

**Short communication**

**CONGENITAL LATERAL PATELLAR LUXATION IN A SHORAIL DOG: A CASE REPORT**

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**ABSTRACT**

A shorail dog of 1.5 years old was admitted to the Teaching Veterinary Hospital, Chittagong Veterinary and Animal Sciences University with a clinical sign of weight bearing lameness of left hind leg. Physically and radiographically, it was diagnosed as grade IV lateral patellar luxation. Attempt was taken to treat the disease by combined tibial tuberosity transposition and trochlear resection. But after 8 months the symptoms attributed again as wire became torn and patella displaced laterally.

**Key words:** Congenital, patellar luxation, trochlear resection, wire suture

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**INTRODUCTION**

The patella, or kneecap, is part of the stifle joint (knee). In patellar luxation, the kneecap luxates, or pops out of place, either in a medial or lateral position. Bilateral involvement is most common, but unilateral is not uncommon. If the patella slips out and goes to the outside of the leg, this is called "lateral patellar luxation" is usually seen between 5 to 6 months of age (Cassidy and Degreer, 1963). Patellar luxation is a common problem of both large and small dogs and may be seen in cats as well. The condition may be developmental or traumatic in origin. It is usually congenital and is often a distinct syndrome (Douglas, 1993). The classic presentation is for small dogs to have medial patellar luxations and large dogs to have lateral luxations. This, of course, is subject to many exceptions, and some small dogs are presented with lateral patellar luxation (Newton and David, 2006). Similar kinds of genetic pattern noticed in Great Danes, St. Bernards and Irish wolf hounds (Rudy, 1966). Lateral luxation of patella in small dogs is rare and usually congenital. Lateral patellar luxation in large dogs or giant breeds is associated with severe limb deformities and carries a much more guarded prognosis. Shorail is our native breed and is a medium size dog. This is the first case report of patellar luxation in dogs in Bangladesh. So the present study was done to correct the lateral patellar luxation in that dog.

**CASE DESCRIPTION**

A Shorail dog of 1.5 years old was admitted to the Teaching Veterinary Hospital, Chittagong Veterinary and Animal Sciences University, Bangladesh with a complaint of weight bearing lameness of left hind limb (Fig. 1).

On physical examination of the affected limb no pain was detected. The patella and patellar ligament were found displaced laterally and they could not be moved to their normal position. Medial to lateral radiograph of the left stifle joint was taken and the patella was found displaced laterally on radiography. From physical and radiographic examination, the deformity was diagnosed as Grade IV lateral patellar displacement as described by Putnam (1968).



Fig. 1. Weight bearing lameness in Shorail dog.

#### OPERATIVE PROCEDURE

The affected limb was prepared for aseptic surgery. The dog was pre-medicated with atropine sulphate (ACI Ltd., Bangladesh) at 0.04 mg/kg body weight intramuscularly. Then induction was done with 2.5% thiopentone sodium (Abbort Laboratories Ltd., India) at 20 mg/kg body weight intravenously. The same agent was also used for maintenance. The animal was placed in lateral recumbency keeping the affected limb up. A cranio-lateral incision was given beginning from proximal to the patella and the incision was extended below the tibial tuberosity. The subcutaneous tissue was incised along the same line. The tibialis cranialis muscle from the lateral tibial tuberosity and the tibial plateau to the level of the extensor tendon was reflected. The trochlear groove was found shallow (Fig. 2), so it was decided to correct the deformity by combination of two methods namely tibial tuberosity transposition and trochlear resection. Generally combinations of techniques are required especially for the correction of the grade IV patellar luxation (Fossum *et al.*, 1997).



Fig. 2. Laterally displaced patella (arrow) and shallow trochlear groove (arrow head).

Beginning at the level of patella the medial parapatellar incision was made through the fascia and distally to the periosteum of the tibial tuberosity. The osteotome was placed beneath the patellar tendon 3-5 cm caudal to the cranial point of the tibial tuberosity to complete osteotomy (Fossum *et al.*, 1997). For trochlear resection the articular surface of the patella was measured. The articular cartilage and bone were removed with a bone knife from the trochlear groove. The depth of the groove was extended enough as to accommodate 50% of the height of the patella (Vierheller, 1959).

### *Congenital lateral patellar luxation*

After deepening of the trochlear groove the patella was placed on the groove and tibial tuberosity was transposed medially by fixing it with the help of copper wire with the bone. Normally for tibial tuberosity transposition Kirschner wire is used. Here in our study we used copper wire due to lack of facilities. The muscle and fascia were sutured with cat gut layer by layer and the skin was closed by silk. Patellar luxation due to genuvarum was successfully corrected by removing a wedge-shaped section of bone from the femur and immobilizing the severed ends by wire suture and also the absence of the femoral trochlear groove, constructed one by subchondral osteotomy (Fossum *et al.*, 1997). Wire suture method was also used for correcting grade IV lateral luxation of patella (Kodituwakku, 1962). According to Hammer (1979), animal improved to a normal gait and minimal valgus and varus deformity of the distal proximal tibia in seven operated stifle joint.

### **POSTOPERATIVE CARE AND MANAGEMENT**

The animal was put in the inpatient unit of close observation for a week. During postoperative period the dog was injected intramuscularly twice daily with antibiotic amoxycillin (Fisons, Bangladesh) at 8 mg/kg body weight 8 hourly for 6 days and was also injected antihistamine, pheniramine maleate (Square Pharmaceuticals Ltd., Bangladesh) at 1 mg/kg body weight once daily intramuscularly for 6 days.

### **POSTOPERATIVE COMPLICATION**

After 8 months the dog returned again with the same complaint. On physical examination the affected limb was found flexed and the patella and patellar tendon displaced laterally. On radiography the wire was found torn and displacement of patella was confirmed (Fig. 3). In general the prognosis for a successful outcome decreases as the grade and physical sign of disability increase and is inversely related to the age of the patient at the time of onset, therefore the younger the patient the more guarded the prognosis (Newton and David, 2006).



Fig. 3. Torn wire (arrow head) and laterally displaced patella (arrow).

Patellar luxation is one of orthopaedic problems in dogs. In our country correction of this problem is very difficult due to lack of facilities. Kirschner wire is used for transposition of trochlea. We used copper wire for this purpose. But the wire torn laterally as it could not bear tension. So, success of treatment of such kind orthopaedic problem depends on availability of facilities.

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