

Endoprosthetics

Endoprosthetics is a method of replacing joints with a complex structure of metal, ceramics, and especially durable plastic. The need for arthroplasty arises in case of destruction of the articular surfaces, when movements become limited and / or severe pain occurs. Joint damage can be caused by diseases (e.g. rheumatism, psoriasis, thyroid pathology, gout), anatomical features (hypoplasia or dysplasia), the consequences of injuries (especially intraarticular fractures), or age-related changes. Most often, they need to be replaced with artificial (i.e., performing arthroplasty) hip and knee joints. Modern endoprostheses are high-tech and precision (high-precision) products that have undergone an extremely complex, multi-stage system of control and certification. By themselves, modern endoprostheses are almost eternal.

What happens during hip arthroplasty?

Hip replacement surgery can be performed traditionally or with what is called a minimally invasive technique. The main difference between the two procedures is the size of the incision. During standard hip arthroplasty, you get general anesthesia to relax your muscles and put you into temporary deep sleep. This will prevent a feeling of pain during surgery. A spinal anesthetic may be provided to help prevent pain as an alternative. The doctor then makes an incision along the lateral thigh and the motor muscles associated with the upper part of the femur to gain access to the hip joint. Next, the ball part of the connection is removed by cutting the femur with a saw. An artificial joint is attached to the femur using either cement or a special material that allows the bones to join together to attach to new joints. Then the doctor prepares the surface of the pelvic bone: removes all damaged cartilage and replaces the connector in the pelvic bone. A new thigh ball is then inserted into the thigh socket. Drainage can be placed to help drain the fluid. Then the doctor attaches the muscles and closes the incision. Although most hip joint surgeries today are carried out using the standard method (from 8 to 10 inches of incision along the side of the thigh), in recent years, doctors at our clinic have already used minimally invasive techniques. In a minimally invasive approach, doctors make 1-2 inch incisions from 2 to 5 cm in length. The same procedure is performed using these small incisions in a standard hip replacement. Small incisions help reduce blood loss, relieve pain after surgery, reduce hospital stay, reduce scar, improve appearance and speed healing. However, it is important that the surgeon is highly qualified. Studies show that the results of a minimally invasive approach can be worse than with standard hip arthroplasty, if the doctor who does the surgery is not very experienced in this technique. With a minimally invasive surgery, there is not much blood to endoprosthetically the hip joint, but there are cases of blood loss. Consult your doctor about a possible blood donation before starting surgery.

Hip Endoprosthetics

How is the joint?

The elements of the hip joint are the pelvic part (acetabulum) and the femoral part (femoral head), which through the neck passes into the body of the femur, just in the neck area the most frequent fractures are due to the anatomical and physiological features. The articular surfaces of the bones are covered with cartilage, which provides them with a painless and free glide.

What can be done at home after hip replacement surgery?

There are a few simple rules you can take to make your life easier when you get home after a hip replacement surgery:

- Try to walk the stairs to a minimum. Try to go up the stairs no more than once or twice a day;
- try to sit upright. Armchairs should not be used;
- to avoid falls, remove all mats and keep the rooms without fur;
- Use the raised toilet seat. This will help protect you from being bent at the hips;
- Keep your pets away until you recover completely.

Ask your doctor before telling you how to deal with sexual activity and exercise before returning to daily activities.

Indications for hip arthroplasty

- deforming arthrosis of the hip joints (coxarthrosis) of the second or third degree.

Over time, articular cartilage wears out. It degenerates, articular surfaces become uneven, ulcerated, cease to slip, causing the effect of sandpaper. A deformed femoral head with great labor turns in the acetabulum, causing pain with every movement. The bones that form the joint are exposed, bone spikes (osteophytes) begin to grow on them. This disease is constantly progressing, drug therapy, as a rule, does not give the desired effect.

Clinical and radiological CLASSIFICATION of coxarthrosis:

1. 1 stage - characterized by pain in the hip joint, extending to the knee joint and the inner surface of the thigh, the patient is lame, there is an apparent shortening of the limb, abduction and reduction in a good volume. There is some atrophy of the gluteal and thigh muscles. A small bone atrophy without the formation of osteophytes is observed radiologically.

2. Stage 2 - characterized by constant pain, a significant restriction of movement, a progressive shortening of the limb, expressed limp. Rotational movements are absent. Limited extension in the hip joint, there is atrophy of the gluteal muscles. Radiologically determined pronounced osteophytes, deformation of the femoral head, narrowing of the joint space, sclerosis and round cystic cavities, both in the head and in the roof of the articular cavity. A characteristic feature of stage 2 are periodic exacerbations of pain, forcing the patient to maintain bed rest or to resort to crutches for a time.

3. 3 stage - constant pain, significant shortening of the limb, stiffness of the joint in the state of adduction of the hip, complicating the physiological administration, because of the pain syndrome, there is a significant loss of working capacity and difficulties in self-care. X-ray expressed morphological changes are determined:

- rheumatoid arthritis with damage to the hip joints;
- osteoarthritis of the hip joints with psoriasis;
- Ankylosing spondylitis with a primary lesion of the hip joints.

In chronic diseases (rheumatoid arthritis, gouty arthritis, etc.) there is swelling and inflammation of the joint bag, thinning of the cartilaginous lining occurs, which requires almost constant powerful drug therapy, which is not always effective. Otherwise, the

pathological process develops further: pain intensifies, joint mobility is sharply limited, up to its complete immobility:

- aseptic necrosis of the femoral head.

Some chronic diseases, prolonged use of alcohol and steroid drugs, severe injuries can lead to poor blood supply to the bone and its necrosis, i.e. to necrosis of bone tissue.

- nonunion fractures and false joints after a fracture of the femoral head;
- fresh fractures of the acetabulum and femoral neck in patients older than 65 years;
- tumors of the femoral head, femoral neck in patients of any age.

Considering the peculiarities of the blood circulation of the hip joint, in case of fractures of the femoral neck and acetabular fractures, the blood supply to the femoral head is sharply disrupted, which often leads to its aseptic necrosis, even after joint fracture. Therefore, according to modern views, for hip fractures in older people, the method of choice is hip arthroplasty.

Knee endoprosthetics

Indications for knee replacement:

- dystrophic, post-traumatic gonarthrosis with severe disturbances in walking and standing with a sharp pain syndrome and limited movement in the joint, vicious (valgus or varus) setting of the limb;
- rheumatoid polyarthritis, monoarthritis, Marie-ankylosing spondylitis;
- with the consequences of injuries and osteosynthesis of the distal femur and the proximal end of the tibia (not earlier than 3 months after removal of metal structures).

During the operation, the surgeon removes the damaged bone surface and replaces the joint with an artificial implant, which is selected individually, taking into account the patient's anatomical features. Using special surgical instruments, the doctor cuts off the damaged bone tissue, and then forms a healthy bone so that it exactly matches the components of the implant.

Two methods of total knee arthroplasty are practiced:

- with removal of the posterior cruciate ligament. The ligament is replaced by polyethylene and femoral elements, which serve to support the joint and ensure its bending;
- without removing the posterior cruciate ligament. In the case of preserving the ligament, an endoprosthesis is installed to the patient, which has a groove providing anatomical location, functionality and protection of the posterior cruciate ligament.

Partial knee replacement

This operation is suitable for patients in whom only one of the three components of the knee joint is damaged. The purpose of the operation is to relieve pain syndrome, while preserving as much healthy bone and cartilage as possible.

During the operation, the surgeon removes the damaged cartilage and, if necessary, the underlying bone tissue and installs the metal and plastic components of the endoprosthesis.

Partial arthroplasty has several advantages, including a shorter hospital stay, quick postoperative recovery, and a minimal risk of infection and blood loss. Compared with patients who underwent a complete replacement of the knee joint, patients after partial endoprosthetics note better joint mobility and feel more natural. However, in this case, there is a risk of a resumption of the pain syndrome, since the preserved bone tissue is still susceptible to arthritis.

Before performing knee replacement, a team of doctors draws up a preoperative plan, which determines the optimal type of anesthesia and method of surgery. There are several ways to perform arthroplasty.

Computer Assisted Surgery

Today, knee replacement, both traditional and minimally invasive, can be done using computerized methods. Chi-rug enters the patient's anatomical data into a computer, which creates a three-dimensional model of the knee joint. This model allows the surgeon to more accurately align the implant components, which significantly increases the likelihood of the proper functioning of the implant. Extremely precise alignment of the components of the implantate reduces its wear and prolongs the life of the new joint. The computer-based approach also makes it possible to reduce the surgical incision and thus reduce the risk of complications. Our experts are fluent in the traditional and innovative techniques of knee arthroplasty, as evidenced by hundreds of successful operations and grateful feedback from patients.

Postoperative period

In the near postoperative period, intensive therapy is carried out with correction of all functions and systems, prevention of postoperative complications. From the first day after the operation, physical therapy classes begin, followed by gradual activation of the patient, walking with crutches, training in the features of physical activity, taking into account the presence of an endoprosthesis. There are also surgical wound dressings, adequate pain relief and drug therapy, physiotherapy.

Contraindications to total arthroplasty:

- inflammatory diseases caused by specific or nonspecific flora;
- bone ankylosis of the knee joint;
- consequences of infected osteosynthesis, osteomyelitis;
- active tuberculosis;
- the presence of general contraindications to the operation (the presence of concomitant diseases that impede the performance of any operation, infection of the skin and subcutaneous tissue in the area of the operation).