Use of a parathyroid hormone peptide (PTH1-34)-enriched fibrin hydrogel for the treatment of subchondral cystic lesions in horses

Summary / Zusammenfassung
The terms subchondral cystic lesion (SCL) and subchondral bone cyst (SBC) are synonymous and describe radiolucent areas in the subchondral bone that are in close association with the joint. The pathogenesis and aetiology of such lesions remain unclear; however, commonly accepted hypotheses include traumatic disruption of the cartilage and subchondral bone, osteochondrosis, subchondral bone damage or vascular disturbances in the subchondral bone and osteolytic activity with an increase in the concentrations of inflammatory mediators, such as prostaglandin E2 (PG E2) and interleukin 1 and 6 (IL 1 und 6). Subchondral cystic lesions occur most commonly in the medial condyle of the femur, followed by the fetlock. They may occur in the proximal phalanx, metacarpus, metatarsus and sesamoid bones. Treatment may be conservative, such as the intralesional injection of hyaluronic acid or a corticosteroid, or surgical, which includes curettage, forage, micropick and filling the lesion with various materials that have osteogenic, osteoinductive, osteoconductive or osteopromotive properties. The use of cancellous bone grafts, osteochondral grafts, tricalcium phosphate and different growth factors has also been recommended. Treatment of our patients is based on the hypothesis that PTH1-34 induces new bone formation and accelerates bone healing in surgically debrided SCLs by down-regulating cytokines and inflammatory mediators. It is expected that PTH1-34, bound to the structured hydrogel, would support early filling of the SCL with new bone, decrease bone inflammation and thus, be a considerable improvement of the current management regimes

Publications / Publikationen

Keywords / Suchbegriffe
Subchondral cyst lesion, horse, PTH, arthroscopy, joint disease

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