

Purpose of Procedure

Arthrodesis is the surgical fusion of a joint. With the exception of the hip, all major joints of the dog and cat can be fused. Commonly fused joints include the carpus (wrist), hock (ankle), and elbow. Less commonly fused joints include the stifle (knee) and shoulder. Other joints that are occasionally fused are the joints of the paw and the spine.

Arthrodesis results in loss of the function of the joint, but its primary goal is elimination of joint pain that is often severe and untreatable by other methods. Fusion of the carpus or hock usually has a minimal impact on overall limb function. Fusion of the elbow, shoulder, or knee results in significant changes in limb function.

Arthrodesis is indicated for treatment of joint injuries or disorders that cannot be controlled by other methods and are expected to lead to irreversible joint injury or osteoarthritis (degenerative joint disease).

Description of Technique

When arthrodesis of a joint is performed, any remaining cartilage in the joint is surgically removed, a bone graft is placed in the joint space, and the joint is secured with orthopedic devices (typically plates and screws or external fixators) at a functional angle until the bones have fused.

Preparation of Animal

Radiographs (x-rays) of the limb and routine laboratory tests are usually recommended initially to further define the nature and extent of the joint problem and identify anesthetic risks,

such as liver or kidney dysfunction. Other diagnostic tests are based on the suspected underlying condition or cause of the lameness. If trauma is suspected, chest x-rays are taken to identify risk factors for anesthesia, such as pulmonary contusions (lung bruising) or diaphragmatic hernia. An electrocardiogram may also be performed to identify abnormal heart rhythms if trauma is suspected.

Potential Complications

In addition to anesthetic risks, complications of arthrodesis include failure of the joint to fuse, breakage of the surgical implants used to hold the bones in place, failure of the incision to heal or dehiscence (premature opening) of the incision, infection, nerve damage, and improper alignment of the leg. Rare complications include chronic infections that develop in association with the surgical implants, cancer at the surgical site, and lameness in cold weather from the effects of cold on the surgical implants.

Postoperative/Follow-up Care

Bandage changes are performed as needed, depending on the type of orthopedic device that was used and the nature of the injury or disease. X-rays are taken to assess healing at the arthrodesis site and are repeated every 4-6 weeks until healing is complete. Surgical implants usually are removed only if problems associated with the implants occur.