

# Masterclasses

**M11.2****Advance in Neurosurgical Treatment Using LINAC Machine****09:00 Room 221****Image-guidance Intracranial Stereotactic Radiosurgery – the Local Perspective***Kam MKM**Department of Clinical Oncology, Prince of Wales Hospital, Hong Kong*

Stereotactic Radiosurgery plays an important role in the management of many benign and malignant brain lesions. It is a precision therapy making use of ionizing radiation to ablate intracranial lesions without the need of undergoing open surgery.

First pioneered by Swedish neurosurgeon Professor Lars Leksell, radiosurgery was first defined as “a single high dose fraction of radiation, stereotactically directed to an intracranial region of interest”. Using a frame-based immobilisation system, radiosurgery has been used to treat a wide variety of intracranial diseases such as brain metastases, acoustic neuroma, meningioma, pituitary tumor, trigeminal neuralgia, and arterio-venous malformation.

Technological improvements on medical imaging and computing in recent years have much expanded the clinical utility of stereotactic radiosurgery. Image guidance technology using online or real-time stereoscopic X-rays or CT scanning enables the evolution from an invasive frame-based system to a completely user-friendly frameless system while still maintaining the same degree of targeting accuracy. The rid of frame immobilisation also allows the use of more fractions in the treatment of a target that is too large or too close to critical organs for single fraction radiosurgery treatment. Today, stereotactic radiosurgery or stereotactic hypofractionated radiotherapy has been employed to treat both intracranial as well as extracranial diseases.

In this presentation, the common indications of intracranial radiosurgery will be covered. Technical concerns, treatment planning details, expected outcome, and potential complications of treating brain metastases, arteriovenous malformation, meningioma, and acoustic neuroma will be discussed, and local data from a single institute will be presented.