



ROSA™ Ventricular and Transnasal Neurosurgery

ROSA™ offers unmatched assistance for minimally invasive Neurosurgery, providing increased dexterity and safety when manipulating surgical instruments.

Endoscopic Neurosurgery is an integral part of the fundamental trend to continuously minimize patient trauma. Providing this valuable patient benefit requires the surgical team to overcome major obstacles such as decreased visibility, limited workspace and arduous instrument manipulation.

ROSA™ addresses these challenges by assisting the surgeon through placement, support and advanced manipulation of the endoscope.

The system implements a fully frameless approach carried-out in three simple steps. First, the surgical planning is performed by inputting the desired initial placement of the endoscope on preoperative 3D MR and / or CT acquisitions using ROSA™'s dedicated software. Then, the system is brought into the OR and the registration is performed. Finally, the robot is used to automatically position the endoscope holder in the initial trajectory. The robot offers a perfectly stable and firm support of the endoscope. This gives the surgeon an unmatched opportunity to drill an optimal minimally invasive surgical access. From there, the surgeon can then securely and smoothly move the endoscope by using ROSA™'s haptic manipulation mode. Robotic arm motion is activated and deactivated through a simple foot control pedal. Specially-built instrument adaptors warrant compatibility with any endoscope model on the market.



“With the device ROSA™ I can move the endoscope securely using the haptic mode and constraining my movements in security zones preoperatively-planned”.

Prof. KEHRLI – CHU Strasbourg

ROSA™'s haptic manipulation mode allows the surgeon to effortlessly perform advanced endoscope motions. This enables the surgeon to move the endoscope manually, but at the same time constrain the movement along a preprogrammed path. In isocentric mode, for example, all motions pass through the trajectory's entry point. This guarantees, in a very intuitive manner, that the minimally invasive access is always maintained.

The safety of the procedure is further enhanced by ROSA™'s security zone feature. This functionality confines all endoscope motions inside a preoperatively-planned cone along the trajectory. This gives the surgeon an easy way to make sure critical structures and healthy tissues are preserved.

Moreover, ROSA™'s real-time navigation feature continuously overlays the position of the endoscope on the preoperative images. This gives the surgeon constant control over the current position of the instruments relative to the patient's anatomy, thus compensating for the limited visibility offered by the endoscope.



“ROSA™ allows to neurosurgeons to perform his gesture with his haptic mode:

- Micro-moves*
- Constrain the movement*
- Security zone feature*

ROSA™ is Intelligent Assistant for Neuroendoscopy.