

ІНФОРМАЦІЯ ПРО ДОКУМЕНТ

A novel concept for the manufacture of individual sapphire-metallic hip joint endoprostheses

Коллекция: Статті »

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Аннотация (English): At the present time, artificial joints made with metallic, ceramic, metal-polymeric or ceramicpolymericfriction pairs substituting for the natural biomechanic articulations "head of the hipjoint-acetabulum" are widely used for endoprosthetic operations on hip joints. Experiencegained in the course of more than 2000 operations has shown that along with theadvantageous properties of modern endoprosthetic constructions made of metal, ceramicsand polymers, they have certain drawbacks. Among them are insufficient biological inertnessand susceptibility to excessive wear of the friction pair components. In addition, as a result ofwear of the hinge friction pair, toxic and oncologically dangerous products of degradationaccumulate in the different organs and tissues. This in turn results in severe complications anddemands correspondingly complicated corrective intervention, often leading to worsedisability than that which the original operation was designed to cure. The aim of the studyreported here was the development and clinical validation of a highly effective and long-livedhip joint endoprosthesis with a sapphire head whose wear capacity is superior to all others.The endoprosthesis consists of a metallic pedicle, a dismountable articulation (metallic necklayerof supramolecular polyethylene-sapphire head) and an acetabular cup. The endoprostheseswith the sapphire head proved themselves positively in clinical trials and areconsidered to be highly promising for future applications.

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