




Plates, Screws, Wires, Nails ... This Ain't Your Grandpa's Toolbox

 By Todd Riecks, Diplomate, American College of Veterinary Surgeons
Colorado Canine Orthopedics at the Veterinary Specialty Center

Of all the pet owners out there, there are very few of us that thought of unplanned medical events at the time we purchased/adopted our pet. Such events can range from serious systemic illness, to cancer, to trauma-induced crisis. This article focuses on trauma and, more specifically, the broken bones that can result. There are many other serious issues that can occur concurrently from trauma, though they are assumed to be noncritical for the purposes of this discussion.

Enter the world of orthopedic surgery—surgery that deals with the skeletal system and its associated muscles, ligaments, tendons and joints. The good news is that orthopedic surgical procedures yield some of the most rewarding results in veterinary medicine. Today's advances in veterinary research and practice have made concerns such as anesthesia and pain control, minimal.

Trauma as a cause for most fractures does happen at variable degrees. It can be as dramatic as a motor vehicle accident or gun shot wound, or something as simple as jumping off the couch. The key is that a column of bone is acted upon by an abnormal force that causes failure of its anatomical integrity. The goal of repair is to immobilize the fracture with various implant choices allowing return of limb function.

With this ultimate goal in mind, choice of repair depends on numerous factors, and includes, but is not limited to the following: location of fracture, fracture configuration, breed of animal, age, temperament, instrumentation, owner compliance, financial constraints and concomitant injuries. Reduction (apposition and alignment) and immobilization of major fracture fragments is critical for healing to proceed.

The ideal toolbox would contain all of the following choices for fracture repair: a variety of bone plates, intramedullary pins, wire and interlocking nails, external fixation system (linear and ring with motors), screws/washers, drills and pneumatic saws. Indeed, it sounds like we could build the Taj Majal, and carpentry experience does help with operating many of the tools. Important point: although many different approaches to the same fracture can be employed, there is usually an *ideal* repair, very dependent on having the right tools and knowing how to use them.

After the surgery has been completed, it now becomes the owner's responsibility to play a large role in ensuring success. The following is an example of standard postoperative fracture repair instructions: "Strict rest for 8 weeks – outside on leash only for the purposes of urinations/bowel movements only, no running/jumping/playing and confinement to cage/crate/small room when unable to be supervised." We orthopedic surgeons do understand that this is a tall order for a 2-year-old, happy, too-active Labrador; however, following these instructions is imperative for successful healing, since the role of



Interlocking Intramedullary Nail and Cerclage Wire

orthopedic implants is for "temporary immobilization."

Appreciate what happens when one repeatedly bends a wire hanger back and forth at the same spot, it eventually breaks. The same cyclical stress and other stresses are placed on implants during the healing process and there is a risk of implant failure or breakage prior to complete union of bone. However, this risk is low and minimized when there is complete owner compliance with instructions.

If you do find yourself in a trauma situation with your beloved pet, keep in mind the ultimate result is most often successful, though strict rehabilitation guidelines will be ordered. Remember, from "Buddy's" point of view, once he catches his first ball following the rehabilitation period all of the previous eight weeks will be forgotten. 🐾



Severely comminuted mid-diaphyseal tibia/fibula fracture

Colorado Canine Orthopedics
5520 North Nevada Ave., Ste. 100
Colorado Springs, CO 80918
(719) 264-6666
www.CanineOrtho.com

Dr. Todd Riecks

