

# Bacterial Culture Results of Septic Arthritis in Cattle: A Retrospective Study of 172 Cases

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## Introduction

Septic arthritis is a common cause of lameness in cattle. Affected animals are very lame and their productive life seriously compromised. Treatment with systemic antibiotics should be started rapidly to decrease the chance of permanent lesions affecting the animal. Because bacteriological results are rarely available before 48 to 72 hours after specimen submission, the knowledge of commonly isolated bacteria will help the clinician to start the appropriate antibiotic therapy until further results. The objectives of this study were to estimate the frequency of positive bacterial culture of clinically affected cattle with septic arthritis and to describe the type of bacteria most commonly isolated.

## Materials and Methods

Medical records from all cattle diagnosed with septic arthritis admitted at the Centre Hospitalier Universitaire Vétérinaire de St-Hyacinthe from 1983 to 2000 were evaluated. Inclusion criteria in this study were based on cytologic findings and bacterial culture of the synovial fluid as well as radiographic examination of the affected joint. Anaerobic culture was performed only when requested by the clinician. Chi-square for independence was used to evaluate the relation between groups of age and culture results. A logistic regression was used ( $P < 0.05$ ) to evaluate influence of age, joint infected, duration of clinical signs or administration of antibiotics before sampling on culture results.

## Results

One hundred seventy-two animals were included in the study (153 dairy and 19 beef cattle). Ninety-one animals were less than six months of age. Carpal and stifle joints were the most frequently affected in young animals, whereas fetlock and tarsal joints were mostly infected in adults. Bacteriological cultures were positive in 60% of cases. One type of bacteria was isolated in 47% of the cases, 9% had two types of bacteria isolated, and three or more types of bacteria were found in 4% of cases. Age, joint, duration of clinical signs or use of antibiotics before sampling did not influence the culture result. *Arcanobacterium pyogenes* was the most common bacteria isolated (35% in young animals and 48% in adults). Streptococci were isolated in 14% of cases, staphylococci in 12%, enterobacteriaceae in 11%, anaerobacteriaceae in 11%, mycoplasmas in 4% and pasteurellaceae in 4%.

## Conclusion

In adult cattle, it appears important to use an antimicrobial drug effective against *Arcanobacterium pyogenes*, such as one in the beta lactam family. In young animals, an antibiotic effective against Gram positive and Gram negative organisms should be used. However, knowing the primary cause of haematogenous spread could help to determinate with more precision which organisms are involved and therefore exactly which antibiotics to use. Anaerobacteria and mycoplasma were probably underestimated in this study. To increase the rate of positive culture, sampling techniques should be standardized.