

Middle ear microprosthesis

also children

P-280

The subject of the offer is a new medical device intended for a wide range of applications in the reconstruction of the conductive apparatus of the middle ear ossicles.

Application:

implantation to replace damaged or destroyed elements in the middle ear's conducting chain

Hearing impairment is a major problem for patients with middle ear disorders. One of the most common causes of this dysfunction is chronic otitis media. Many of these cases involve damage or even destruction of the middle ear's conductive chain and require surgical intervention. The standard method of treatment is middle ear implants. Their limitation, however, is the limited scope of potential application. This leads to the emergence of significant logistical problems forcing the possession of many expensive models of prostheses by units performing the implantation of auditory implants. So far, in the field of middle ear surgery, there are no solutions that allow matching one reconstruction system to different types of damage, which are often diagnosed only during surgery.

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The proposed prosthesis, which may be used in surgical treatment of middle ear pathology, has the possibility of individual adjustment, allowing for effective hearing improvement in various types of damage. The new system is characterized by a simple construction based on a single element and allows for the partial or complete replacement of the damaged ossicular chain.

Advantages of the new prosthesis:

- \checkmark high sound wave transmission efficiency;
- ✓ safety of use;
- \checkmark functionality and intraoperative ease of modelling;
- \checkmark universality of use in various clinical conditions;
- ✓ low production cost;

The invention has successfully passed preclinical tests and is currently in clinical development. The prosthesis was implanted in a group of patients in whom its effectiveness and safety were demonstrated. The offered solution is the subject of a patent application. Further works aimed at implementing the invention is carried out by scientists from the Collegium Medicum of the Jagiellonian University and the AGH University of Science and Technology in Kraków. Currently, the Centre for Technology Transfer CITTRU is looking for entities interested in commercial use of described solution.



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