Triple Pelvic Osteotomy

Triple pelvic osteotomy means cutting the pelvis in three places. Osteotomies, or cuts, are performed to allow rotation of the acetabulum into a better position over the femoral head. Thus, the femoral head is "captured" within the acetabulum to stabilize the hip joint. A stainless steel plate specifically designed for this procedure holds the repositioned acetabulum while the osteotomies heal.

Why Perform A Triple Pelvic Osteotomy?

In puppies, the joint instability associated with hip dysplasia is painful and disrupts normal development of the hip joint. A triple pelvic osteotomy is performed to relieve pain, restore function, and stabilize the hip joint so it will develop more normally. Studies in humans and in dogs show that if the abnormal weight-bearing forces across the joint are corrected early in the course of hip dysplasia, a more "normal" articulation will develop. It is important to realize that the objective is to stabilize the hip joint to prevent the debilitating arthritis of chronic dysplasia. The emphasis must be on early detection and intervention before severe joint damage occurs.

Is Your Dog A Candidate For A Triple Pelvic Osteotomy?

A triple pelvic osteotomy must be performed before arthritic changes become too advanced. Ideal candidates are usually 5 to 8 months of age. Puppies of susceptible breeds should be evaluated by their veterinarian by 6 months of age. Many 8-12 month old dogs are still candidates, but most dogs older than 12 months of age are not. Occasionally, dogs less than 8 months old are not candidates if their hip dysplasia is severe or the hip is more than 75% subluxated (out of the socket). Some dogs may be a candidate in one hip but not the other. The most important criteria for candidate selection is hip palpation under general anesthesia. Properly positioned radiographs taken under anesthesia are also mandatory. Definitive patient selection and surgical planning (i.e., the number of degrees the acetabulum will be rotated) are based on hip palpation by the surgeon immediately prior to surgery. If both hips require reconstruction, surgery is performed on the most severely affected side first. The second side is done 2 to 6 weeks later.

What Do Dogs Experience To Get A Triple Pelvic Osteotomy?

The surgery takes approximately 90 minutes. Isoflurane general anesthesia is used. Vital parameters, such as heart rate, heart rhythm, tissue perfusion, respiratory rate and pattern, temperature and blood pressure are continuously monitored. Detailed attention is paid to preoperative preparation of the patient, instrument preparation, aseptic technique, and environment control in the operating room. Pain medication is administered postoperatively and maintained as long as needed. The patient is hospitalized with 24-hour patient care. The dogs routinely support some weight on the leg immediately postoperatively. They are generally released from the hospital one or two days following surgery.
What Can I Expect After The Operation?

Most dogs walk on their newly positioned hip joint immediately after surgery. Patients should remain inactive for 6 weeks postoperatively. They should remain indoors, but allowed outside on a leash to eliminate. Short leash walks are allowed after 3 weeks. If necessary, tranquilizers are prescribed. Gradual return to normal activity is allowed between 6 and 8 weeks postoperatively.

Most dogs show a significant improvement in attitude, personality, and activity levels. In instances of severe dysplasia, marked improvement in walking, sitting, climbing stairs, standing, running, getting into the car, playing, and performance can be expected. Most dogs lead a normal, active life following TPO. Most dogs will start to bear a small amount of weight on the limb within a couple of days after the surgery. By 6 to 8 weeks the lameness should be dramatically improved, and by 3 to 4 months after surgery the pet should be using the operated limb(s) very well.

In general, about 90% of the dogs having the TPO surgery will be greatly improved, if not normal. Some mild arthritic changes can develop with time, but this usually does not cause significant pain to the pet.

Full recovery may take as long as 6 to 8 months. Many animals may benefit from the use of a chondroitin sulfate-glucosamine combination joint supplement like Dasuquin or Cosequin DS.

What Are The Risks and Complications?

The incidence of complications is very low, but risks exist just as they would for surgery on people. Complications from infection, technical problems, and anesthesia can never be totally eliminated. Extreme precautions to minimize infection and anesthesia problems are taken. With owner and patient compliance, complications rarely occur. Even though rare, anesthetic death can occur. With the use of modern anesthetic protocols and extensive monitoring devices (blood pressure, EKG, pulse oximetry, temperature, inspiratory and expiratory carbon dioxide levels, and respiration rate), the risk of problems with anesthesia is minimal.

Infection is also an unusual complication as strict sterile technique is used during the surgery and antibiotics are administered during surgery.

Excessive activity or exercise within the first 2 months can also lead to complications. The screws and plate that are used to hold the rotated pelvic bone in place could come loose or even break. This is not a concern once the bone has healed.

The sciatic nerve which lies on the inner side of the pelvic bone could become bruised or damaged, which could result in loss of function of the limb. This is an unusual complication and if it does occur is usually temporary. Obstruction of the urethra (tube leading from bladder) has been reported in the literature, but this is rare.

Another complication could be severe progression of hip arthritis. In the event that this occurs and your pet is still painful in the joints, total hip replacement may be needed. Some arthritis will develop in the hip joint, but usually does not cause clinical lameness/stiffness. Development of severe arthritis that causes profound lameness is uncommon.
When Should The Surgery Be Performed?

Surgery options must be considered as soon as early hip dysplasia is detected. Unless dysplasia is exceptionally severe, patients are allowed to reach an age of 6 months to improve bone quality (young puppies have very soft bone). It is important to realize that some patients are candidates at age 6 or 7 months, but may not be at age 9 or 10 months due to the advancement of the dysplastic process. In general, surgery should be performed as early as possible.

How Do We Get Started?

Have your regular veterinarian call me to schedule a consultation and examination of your dog. If available, have the radiographs and copies of recent lab work performed by your veterinarian. It is important that the skin is healthy before surgery. If superficial skin infection is present, treatment may be required before surgery can be performed.

The surgeon will perform a complete orthopedic and neurologic evaluation to confirm the diagnosis and to make sure other less common conditions are not present. Radiographs (if available) will be reviewed. We maintain a complete inventory of left and right TPO plates in all available degrees of rotation so the hip evaluation and surgery can be performed during the same anesthetic procedure if desired or required. General anesthesia is required, so food should be withheld for 12 hours prior to the appointment.