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## FIRST EXPERIENCE IN BRAIN TUMOR REMOVAL USING RADIOWAVE SURGICAL DEVICE "SURGITRON"

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Leading Neurosurgical clinics and Prof.Polenov RNRI among them, focus their attention on research of modern medical technologies and their practical implementation. Among new surgical methods high frequency (4MHz ) radiowave surgery attracts a lot of attention. This method was developed by "Ellman International, Inc." (USA, 1978). Nowadays radiosurgery is widely used in such aspects of surgery as otolaryngology, gynecology, surgical dentistry, cosmetology and oncology. Neurosurgeons became open to radiowave technologies later than other surgeons because of lack of the information about influence of high frequency radiowave oscillation on morphology and function of brain tissue.

In RNRI operating rooms clinical approbation of radiosurgical device "Surgitron DF120" was conducted for about a year. This device was used as instrumental addition to the standard neurosurgical methods and instruments. 36 surgeries were performed using "Surgitron" in cases of extracerebral and interbrain tumors of supra- and subtentorial localization (25 surgeries), vertebral disk hernias (6 surgeries) and peripheral nerve traumatic damage (5 surgeries).

The scope of device application might vary because of gradual expanding of the number of manipulations with it. Altogether 150 radiosurgical manipulations were performed during 36 surgeries with the use of monopolar and bipolar electrodes. In the beginning electrode configuration, i.e. base and tip length and form not always satisfied us. We expressed our concerns and suggestions to Ellman representative and as a result of this cooperation "Surgitron" accessories range was expanded by adding a set of neurosurgical electrodes. Bipolar radiowave forceps proved to be especially effective because tissue does not stick to it during the procedure in a coagulation mode and it does not require constant sprinkling of the wound.

Radiowave surgery advantages areas follows:

- Precision and control of desired effect on the tissue
- Ability to make an incision of any configuration without applying pressure on tissue
- Simultaneous cut/coagulation of small blood vessels
- absence of thermal damage of tissue
- absence of tissue "sticking" to the instrument during bipolar coagulation.

This new improved model – "SURGITRON DF 120" provides surgical precision on most stages of the surgery. It can become a primary tool in Neurosurgical practice. January 16, 2006

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