



Degenerative Joint Disease

(Osteoarthritis)

Englisch

In Osteoarthritis the cartilage of a joint is damaged extensively. Knee- or hip-joints are most frequently afflicted, less frequently the ankle joints or joints of the upper extremities. Once the disease has started, it develops progressively. A vicious circle begins, when there is an imbalance between what a joint is able to endure and what it has to endure. A mechanical as well as a biochemical process leads to the destruction of cartilage cells. The latter cannot be regenerated, sometimes the damaged cartilage can be replaced by connective tissue cells of inferior quality.

which attack the very substance of the cartilage and destroy it.

How does one recognise Osteoarthritis?

Typical is sporadic pain in the particular joint. Often pain strikes when changing positions after a period of inactivity for instance getting up out of a low chair after sitting for a while or getting out of a car. Early symptoms can be observed while walking down a hill or a staircase as well as after longer periods of walking. There may also be a sort of deep or piercing pain while turning in bed during the night. This pain can become more or less permanent after a while and can get stronger during cold and damp temperatures.

How does one diagnose it

Since there are various other illnesses which can cause pain of the joint, a thorough examination by a physician is important. Usually there need to be x-rays made, but also laboratory tests, radiologic imaging and occasionally magnetic resonance imaging in complicated cases. The best verification can be made through an arthroscopy which normally is only done when there appears to be also a therapeutic reason, for instance meniscal injury.

What can I do against Osteoarthritis?

Physical therapy has a prominent position in the treatment of osteoarthritis, for instance the use of heat or cold as well as appropriate exercises, manual and occupational therapy, massage and electro-therapy. Physical therapy has the advantage that it can already be used as a preventive measure before the illness manifests itself. In any case physical therapy is an integral part of treatment throughout the illness, since the cartilage depends on joint movement for its existence, the goal for the patient must be to either regain mobility or stay mobile. The important principle is here: **Movement without too much pressure on the joint.** Ideally one would prefer sports like swimming or bicycle riding to jogging. Medication to relieve pain or lotions to apply to the affected joints can be used to help to restore mobility but should be stopped, if the pain is gone. There are various groups of drugs to be used: Most important are

Which Factors enhance Osteoarthritis?

There is a good chance to get osteoarthritis if one gets old enough. Old age is the biggest risk factor. Other risk factors are mechanical incongruity of the joint as for instance bow-legs or knock-knees favour the development of osteoarthritis in the knee. Or in hip dysplasia where there is a mechanical imbalance so that the pressure exerted on the joint becomes too strong. This happens also after injuries if the normal anatomical condition cannot be exactly regained. Additional factors are overweight, insufficient physical exercise as well as too much physical stress and varicose veins. The disease is usually found in hip and knee joints; less frequently in ankle and shoulder joints or in elbow or wrist joints. Osteoarthritis of the hand usually occurs in the middle or end joints of the fingers and the carpometacarpal joint of the thumb and about 95% of the afflicted are women.

How does Osteoarthritis develop?

The joint surface consists of cartilage which is nourished not through blood vessels, but exclusively through the fluid produced by the synovial membrane. This fluid acts like a lubricant in the movement of the joint. This movement is absolutely necessary so that the synovial membrane can do its job, that is provide nutrition for the cartilage and at the same time clear used materials from the cartilage cells. If the surface of the cartilage becomes defect because of an imbalance between load and loading capability, it can lead to an increase in synovial fluid, which in turn reduces the lubricant for the joint and therefore the nutrition of the cartilage. This causes a breakdown of cartilage cells. During this process certain components are released

the non-steroidal anti-inflammatory drugs (NSAIDs), since they have their effect in the particular location and not only centrally in the brain. But there are also side-effects, especially on the gastrointestinal tract. So if someone has a tendency towards ulcers or other gastric problems, one has to be careful. Sometimes one can avoid side effects by giving drugs with a retarding agent, that means that the drug releases its potent substances slowly over a longer period of time. The effect of these drugs is so good that one does not need to inject them but they can be taken in tablet form. If a patient does not tolerate these drugs, one could recommend medication that works centrally to alleviate pain. However it must be clear that no pain medication can heal osteoarthritis, but that it is taken to increase mobility of the joint. Pain medication should not be taken in order to manage larger pressure on the joint.

How about Drugs to build up the Cartilage?

In popular view gelatine is supposed to be able to reconstruct cartilage. Unfortunately this is not the case. There is no scientific evidence for any substance on the market that promises to either protect or build up articular cartilage. The only substance which is supposed to improve cartilage quality is hyaluronic acid. It is a component of the cartilage and is obtained from roosters. The substance **Hylan G-F 20**, which is known by the name **Synvisc**, does the same thing. If the illness is acute with extreme pain and perhaps an effusion of fluid in the joint, one can get an injection of corticosteroid into the joint. This can be very helpful, since cortisone helps to reduce the inflamed, swollen synovial membrane. One should evaluate the need for this injection however carefully, since it may cause some damage to the cartilage.

If nothing helps anymore – then surgery?

If the cause of the osteoarthritis is malalignment, early surgery in order to alter the stress of load-bearing parts

can save the joint and the patient can have many years of respite before having to have an artificial joint. These operations are often made in the hip- or knee-joint. Arthroscopy of the knee is often done either for diagnosis purposes or to “clean” the joint of cartilage fragments which might block movement or to loosen parts that are “stuck together”, or to stimulate the cartilage into a renewed growth process.

If the process of osteoarthritis is already far advanced, the only chance may be an artificial joint. During the last years surgery in this area has advanced to an enormous extent around the world. A couple of years ago one would recommend artificial joints only for patients above the age of 65, today many patients are well under 50. The operating techniques have been perfected and are standardised and the occurrence of complications is low. The correct date of surgery should be determined by the patient and his physician.

Surgery and then what?

One should plan about 2 – 3 weeks for a joint replacement with an added 3 – 5 weeks of intensive physical rehabilitation. Whether this takes place in the context of an outpatient physical treatment or in a rehabilitation clinic depends on several circumstances: Age and condition of the patient, whether there are other chronic illnesses present, whether the patient is cared for at home or lives alone, how far the physical therapist is from his home etc. Often the patient himself underestimates the every day problems that can occur right after surgery. Often it takes for instance 6 weeks before the patient is able to put full pressure on a new hip replacement.

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Herausgeber:
Deutsche Rheuma-Liga Bundesverband e.V.

1. Auflage 2002 – 5.000 Exemplare
Drucknummer: MB 1.3/BV/04/2002

