

Pain and pathophysiological features of arthrosis.

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Pain in the degenerated ankle joint is what brings the patient to the doctor. The ethiology is almost always of traumatic origin whether this comes from a fracture, ligaments ruptures, osteochondritis, or repeated unphysiological loadings. Radiographs can be used to confirm the diagnosis, and for technical considerations, but they do not say anything about the degree of pain.

Cartilage has no nerve supply. It is normally anticipated that when denuded bone ends touches each other loading pain will occur as the subchondral bone is rich with nerves (baroreceptors). Pain at rest is supposed to have a different ethiology coming reactions to osteonecrosis (bone marrow edema)

It is evidenced that the synovium has nerves that could possibly transfer pain. Swelling of the synovium leads to venous stasis, and the increased joint pressure is directly transferred to the subchondral bone where it causes relative hypoxia and decreased bone blood flow (1). A positive correlation between subchondral bone marrow pressure and pain has been established. (2). It has also been shown that increased joint pressure leads to relative hypoxia and acidity in both the joint and the subchondral bone (3).

Therefore pain could come from pressure, but also from metabolic sources (primary or secondary), and especially the change in pH could lead to further cartilage degeneration, more reaction from the synovium – a vicious circle.

The treatment is in early stages foremost medicamentation to control the synovium and the joint effusion. When this is not longer possible surgery is the option.

- 1. Gronlund J, Kofoed H, Svalastoga E. Effect of increased knee joint pressure on oxygen Tension and blood flow in subchondral bone. Acta Physiol Scand 1984; 121: 127-131**
- 2. Kofoed H. Positive correlation between osteoarthritis andkle pain and bone marrow pressure. J Rheumatol 1986; 13: 801-803**
- 3. Kofoed H. Synovitis caused hypoxia and acidity in synovial fluid and subchondral bone. Injury 1986; 17: 391-394**