

Canine Hip Luxation

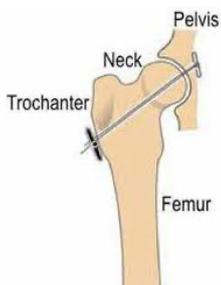
What is hip luxation?

The hip joint is a "ball and socket" type joint. Luxation (dislocation) of the hip joint is a relatively common injury in dogs following trauma such as road traffic accidents or traction injuries e.g., jumping a gate, momentarily trapping the paw and "hanging" from the limb. Typically, dogs with hip luxation stand with the leg rotated and are not willing to weight bear at all. If seen soon after injury it may be possible to relocate the femoral head back into the acetabulum (socket) manually under anaesthesia (closed reduction); however, this is not always possible because of tissue trapped between the acetabulum and femoral head. Following closed reduction, a sling (Ehmer) is placed to maintain reduction (keep the ball in the socket). This usually needs to be maintained for 10 to 14 days during which time the patient must be strictly confined. Once the sling is removed it is important to continue strict confinement as the joint is still very weak and can easily dislocate again. Closed reduction may be successful in up to 50 per cent of cases, however, the correct application of an Ehmer sling is technically challenging and complication rates are high; sling slippage can cause devastating constriction necessitating limb amputation.

If the hip is not able to be reduced or suffers re-luxation, open surgery is indicated to reduce and maintain the femoral head in place. The most common techniques are the toggle pin technique and the iliofemoral suture; in some cases, these techniques may be combined for a more robust repair. The femoral head (ball) can displace in different directions. This and the degree of damage to the joint capsule may influence the choice of surgery performed.

Treatment options

Toggle-pin



The Toggle-pin technique creates an artificial hip ligament by using a toggle placed through a small hole drilled in the acetabulum to anchor suture material which then passes through a bone tunnel in the femoral head. The success rate is high providing appropriate exercise restriction is enforced during the healing period after surgery. The suture material most commonly used for these procedures is heavy gauge nylon (85-88% success rate reported). A more recent innovation is the use of ultra-high molecular weight spun polyethylene (UHMWPE) as a prosthetic ligament, a stronger but



significantly more expensive material with much greater resistance to breaking and stretching leading to a reduced risk of relaxation (94-95% success rate reported).

Iliofemoral suture

The iliofemoral suture (or sutures) acts as an internal sling, securing the hip in the acetabulum in internal rotation. The suture is either placed through bone tunnels or secured with bone anchors. It should only be used as an isolated procedure for craniodorsal luxation (majority of cases) when tears in the joint capsule can be adequately sutured to provide additional support. Following surgery, an Ehmer sling is sometimes placed to provide additional support.



Salvage surgeries

An important aspect of the initial assessment is ruling out hip dysplasia. Dogs with hip dysplasia have shallow joints and are therefore much more likely to suffer re-luxation following both closed or open reduction. Dysplastic joints typically also have some degree of arthritis already present. Total hip replacement (THR) is a much better option for dogs with hip luxation and pre-existing hip dysplasia, although open reduction may still be considered in selected cases of **very mild** hip dysplasia. THR is also a good option for dogs in which the above reduction techniques have failed. If THR is cost-prohibitive femoral head and neck ostectomy (FHNO) may be used as a salvage procedure. FHNO involves removing the femoral head and neck; fibrosis occurs resulting in a "false" joint. Whilst some small dogs can do reasonably well with this procedure, there is significant variability in the outcome, particularly as body weight increases. The procedure should only be considered as a last resort.

Outcome and potential risks of surgery

Most dogs progress uneventfully following open hip reduction and eventually return to normal activities. Nevertheless, it may take several months before a dog has **fully** recovered. Dogs with pre-existing osteoarthritis, substantial muscle atrophy and/or dogs that have had multiple previous attempts at a closed hip reduction (or a previous surgery) will be expected to progress more slowly. Dogs with nontraumatic, low-impact luxations are at a higher risk for relaxation. As with any surgery, complications may arise and are detailed below:

- Infection is an uncommon complication as strict sterile technique is used during the surgery and antibiotics are administered during and after the procedure, although there is some increase in infection risk with braided UHMWPE suture. Should an infection occur, early detection and treatment may result in rapid resolution, although if bacteria colonise the UHMWPE braided suture, removal may be required.
- Excessive early activity may increase the risk of the suture stretching or breaking resulting in relaxation.
- Even after the initial period of strict confinement (typically the first six to eight weeks) it is still important to have a controlled, gradual increase in activity, like human patients undergoing rehabilitation following joint surgery. The muscles around the hip contribute significantly to overall hip stability and may be atrophied; it may take four to six months to regain lost muscle mass. If activity in dogs is increased too quickly after surgery spraining/straining of joint structures may occur, or even relaxation of the hip.
- If the hip joint has been luxated for some time or if there have been repeated attempts at closed (manual) reduction, significant additional joint injury may have occurred; this inevitably results in the development of more significant osteoarthritis.
- Hip luxation causes damage to the joint and arthritis will always develop and progress to some degree. Persistent lameness may be a feature in up to a third of cases due to arthritis that has developed in the joint, although a significant portion of these cases are likely to have underlying issues such as hip dysplasia, or significant damage to the cartilage of the joint from the initial injury or attempted reduction.

Postoperative care

A pad may be covering the wound at the time of discharge from the hospital. This can be removed after several days, or immediately if soiled. Medications e.g., Pain killers will be dispensed. Ice packs may also be helpful in the days following surgery to reduce swelling and improve comfort.

Your dog should be kept strictly confined to **eliminate running and jumping** for the first 6 to 8 weeks: a single room with non-slip flooring and no furniture may be sufficient, however, a large cage is typically advisable. Short leash walks in the garden (a few minutes four to six times daily) are recommended initially to allow toileting.

- Three weeks following surgery: commence lead walking for 5 minutes at a time, two to three times daily. Always use a **short** lead.
- Four weeks following surgery: increase lead walking to 10 minutes at a time, two to three times daily.
- Five weeks following surgery: increase lead walking to 15 minutes at a time, two to three times daily.
- Six weeks following surgery: increase lead walking to 20 minutes at a time, two to three times daily.

Maintain confinement **at all other times**; lead activity as listed above must be strictly controlled; maintain a short lead at all times (< 1metre). Running, jumping and playing should be avoided for **at least** 8 weeks.

Declaration:

I have read the preceding information and am satisfied I have a sufficient understanding of open hip reduction/stabilisation surgery, including potential complications that may occur and requirements for aftercare following surgery. I hereby consent for my dog to undergo hip surgery.

Owner's name:

Dog's Name:

Owner's signature:

Date: