Septic arthritis

Septic arthritis is frequent in cattle. Not all cattle suffering from a septic arthritis need to be treated by arthroscopy. Most of the time, if the condition is treated early, a combination of broad spectrum antibiotic, NSAID and joint lavage (needle) is sufficient. However, in subacute cases, the joint fills rapidly with fibrin and needle lavage becomes ineffective to clean the articulation from the infection. In those cases, an arthrotomy is usually performed. It allows removal of fibrin clots and large volume lavage. However, this technique does not allow to visualize and to flush all the joint cul-de-sac. Arthroscopy allows a more thorough flush of the entire joint and the removal of most, if not all, fibrin clots. The arthroscopic portals are left to heal by second intention. Usually, the joint drains for several days. Rarely does the joint need to be flushed again after an arthroscopy. Arthrotomy has not been compared to arthroscopy in cattle. However, our clinical impression is that cattle recover faster from subacute or chronic septic arthritis after arthroscopy compared to arthrotomy. The main disadvantage of arthroscopy is the cost associated with general anesthesia. On hind limbs of younger cattle, arthroscopy can be performed under sedation and epidural anesthesia.

Osteochondrosis

Osteochondritis dissecans and subchondral bone cysts are uncommon in cattle. They are usually found on fast growing cattle. They may cause lameness and joint effusion. Most of the time, the lesions involve the stifle. In carpus and tarsus, osteochondrosis can be found. However, the lesions in those joints are more diffuse. These types of lesions are often categorized under degenerative joint disease. In those cases, arthroscopy is used as a diagnostic (prognosis) and therapeutic tool (mild debridement and flush of the articulation). Subchondral bone cyst has been described in the coffin joint. However, a good prognosis is associated with joint resection. Arthroscopy can be used to debride the cyst; however it can sometimes be difficult to access the lesion.

Ligament and meniscus injury of the stifle

Arthroscopy can be used to diagnose a cruciate ligament rupture in cattle when the radiographs are inconclusive. Only a mild portion of the meniscus can be seen through a cranial approach. Diagnosis of meniscal injury is therefore difficult to make with arthroscopy alone.

Arthroscopic technique

Stifle: The cranial approach of the stifle is ideal to evaluate all 3 articulations. With the leg in extension, the scope is directed beneath the patella from a point midway between the tibial plateau and the distal end of the patella, between the median and the lateral patellar ligament. To visualize the femorotibial joint, the stifle is flexed (60 degrees) and the scope is directed toward the medial femoral condyle (medial femorotibial joint) from the same skin incision than the one used to evaluate the femoropatellar joint. Another skin incision is created, at the same level than the previous one, but between the median and the medial patellar ligament. The scope is then directed toward the lateral femoral condyle (lateral femorotibial joint).
**Tibio-tarsal:** The dorsal approach is very similar than what has been described in equine. The scope is first placed in the dorso-medial pouch taking care to avoid the saphenous vein. Manipulation of the limb helps to pass under the extensor tendon to visualize the lateral side of the joint. Both plantar pouches can be visualized from one approach (medial or lateral). It could be difficult to penetrate in the plantar pouches without appropriate distension.

**Fetlock:** Through one dorsal and one palmar/plantar both sides of the joint can be evaluated. From the dorsal approach, it might be necessary to perforate the thin membrane separating the lateral and the medial compartment. The first phalanges are difficult to visualize from a dorsal approach. Like in equine, the palmar/plantar pouch is large and easy to penetrate. It is recommended to penetrate this pouch at the most proximal point when the joint is distended.

**Radio-carpal and intercarpal:** It is recommended to penetrate both joints from a dorso-medial approach. The lateral pouch of the joint is very small and squeezed between the common digital extensor and the extensor carpi-radialis in cattle. The portal is placed just medial to the extensor carpi-radialis which is almost on midline. Care must be taken to avoid damaging the cephalic vein which courses on the medial aspect of the joint. The skin incision should be performed prior to joint distension.