

# MANAGEMENT OF SUBCHONDRAL BONE CYSTS IN THE STIFLE

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**SUBCHONDRAL BONE CYSTS ARE A COMPONENT OF OSTEOCHONDROSIS OR OCD AND MOST FREQUENTLY FOUND IN THE STIFLE, FOLLOWED BY THE FETLOCK AND PASTEREN JOINTS.**

In yearling thoroughbreds, the prevalence of bone cysts in the stifle is estimated at approximately 3.5 per cent of horses. These lesions cause a weakening of the bone underneath the cartilage within the joint, releasing inflammatory cells and proteins.

They are a developmental condition in which a defect occurs during development of bone from the juvenile cartilage. Grouped with OCD lesions, bone cysts cause chronic inflammation of bone and joint resulting in lameness and a more rapid development of osteoarthritis. On radiographs of the stifle, these cysts are typically located in the medial femoral condyle.

#### HOW AND WHEN TO IDENTIFY A BONE CYSTS?

The exact cause of bone cysts is unknown, with complex mix of genetics, nutrition, and exercise all influencing factors.

Subchondral cysts lesions are almost always identified on radiographs from six months of age. Screening radiographs of yearling is recommended between nine and 12 months to identify OCD lesion and formulate a treatment plan. However, not all bone cysts cause lameness and many can go unnoticed for years, later being identified as

a cause of lameness.

Ultrasound can be a useful adjunctive method to identify the extent of the cartilage or soft tissue injury in the joint. In adult racehorses with lameness, these cysts may be occasionally identified using nuclear scintigraphy.

#### TYPES OF SUBCHONDRAL BONE CYSTS

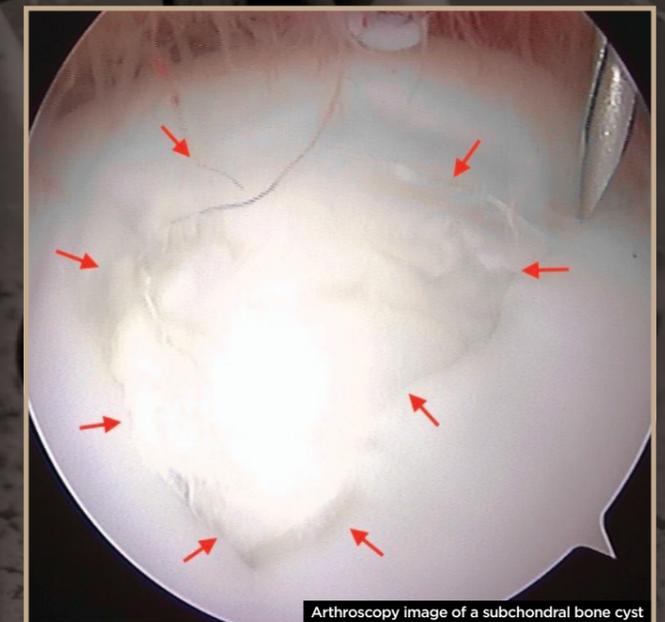
Bone cysts in the medial condyle of the stifle can be classed into four groups. Type 1 lesions are domed shaped, opening into the joint. Type 2 lesions extend into the condyle and may or may not show a communication with the joint. Type 3 lesions are flattening of the condyle without progression into the underlying bone. Type 4 lesions are isolated from the joint surface without obvious communication. All types of bone cysts can cause lameness.

#### WHAT TREATMENT OPTIONS ARE RECOMMENDED?

**SURGERY:** Surgical options grouped with arthroscopy are more frequently selected for Type 1 and 2 lesions, to examine the joint and associated soft tissues, as well as target the bone cyst directly. Subchondral bone cysts of the medial femoral condyle

have been shown to have a reduced prognosis when intra-articular ligament tears were also present.

Arthroscopic examination allows the cyst to be evaluated and any soft tissue damage treated. Once an assessment is made, treatment options such as a direct corticosteroid injection or surgical debridement can be performed. Aggressive surgical debridement with curettage and drilling of the cyst has fallen out of favour with surgeons due



to a reduction in long term soundness. Recently, the advent of trans-articular screw placement has been used with good success, stabilising the condyle and stimulating osteogenesis (new bone growth) in the cyst.

**MEDICAL TREATMENT:** Subchondral bone cysts secrete inflammatory proteins into the joint and medical treatment is directed towards reducing inflammation in the joint. Intra-articular corticosteroids

can be used for small flat bone Type 3 and 4 lesions, reducing inflammation an improving the joint health. In addition to corticosteroids, joint injections with autogenous protein solutions such as IRAP and ProStride® can provide a more potent and long-lasting effect. Regenerative therapy such as platelet rich plasma (PRP) and Stem Cells have also been used for intra-articular and intra-lesion treatment.

#### PROGNOSIS FOR SUBCHONDRAL BONE CYSTS

The prognosis for return to soundness following treatment of bone cysts ranges from 50 to 75 per cent. Surgical treatment has been associated with a trend to greater success with arthroscopy and condylar screw placement the current recommend procedure. Overall, there are multiple options for treatment of bone cysts and a variable success can be expected. □

**SCREENING RADIOGRAPHS OF YEARLING IS RECOMMENDED BETWEEN NINE AND 12 MONTHS TO IDENTIFY OCD LESION AND FORMULATE A TREATMENT PLAN**

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