Microsurgical resection is commonly admitted to be the gold standard for extra-axial benign tumors treatment, mainly meningioma, neuroma. However we all know that according to some well-known pre-operative prognostic factors such as the size and location of the tumor, the age and pre-operative clinical status of the patients, these tumors are remaining very challenging. On the other side the necessity to keep a good post-operative functional outcome is mandatory in term of neurological and functional preservation for a good and stable post-operative follow-up and quality of life for the patients.

Since the introduction of the Gamma-knife radio-surgical treatment in our daily practice (2011) we have changed the initial paradigm of the importance of the extent of resection to neurological and functional preservation for our patients, this achievement being the main goal, using a combined and complementary strategy of microsurgical and radio-surgical treatments for a good local control of the tumor sparing functionality.

The rationale of the combined strategy is exposed, illustrated by the presentation of some selected and representative cases.