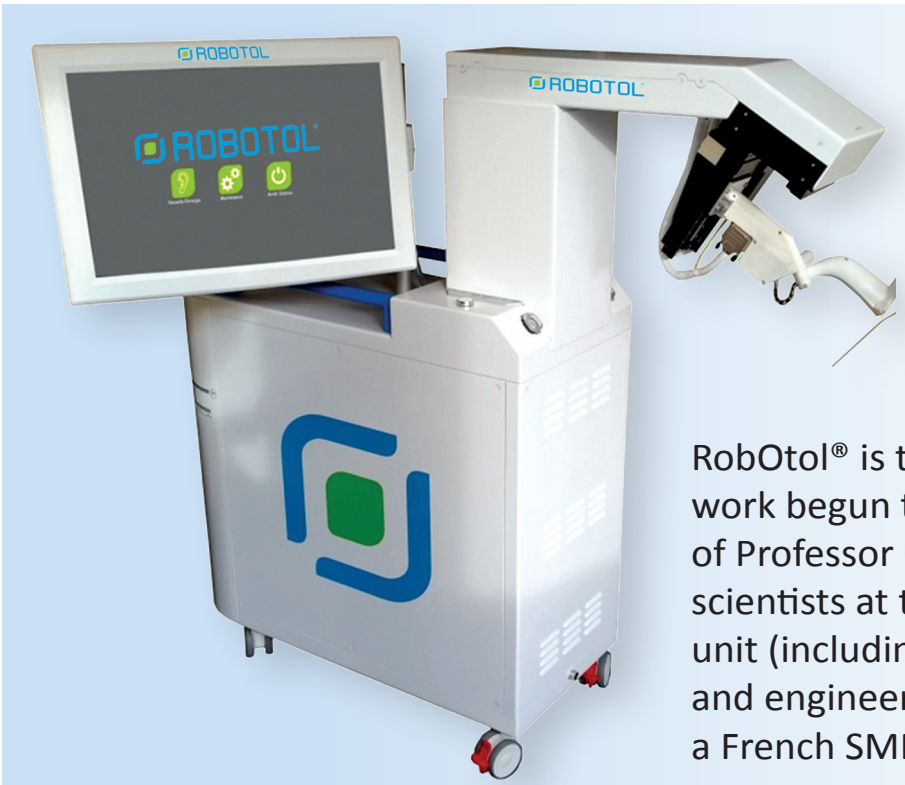
ROBOTOL®

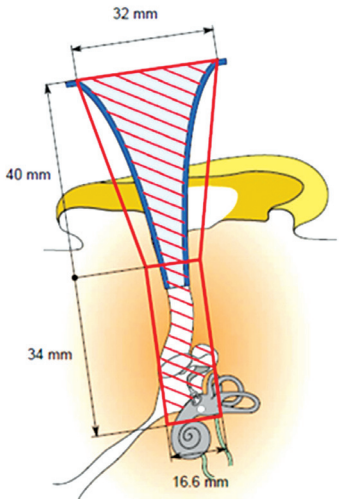
The first dedicated ear-surgery robot



RobOtol® is the outcome of research work begun ten years ago by the team of Professor Olivier Sterkers - ENT specialists, scientists at the Inserm/UPMC UMR-S 1159 unit (including two CIFRE doctoral theses), and engineers - in partnership with Collin, a French SME specializing in the ENT field.

Technical concept

- Mechanical architecture based on the concept of a pivot point.
- 7 degrees of freedom (3 rotations, 3 translations, one distal movement).
- A volume of work studied and sized for otological surgery.
- Design and ergonomics adapted to the constraints of the operating room.



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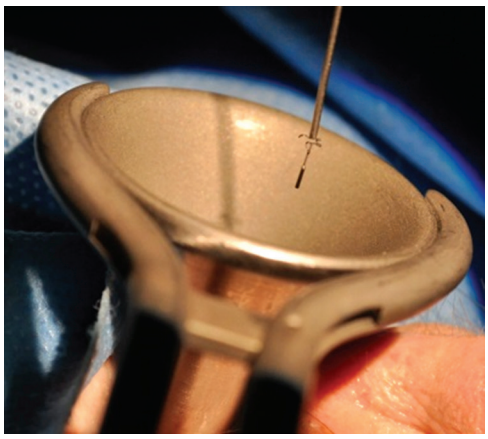
Expected applications and performance for RobOtol®

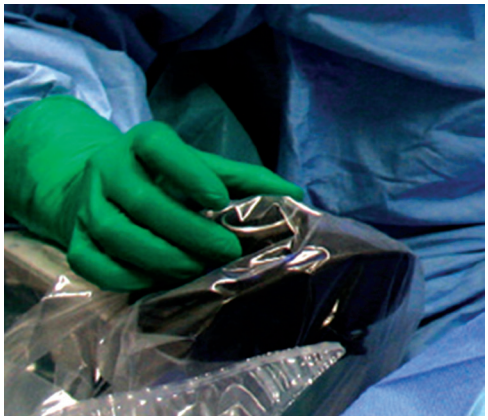
The RobOtol® is designed to move and extend along several axes, ensuring that the system can serve as a multi-purpose otological tool:



Use of the instrument holder arm:

Surgery for otosclerosis – stapedectomy and ossiculoplasty

This surgical procedure is one of the most frequent in middle-ear surgery but remains difficult and stressful for the surgeon.
The guiding principle is to robotize the most critical phases of this delicate operation so as to raise the overall level of surgical performance and enable young surgeons to shorten their learning curve and quickly achieve results approaching those of expert colleagues. Robotization can thus assist the surgeon in placing the piston or other partial or total middle-ear prostheses.



Cochlear implants – Assistance with the insertion of the cochlear implant electrode holder

The aim is to ensure quality in the installation of cochlear implants along the axis best adapted to anatomical variations while minimizing trauma caused by the insertion procedure.

Other applications are planned and will become progressively available: action or delivery of drugs to the inner ear.

Use of the optical system holder arm:

Today more and more ENT groups are developing endoscopic ear surgery in addition to or as a substitute for all or part of surgical procedures using a microscope.
The optical system holder function leaves the surgeon free to use both hands for endoscopic ear surgery.

Littérature

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