

COMPLICATION AFTER HIP ENDOPROSTHETICS OF THE HIP JOINTS AND THEIR PREVENTION

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Abstract: The review presents current data on the role of the immune system in the development after surgical complications during endoprosthetics hip joint. Surgical stress, exerting different powers oppressive effect on the immune system is a powerful factor creating the preconditions for the development of secondary immunosuppression or- aggravating it against this background, the likelihood of postoperative complications are enough high.

The conducted research has established the involvement in the process: osteogenesis and bone resorption Polypeptide growth factors - cytokines. The use of immunological methods allowed researchers highlight: criteria and develop ways to predict development complications in arthroplasty, the results were analyzed endoprosthetics of the hip joint in overweight patients body.

Key words: coxarthrosis, endoprosthetics, complications, the immune system

Half a century has passed since the first application of the pelvic floor of the hip arthroplasty. Today, in practice, many designs of endoprostheses and methods of their application are used. Despite the improvement of surgical technologies for the use of endoprostheses, the proportion of complications observed after treatment did not decrease. Therefore, during hip arthroplasty, it is important to ensure the stability of the endoprosthesis. According to scientific sources, one to two years after implantation, displacement of endoprostheses is observed in 25-60% of patients. (10,12,16)

The main reason for the observation of these complications by many authors is the uneven distribution of mechanical load, the small size due to the lack of firm placement of the endoprosthesis (microallocation, metallosis, local inflammatory reaction, the presence of bone distillation).

1. Biomechanical hypothesis, the essence of which is that the presence of functional incompatibility between the femur and the endoprosthesis is the main cause of the development of complications.

2. The hypothesis of inflammation is that bone erosion develops in response to reactive inflammation relative to a continuous load. These morphological changes lead to the development of a protective reaction of inflammation in the tissues in relation to the foreign body prosthesis. (17.6)

Research in recent decades suggests that osteogenesis and bone resorption are influenced by cytotoxins - polypeptide factors that affect tissue growth.

Infectious inflammation is one of the most common complications of pelvic joint arthroplasty. (17.5)

There is a difference in the development of purulent inflammation, which develops in the early period up to 3 months and late - in the period from 3 to 12 months. Depending on the nature of the inflammatory lesion and the plane, superficial and group inflammations are distinguished. (17.21).

Superficial inflammation is observed within a year after surgery, develops in the area of the postoperative wound (pelvis) and is not associated with the implant. Deep infectious inflammation develops over the course of a year and penetrates deep into the skin, subcutaneous muscles, and fascial areas and is associated with the implant. While acute purulent inflammation develops due to the ingress of microorganisms during drainage from the surgical wound area, aspect-specific chronic inflammation may pass from the surgical instruments through the air or over the surface of the implant being applied. Hematogenous inflammations can pass from other organs into the artificial joint area through the blood. (11)

In recent years, much attention has been paid to the influence of intestinal microflora on the development of infectious complications. (9.14)

The authors explain that the current process of influence is divided into two directions. The first is due to the weakening of the immune system due to psycho-mechanical and other influences, the second may be the pathological continuation of the normal physiological process of the organism.

Thus, the process of purulent inflammation depends on the influence of macro and microorganisms, in which the influence of the immune system is large.

O.V. Berdyugin and his co-authors (4) consider the reasons for the complicated development of endoprosthesis as follows.

- The presence of lymphocytes in the upper limit of moderate (predictive accuracy 73%).
- 50% higher than normal monocytes in 3 days (forecast accuracy 64.3%).
- Decreased LgG concentration in the 3 days before or after surgery (prognosis accuracy 64.3)%.

S.L. By determining the activity of serum Goldovis (7), A. Arutcheva (2) explains the development of purulent inflammation by determining the proportion of lysozymes in the blood.

Some authors (2) believe that neutrophil activity is important in the development of purulent septic complications (9,14,20)

It is known that the activity of these cells increases when blood loss is observed in the body in a state of adhesion or acidosis. According to the authors, an increase in the proportion of active nitrophils 1-3 days after surgery indicates the development of an uncomfortable environment. (20)

Decreased neutrophil counts indicate a satisfactory postoperative period. Therefore, the authors recommend drugs aimed at suppressing neutrophil proliferation, including tepoxalin. This drug is a blocker of leukocyte activity and inflammation. Another aspect of the immune system response is related to aseptic shaking of the implant endoprosthesis.

Neverov V.A. (13) and co-authors believe that the development of osteolysis under the influence of nonspecific factors in the body or against the body leads to the separation of the implant. According to the authors, the increase in the concentration of IgA and IgM in the serum and the differentiation of osteoclasts and the displacement of mature osteoclasts cytokine - ligand RANKL. (20)

The increase in the metabolic process is explained by an increase in the activity of enzymes. O.V. Zykina (with co-authors (8)) found an increase in the number of neutrophils in the peripheral blood 3 months after surgery in patients with aseptic immobilization of the endoprosthesis.

O.V. Beryudgina and co-authors (4) distinguished the following normative prognostic indicators in the assessment of the development of implant instability, a decrease in IgA concentration and an increase in IgE before surgery.

Elevation of IL-1 V and related protein neutrophils in the postoperative period.

Thus, it is emphasized that the role of the immune system in the observation of the temperatures that develop after pelvic hip arthroplasty is large.

It allows immunological monitoring of preoperative and postoperative researchers to predict the development of complications.

But these methods have their own drawbacks. In particular, long-term follow-up of patients undergoing endoprosthesis will be required for an objective assessment (prognosis) of changes in the dynamics and interdependence of laboratory parameters.

Thus, the early prognosis methods used can improve the outcome of surgical treatment of patients with severe consoarthritis and predict the possible complications that may develop.

A group of experts point out that the proportion of complications observed after pelvic-hip arthroplasty develops due to obesity. (1)

Early postoperative studies have shown that purulent septic complications are 6.7% more common in obese patients with moderate body weight than in patients with moderate knee arthroplasty and 4.2% more in patients with pelvic hip arthroplasty.

Factors influencing complications after endoprosthesis In 17 640 patients undergoing surgery (mortality rate - 0.35%, complications - 4.9%), the main cause of death was the patient's age, ie over 80 years ($r < 0.001$), from 70 Under 79 years of age ($R = 0.01$), renal failure ($r = 0.02$) and over 80 years of age ($r < 0.001$) lead to the development of systemic complications when cardiovascular disease ($r = 0.01$) is observed as a satellite disease. will be. In obese patients, a local complication develops within 30 days after surgery when the surgical procedure lasts more than 141 minutes. (19)

Deep vein thrombosis and thromboembolic complications are more common in patients with metabolic syndrome and obesity, requiring a very careful approach to preventing complications in the preoperative period. (17)

Obesity is a complicating factor in the surgical process. Therefore, great attention should be paid to the planning of anesthesia supply. (18)

Sadnikary and co-authors note that postoperative complications increase “dramatically” in obese patients weighing 30–45 times the normal weight, i.e., the various complications observed are 8.4% higher.

Conclusions.

An analysis of the scientific literature on pelvic hip arthroplasty shows that pelvic hip arthroplasty is a requirement of the real demographic situation and shows the need for this operation in the population.

However, according to many authors, it has not been convincingly proven that obesity has a clear negative effect on surgical outcomes.

However, in this category of patients, the operation is difficult, but the use of minimally invasive, ie small incisions, allows to reduce the incidence of infectious complications.

Therefore, in planning the operation, it is necessary to pay special attention to the effective conduct of the analgesic process and the full rehabilitation period.

Thus, the development of recommendations and standards for pelvic hip arthroplasty in elderly and severely obese patients is not only a modern real necessity, but also one of the current problems of modern traumatology and orthopedics.

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