Surgical Intervention for Treatment of Joint Disease

Surgical intervention for treatment of joint disease is often aimed at prevention or mitigating progression of articular insult. This often takes the form of removal of osteochondral fragments, debridement of disrupted cartilage, accurate reduction and stabilization of articular fractures and lavage of inflammatory mediators present in the joint environment. Other times, surgical management of these conditions is aimed at alleviating pain and discomfort that have resulted from arthritic conditions. These efforts often occur in the form of surgical arthrodesis or facilitated ankylosis to expedite the process of boney fusion and return to function or comfortable existence.

Preventative surgical measures are generally performed via arthroscopy. The minimal invasive nature of the procedure decreases complication rates, shortens healing times and today’s equipment permit visual acuity superior to earlier technologies. While impossible to characterize a long list of amenable conditions in the scope of this presentation, general examples of commonly occurring conditions will be discussed.

**Osteochondritis dissicans and osteochondrosis type lesions**

Developmental joint disorders such as OCD type lesions are common occurrence in equine practice. Fragments often serve as an inflammatory nidus and may result in mechanical injury as well in diarthrodial joints. Removal and debridement is often curative if performed early and prior to development of irreversible inflammation.

**Intra-articular fractures**

Traumatic fractures involving articular spaces can often lead to degenerative arthropathy if not appropriately addressed early. Osteochondral fragments such as those commonly encountered in the dorsal aspect of the carpus or fetlock as result of repeated compressive trauma or hyperextension injury are often best removed before irreversible injury develops in the joint. Larger fragments such as slab type fractures of the 3rd carpal bone often are best addressed by lag screw fixation in concert with arthroscopy. Other examples include digital fractures that have an articular component, these should be repaired with careful consideration to as “perfect” as possible articular reconstruction to minimize future development of OA.

**Distal tarsal joints**

The tarsometatarsal and distal intertarsal joints are common sites for development of osteoarthritis. With natural disease progression, ankylosis can result in these “low motion” articulations most often this process is protracted and unpredictable as to the length of time that it
will take for the horse to become comfortable from natural progression of degeneration. Facilitated ankylosis is of benefit in many of these cases to expedite the process and permit the chance of earlier return to function. Several techniques have been described to accomplish this including: drilling of the joint interface, application of surgical laser energy to the joint interface, plate fixation, IA injection of ethanol or moniodoacetate.

**Proximal interphalangeal joint**

The pastern joint is another relatively common site for development of OA, this “low motion” articulation lends itself to stabilization by arthrodesis. Surgical fusion of this joint is typically accomplished by means of curettage of the articular surface, forage of the subchondral bone plate and internal fixation. This technique is oftentimes useful in restoration of function and return to athletic use.

**High-motion joint arthrodesis**

Surgical fusion of higher motion joints of the horse can be performed in effort to restore comfort and salvage the horse for non-athletic use. The reduction in functionality of the joint and mechanical limitations to the involved limb is usually limiting in terms of the activities that can be accomplished following the procedure. However, salvage for companionship or breeding purposes is entirely possible. Examples of these high-motion joints that can be fused include: the distal interphalangeal (coffin) joint, metacarpophalangeal and metatarsophalangeal joints, joints of the carpus (partial or pan-arthrodesis) and the scapulohumeral joint.

As with any progressive degenerative disease process, prevention and minimization of the rate of progress is ideal. However, it is valuable to know that surgical options although limited due to the size and weight of the patient do exist and can be helpful in restoration of the use and or comfort of the horse.