

# お茶の水ニューロサイエンス・セミナー 大学院特別講義

(医歯学先端研究特論) (生命理工学先端研究特論)  
(医歯理工学先端研究特論)

**演題:** Large impacts of gamma knife radiosurgery on cancer  
radiotherapy: The tough 65-year fight against prejudices  
and forces of resistance

**演者:** 山本 昌昭 先生 (Masaaki Yamamoto, M.D.)  
勝田病院 水戸ガンマハウス 脳神経外科部長  
東京女子医科大学東医療センター脳神経外科客員教授

**日時:** 2015 年 6 月 23 日(火) 18:00 – 20:00

**場所:** 共用講義室 2 (東京医科歯科大学 M&D タワー2 階)

## 講演要旨:

The concept of gamma knife treatment was created by the great Professor Lars Leksell (1907-1986). He was the successor of one of the world's pioneering neurosurgeons, Professor Herbert Olivecrona (1891-1980) who was the first chairman of the Neurosurgical Department at Karolinska Hospital. One of his themes in neurosurgical practice was to minimize invasiveness. Professor Leksell succeeded in taking this theme to its pinnacle. In 1951, he devised a treatment which, instead of the pre-existing surgical technique using radio-frequency energy delivered via an inserted needle-type electrode, in which infection and/or bleeding inevitably occurred at certain rates, cross-fired ionizing beams from multiple directions were applied to produce a small lesion in deep brain structures with no risk of such complications. Following 17 years of dedicated labor and tough fights against the forces of resistance, the prototype of the gamma knife became available in 1968. Nevertheless, the usefulness of the gamma knife only came to be widely recognized in the 1990s. This was because, although treatment results of gamma knife for patients with various brain tumors and vascular diseases had been shown to be extremely good, most neurosurgeons closed their eyes refusing to accept these results and were trapped in their dedication to traditional open surgery. In my presentation today, I will focus on why such an extraordinary long incubation period, from 1951 to 1968, was necessary as well as the lag from 1968 until the 1990s in recognizing the enormous utility of the gamma knife.

Furthermore, I will describe my personal fight against prejudices and forces of resistance for the 18 years since 1997. In the mid-1990s, generally, only a few metastatic brain tumors would be treated using a gamma knife. I was the first to show that 5 or more, even 10 or more, such lesions can be treated with a gamma knife effectively and safely. This work began in 1997. However, worldwide, most radiation oncologists who perform only whole brain radiotherapy for such conditions do not accept my proposal to treat so many lesions. However, this high barrier was successfully overcome by our recently-published study (Lancet Oncology 2014;15[4]:387-395).

多数の皆様の御来聴をお願い申し上げます。

お茶の水ニューロサイエンスアソシエーション (ONSA)  
担当: 脳神経機能外科学分野 前原健寿 Tel: 5803-5266

ONSA 事務局: 神経機能形態学分野 内  
E-mail: mie.taguchi.nana@tmd.ac.jp Tel: 5803-5149 Fax: 5803-5151