FOAL SEPTIC ARTHRITIS IN THE FIELD

PROF. DR. FREDERIK PILLE
VAKGROEP HEELKUNDE EN ANESTHESIE, FACULTEIT DIERGENEESKUNDE UGENT,
SALISBURYLAAN 133, 9820 MERELBEKE, BELGIUM

Foal septic arthritis is a serious condition that needs prompt diagnosis and sustained treatment. Whenever a foal presents with lameness and joint distension, the presence of infection should be ruled out. Septic arthritis is most often seen in very young foals but can also affect foals of a few months old.

Most important for diagnosing septic arthritis is synoviocentesis and synovial fluid analysis. Infected synovial fluid typically has white cell counts above 30.000 / microL with more than 90% neutrophils and a total protein content that exceeds 40 g/L. With more chronic infection, white cell counts may be less whereas the total protein content usually raises towards 60 or 70 g/L. Some concern exists whether the automated systems in commercial labs are validated for synovial fluid analysis.

Whenever infection is likely based on the clinical picture and/or the analysis of the afore mentioned parameters, bacterial culture of the synovial fluid should be performed. The use of blood culture medium is essential for successful isolation of bacteria from synovial fluid. Ideally, the synovial fluid sample is inoculated on the spot into the blood culture bottle and transported as such to the lab. The most important reason to isolate bacteria from synovial fluid is however not the confirmation of infection but the possibility of sensitivity testing and customized antibiotic therapy.

Septic joints should be radiographically screened for subchondral bone involvement. Both cases with and without involvement of the subchondral bone exist. In contrast to adult horses, subchondral bone lesions may develop over a few days to 1 week. Therefore, a close radiographic follow up of foals with septic arthritis is mandatory, especially in cases that seem refractory to therapy.

Since failure of passive transfer of immunity is one of the most important reasons for septic (poly)arthritis in foals, levels of IgG and/or gamma-globulins should be evaluated as a standard in these foals. The SNAP Foal IgG Test gives fast results but, in diseased foals, may overestimate the IgG levels. Therefore, in foals with septic arthritis the results of the SNAP Foal Test should always be confirmed by protein electrophoresis.

Other parameters that are evaluated in the blood of septic arthritis foals are total and differential white cell counts for the detection of sepsis, and Serum Amyloid A (SAA) levels. Foals with septic arthritis typically present with (very) high SAA levels whilst return to baseline of SAA concentrations suggest therapeutic success; i.e. resolution of infection. Hence, monitoring of SAA levels in foals treated for musculoskeletal infections seems a promising aid in determining the duration of antibiotic therapy and the need for repeated lavage and / or additional debridement of bone lesions.

Treatment of septic arthritis in foals relies most importantly on through-and-through lavage of the infected joint(s), debridement of eventual subchondral bone lesions, appropriate local and systemic antibiotic therapy and administration of plasma in case of hypogammaglobulinemia. Joint lavage is routinely performed using large bore needles or arthroscopically. The latter is certainly indicated when debridement of subchondral bone lesions is required. Following the first lavage, synovial fluid parameters are evaluated on a daily base. As a rule of a thumb, lavage is repeated when synovial fluid white cell counts don’t drop rapidly below 15.000 cells / microL (and total protein levels further increase).

Antibiotics are injected into the joint at the end of lavage and for 3 to 5 more days thereafter. Routinely, amikacin (500 mg) and ceftiofur (250-500 mg) are used. Depending on the results of sensitivity testing, rifampicin (250-500 mg) may be indicated.

Systemically, antibiotic therapy in foals with septic arthritis is routinely started with a combination of amikacin (15-25 mg/kg s.i.d.) and ceftiofur (6,6 mg/kg b.i.d.) intravenously. However, permanent catheters are not kept easily in place while with daily injections foals will rapidly become reluctant. Oral antibiotics may consist of doxycycline (10 mg/kg b.i.d.), trimethoprim-sulfa (30 mg/kg b.i.d.) or amoxicillin-clavulanic acid (10-30 mg/kg b.i.d.). Depending on the results of sensitivity testing and/or in refractory cases, marbofloxacine may be indicated at ad dose of 2 mg/kg s.i.d. IV, IM or PO.

Supportive therapy in foals with septic arthritis consists of NSAIDs (preferably selective COX-2 inhibitors), gastroprotectiva such as omeprazole and probiotics (yeasts).

In a retrospective study from our department, it was found that the prognosis for septic arthritis in foals is guarded. Approximately 60% of the foals in that study survived without residual lameness. Successful outcome tended to be related to mono-articular involvement and sustained therapy.

Related studies from the author's research group

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