Coxofemoral Luxation

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Coxofemoral luxation is the most common joint luxation in dogs, accounting for 90% of all luxations. It is typically secondary to trauma or severe hip dysplasia, with 78% of hip luxations occurring in the craniodorsal direction. The primary stabilizers of the hip joint include the joint capsule, the ligament of the head of the femur, and the dorsal acetabular rim. Coxofemoral luxation occurs with functional loss of two or more primary stabilizers.

Hip luxation can be diagnosed with a history of trauma, physical examination, and pelvic radiographs. Up to 55% of patients with femoral head luxations have concurrent injuries, so a complete diagnostic workup is indicated in any patient presenting with hip luxation secondary to trauma. Physical examination in a patient with an acute luxation typically reveals non-weight bearing lameness with external rotation of the femur and adduction of the limb. Hip palpation may reveal swelling, pain, and asymmetry of the hips, with an increased distance between the greater trochanter and the ischiatic tuberosity. Patients with chronic luxations may have more functional limb use, and some will be weight-bearing.

Coxofemoral luxation may be identified on physical exam by several methods. Loss of normal anatomic landmarks, such as the triangle between the ilial wing, ischial tuberosity, and greater trochanter of the femur, indicates displacement of the femoral head from the acetabulum. ‘The thumb’ or ‘notch test’ can also help diagnose. This test is performed by placing a thumb between the greater trochanter and the ischiatic tuberosity and externally rotating the femur. If the femoral head is normally seated within the acetabulum, the thumb will be displaced from the ischiatic notch with external rotation of the femur. However, if the femoral head is luxated, the thumb will not be displaced when the femur is rotated.
Reduction and stabilization of the hip joint are preferred when possible and may be accomplished using closed or open techniques. In most cases, closed reduction of the coxofemoral luxation is attempted first. Although reluxation occurs in ~50% of cases, attempting closed reduction before pursuing open surgical reduction does not appear to alter the long-term prognosis, so it is still recommended in the majority of cases.

If acetabular or femoral head fractures are present, the joint reluxates immediately after radiographic confirmation of closed reduction, concurrent injuries necessitating a return to normal hip joint function, or a chronic luxation, initial open (surgical) reduction is indicated.

After closed reduction of craniodorsal hip luxation, an Ehmer sling is typically applied to the hindlimb to maintain reduction. After closed reduction of a ventral luxation, hobbles may be placed on the hindlimbs to prevent limb abduction and maintain joint reduction. However, luxations can be managed successfully without external coaptation, given the high complication rates that tend to occur with bandaging. Patients should be monitored closely for clinical signs of reluxation, including lameness, hip pain, and reduced function.

Open reduction of hip luxations allows exploration of the joint, removal of hematoma and soft tissues entrapped within the acetabulum, and internal stabilization. Various techniques are used alone or in combination to stabilize the joint while the joint capsule and periarticular soft tissues heal. After open reduction and stabilization, the success rate is significantly greater than after closed reduction.

Techniques described for open reduction and stabilization are numerous, with the most commonly performed being a femoral head and neck excision arthroplasty, toggle rod, and total hip arthroplasty.

Postoperative care for most patients with hip luxation should include activity restriction for 4 to 6 weeks or longer to allow soft tissue healing. Serial radiographic evaluation of the joint is often warranted to confirm reduction, monitor for implant complications, and assess the development of osteoarthritis.

The prognosis after coxofemoral luxation is fair to excellent if reduction and stability are achieved soon after injury. A long-term study of 64 dogs treated for coxofemoral luxation using various techniques, including closed reduction and bandaging, extracapsular suture stabilization, toggle rod stabilization, DeVita pinning, and femoral head and neck excision arthroplasty, found that 62% showed no lameness while 20% were severely lame. Investigators also reported that the presence of concomitant injuries and treatment delayed for longer than three days did not result in a worse prognosis. Osteoarthritis of the hip joint progressed in 55% to 62% of patients after coxofemoral luxation and was more pronounced in heavier dogs.

Coxofemoral luxation is a common joint luxation in companion animals. Open and closed techniques can be utilized on an individual case basis. Long-term prognosis is often good for these patients, although owners should be warned about the possibility of long-term hip arthritis for their pets.