Septic arthritis in adult horses

B. Carstanjen¹², S. Boehart¹, M. Cislakova¹

¹ Klinik für Pferde, Allgemeine Chirurgie und Radiologie, Faculty of Veterinary Medicine, Freie Universität Berlin, Oertzenweg 19b, 14163 Berlin, Germany
² Department for Large Animal Diseases, Faculty of Veterinary Medicine, Warsaw University of Life Sciences, Nowoursynowska 100, 02-786 Warsaw, Poland

Abstract

Septic arthritis in horses is a serious disease which can become life-threatening. In case the infection can be eliminated before irreversible joint damage occurs, complete recovery is possible. This article gives an overview of the literature concerning etiology, diagnosis and strategies of therapy in cases of septic arthritis in adult horses, with special reference to novel options of treatment.

Key words: Septic arthritis, horse, joint disease, articulation.

Definition

Septic arthritis is an inflammatory condition of a joint caused by microorganisms, characterized by the cardinal symptoms of inflammation (rubor, calor, tumor, dolor, functio laesa). The process must be considered multifactorial, since both host (age, immune status) and microorganism (number of colony forming units, virulence) contribute to the severity of the symptoms and choosing a proper treatment protocol influences the success of therapy and longterm prognosis (Bertone 1996).

Etiology of septic arthritis

The first step in the etiology of septic arthritis in adult horses often is a direct contamination with microorganisms from the skin or the environment, e.g. Gram-positive, Gram-negative and/or anaerobe microorganisms through wounds or manipulation, e.g. intra-articular injections or surgical procedures (Lapointe et al. 1992), with an incidence of 0.9% postoperatively after arthroscopy reported for one clinic (Olds et al. 2006). Pathways of microbial entry into the joint are illustrated in Fig 1. Following therapeutic intra-articular injections Staphylococcus aureus regularly can be found (Schneider et al. 1992a,b, Meijer et al. 2000). Some intra-articularly applied therapeutic agents, such as corticosteroids (Tulamo et al. 1989a,b) and polysulfated glycosaminoglycans (Bertone 1996), are known to cause a higher potential risk of septic arthritis (Gustafson et al. 1989). Contused wounds and abrasions near joints can lead to infections of synovial structures that develop within a few days time. In this case, the organisms from the infected soft tissue move through the damaged, i.e. necrotic, traumatized joint capsule into the joint and a “protracted infection” develops (Schneider 1998a,b). Microbes commonly associated with wounds are E. coli, Pseudomonas spp. and Proteus spp., all of which can cause secondary septic arthritis (Schneider 1998a,b).

Clinical signs and diagnosis

Anamnesis

The history of every horse with septic arthritis should be taken with care, since knowledge of previous illness, intra-articular injections, trauma or immunosuppression can provide useful information.