

Calcification of articular cartilage in human osteoarthritis

Fuerst M, et al.

Arthritis Rheumatism 2009;60:2694–2703

Chondrocyte hypertrophy has been associated with osteoarthritis (OA) but chondrocalcinosis has been considered an irregular event and linked to calcium pyrophosphate dehydrate (CPPD) deposition. This prospective study on 120 patients with end stage OA undergoing total knee replacement were evaluated by conventional radiography, digital contact radiography (DCR), field emission scanning electron microscopy (FE-SEM) and synovial fluid analysis. Cartilage mineralization was correlated with scores of knee function, histology and in vitro analysis of chondrocyte hypertrophy. DCR revealed calcification in all cartilage specimens, its extent correlated with knee score but not age. Field scanning electron microscopy showed that the crystals were basic calcium phosphates (BCP) such as hydroxyapatite, tricalcium phosphate and octacalcium phosphate and were the most prominent minerals rather than CPPD. There was a strong correlation between the in vivo extent of hyaline cartilage mineralization and the ability of chondrocytes to produce BCPs in vitro. The authors conclude that mineralization of articular cartilage is an indissociable process of OA and does not characterize a specific subset of the disease. The authors believe that their findings emphasize the hypothesis that articular cartilage mineralization in OA and meniscal mineralization known as chondrocalcinosis are distinct processes.

Chondroblastoma of bone in a pediatric population

Sailhan F, et al.

JBJS (Am), 2009;91-2159–2168

The authors state there have been no previous published series of chondroblastoma confined to a pediatric population with the lesions diagnosed and treated while the patients had open physes. Epidemiologic characteristics and predictors of local recurrence are unknown. 87 children diagnosed with chondroblastoma between 1950 and 2005 managed in the departments of pediatric surgery affiliated with the French Pediatric Orthopedic Society constituted the retrospective study group. All children had open physal growth plates at the time of diagnosis and treatment. Lesions were defined as latent if confined to bone with a sclerotic rim, active lesions were confined to bone with an incomplete sclerotic rim and contained by reactive periosteal bone and aggressive lesions had a poorly defined edge and an extraosseous component not surrounded by periosteal bone. Histological analysis paid

special attention to the absence or presence of a cystic component. There were 53 boys and 34 girls with 12.5 years being the mean age of presentation. Symptoms were usually present for six months. In 59, the tumor was in the epiphysis, four in the metaphysis and two in the greater trochanter apophysis. The most common sites were proximal tibia (28%), proximal femur (26%), proximal humerus (22%), and distal femur (9%), tarsal bones (5%), distal tibia (3%) and pelvis (2%). There was one lesion each in the distal radius, proximal fibula, scapula and patella. 28% of the chondroblastomas had a secondary ABC at histology. In all but one of the 24 tested, S-100 protein was positive. There was a recurrence rate of 32%; highest at the proximal femur and tarsal bones, which sites also resulted in the worst functional outcomes. The mean time to recurrence was eleven months. There were no metastases.

Severe perioprothetic osteolytic lesions after the ankle evolutive system total ankle replacement

Koivu H, et al.

JBJS (Br) 2009;91-B 907–914

130 consecutive ankles replaced with an hydroxyapatite (HA) and titanium –HA_ coated ankle evolutive system showed radiographic osteolytic lesions in 37% and lesions larger than 10 cms in 21% of ankles. The authors state the pathogenesis for this degree of extensive osteolysis is unclear. Most patients were asymptomatic and at revision most implants were firmly fixed.

Differences in sonographic characteristics of the vastus medialis obliquus between patients with patellofemoral pain syndrome and healthy adults

Jan MH, et al.

Am J Sports Med (2009)

The role of the vastus medialis obliquus (VMO) in patellofemoral pain syndrome (PFPS) has been an orthopedic controversy. 54 patients with PFPS and 54 controls matched for age, gender, height, weight, were examined by ultrasound to determine the insertion level, fiber angle and volume of the VMO at its insertion. All three measures were significantly less or smaller in the symptomatic group. The study could not resolve whether the VMO measurement in the symptomatic patients was cause or effect.

Abstracted by: M. Sundaram, M.D.
February 2010