Total endoprosthesis of the hip joint

A total hip arthroplasty is an artificial replacement of the hip joint comprising **the femoral head** and **acetabulum** .

Reasons for compensation

Total hip arthroplasty is indicated if conservative treatment fails. The most common reason for undergoing surgery is advanced arthrosis causing pain and limitation of mobility. Another common cause is a fracture of the neck of the femur in the elderly population and in an inappropriate (adduction) position. Furthermore, the indication can be, for example, congenital deformity, tumor involvement of the area, Perthes disease or reimplantation of the previous replacement.

Types of implants

The basic division of implants is **cemented replacement** and **non-cemented replacement** , depending on whether bone cement (polymethyl methacrylate) is used to fix them. The so-called a **hybrid replacement** combines the previous two types, with only the head of the femur fixed using bone cement.

The cemented replacement has a smooth surface and its advantage is the possibility of full weight bearing after surgery. Any replacement after wear is, however, technically demanding and tiring for the operator. At the same time, the possibility of fatigue of the connection of cement and prosthesis at very high loads is a disadvantage. It follows that cemented replacements are suitable for **older patients** who benefit from earlier rehabilitation and do not expect replacement of the endoprosthesis, as well as its excessive loading.

The uncemented replacement is rough on the surface, which stimulates ossification around the implant and thus gradually leads to its stable anchoring. It is not possible to fully load it after the operation, but with good bone quality it can bear a higher mechanical load, and at the same time, the absence of cement allows for an easier replacement of the prosthesis. Therefore, it is suitable for younger and more active patients (mostly under 75 years) without osteoporosis .


radiograph - total hip joint endoprosthesis

Another alternative for selected patients is the **hip resurfacing** method , the design of which resembles a cap on the head of the femur and tries to get as close as possible to a healthy joint. So far, due to problems with more frequent revisions, it has not seen a larger expansion.[1]

Endoprostheses are mostly made of **titanium** or **alloys of cobal**t and **chromium** . Between the head and the hole there is a so-called **inlay** made of polyethylene, reducing friction during the movement of metal components. Just like any material, the aforementioned implants have a lifespan and need to be replaced after approximately fifteen years.

Operation

Indication

The indication for a total hip joint endoprosthesis is a significantly impaired function of the joint, or if the joint is a source of very intense pain.

Contraindications

Among the main contraindications to total endoprosthesis are advanced internal diseases and the presence of infection in the organism.

Progress

If the doctor recommends surgery to the patient, he will undergo several pre-operative examinations. If there is, for example, an infection or inflammation in the hip, the operation cannot be performed. The performance is performed in a perfectly aseptic environment to prevent the occurrence of postoperative infection. The entire operation takes approximately an hour to an hour and a half, and the patient is most often under general anesthesia. If he wants to remain conscious, he is only paralyzed from the waist down. The patient is usually operated on his side. After replacing parts of the bones with prostheses, it is necessary to check their stability before the wound is sutured. After the operation, the patient is transferred to the intensive care unit, where he stays for three days and is monitored. From approximately the second day after surgery, rehabilitation exercises will begin under the supervision of a physiotherapist.

Complications

Generated during operation

- **Fracture** , for example of the femur - is solved by osteosynthesis
- **Vascular injury** - smaller branches are ligated, larger ones require revision and suturing of the femoral artery
- **Nerve injury**

Postoperative

- **Bleeding**
- **Endoprosthesis luxation** - repositioning is attempted under general anesthesia
- **Thromboembolic disease** - prevention is important here, for example rehabilitation and bandages
- **Infection** - manifested by redness, swelling, increased fever, increased sedimentation and increased CRP

Links

External Links

- Anesthesia for hip TEP – interactive algorithm + test (https://www.akutne.cz/algorithm/cs/335--/)

Related Articles

- Total endoprosthesis of the knee joint
- Osteoarthritis of the hip joint

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