture in dogs is a common traumatic lesion. One and half year old Doberman male dog was presented with complete rupture of achilles tendon in left hind leg. The gap between the two cut ends of tendon was 2 cm with full extension of the tarsal joint. Ruptured tendon were sutured by Bunnel Mayer technique, with immobilisation of the limb using Thomas splint. Dog had uneventful recovery.

**Keywords:** Achilles tendon, Complete rupture, Dog, Dropped hock.

The achilles tendon is the strongest tendon in the structure of the musculoskeletal system in the dog. In dogs the tendo calcaneus communis originates from different muscle-tendon units that conjoin at the heel. its main function is in rear limb forward progression and it contributes to passive support of the hock (Fahie, 2005). The aetiology of achilles tendon injuries in dogs is usually traumatic. The nature of the trauma influences the type of tendon of tendon ends (Clark, 2001). Weakening or rupture of the tendon structure also can occur secondarily to systemic diseases like Cushing's disease or iatrogenic aetiologies (Montgomery and Fitch, 2003). Based on anatomical location and severity of lesions of the achilles tendon breakage has been classified into 3 types: type 1 is complete rupture, type 2 has three subtypes for partial rupture with a lengthened achilles injury and may result in acute rupture of the tendon with partial or complete loss of integrity of the structure sometimes with exposure tendon system and type 3 is a tendinosis or peritendinosis (Meustege, 1993; Fahie, 2005). The clinical signs associated with the rupture of the achilles tendon will vary depending on the severity of the injury but plantigrade position or dropped hock and the swelling around the tendon insertion on the hock are the main symptoms observed in a dog with complete rupture of the tendon.

## Case History and Observations

A one and half year old Doberman male dog with a history of accidental trauma by knife at the hock joint with left hind leg lameness was presented to Veterinary College Hospital, Hassan.. Upon examination, septic wound at left hock region with serosanguinous discharge was noticed with dropped hock condition (Fig. 1). Radiographic examination revealed rupture of tendoachilles with air pockets suggesting infection (Fig. 2). The hematobiochemical parameters were within the normal range. It was decided to correct the tendon rupture by tenorrhaphy.

## Surgical Management

The dog was anesthetized and positioned in right lateral recumbency. Surgical debridement of the wound was performed. Cut ends of the tendon were isolated from the surrounding tissue, debrided, irrigated with normal saline and apposed with Bunnel Mayer suture technique using braided silk no 1 (Fig. 3). Bursa covering tendon was sutured using polyglactin 910 no. 1. Skin was closed with a no-tension interrupted sutures using polyamide suture material no. 1-0.

A bandage (in physiological position) with a craniocaudal splint was applied and maintained for 10 weeks, both to protect the limb from infection and to support and immobilize the tibiotarsal joint. The limb was immobilized with Thomas splint using 4mm



**Fig. 1: Plantigrade position of limb**

aluminium rod. After 10 weeks, the dog was re-evaluated and was found able to bear partial weight. On palpation, the sutured portion of tendon appeared swollen, irregular and firm. The Thomas splint was continued for another month. The owner was informed to restrict the dog's activity and to perform



**Fig. 2: Radiograph showing ruptured tendoachilles**

passive physiotherapy intermittently by slow extension and flexion of the joint to prevent tendon adhesion and muscular atrophy.

Postoperatively the dog was given meloxicam, (0.2 mg/kg, bid, p.o.) for the first 5 days and cephalexin ( 25 mg/kg, bid, p.o.) for 10 days consecutively.



**Fig. 3: Surgical correction**



**Fig. 4: Radiograph showing healed tendoachilles**

### Results and Discussion

An uneventful recovery with complete bearing of weight was observed by three months period (Fig. 4). Out comes are typically quite good although some patients may never regain full strength as mentioned earlier. The suture pattern should not adversely affect the tendon vasculature and should avoid adhesion formations as also recommended by Moores *et al.* (2004). Bunnel Mayer technique using sterilized braided silk no1 provided sufficient stability

in the anastomosis. Spinell *et al.* (2010) have indicated that steel wires, polidioxanone or polyglyconate may also be used in such cases. Prevention of automutilation and immobilization of the limb using Thomas splint hastened the wound healing. The physiotherapy provided in the post operative period prevented the tendon adhesion and muscular atrophy as also recommended by Shani and Shahar, (2000) and Montgomery and Fitch (2003).

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