A REVIEW OF THE FIRST 1000 PATIENTS TREATED WITH GAMMA KNIFE AT THE PETER MACCALLUM CANCER CENTRE

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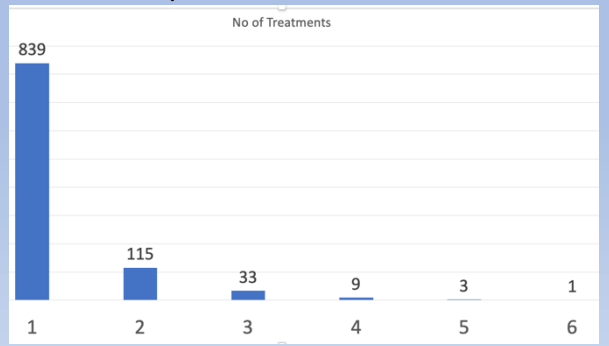
Background

Gamma Knife Stereotactic Radiosurgery (GK-SRS) is a non-invasive, high-precision treatment for various intracranial pathologies, including benign and malignant tumours, vascular malformations, and functional disorders. Our review examines the first 1000 patients treated in a large Victorian cancer centre.

Methods:

This study presents a retrospective review of the first 1000 consecutive patients treated with GK-SRS at a single institution in Melbourne, Australia. Patients were treated across a 4-year period (2021-2025).

Patient demographics, clinical indications, number of treatments, and treatment approaches were meticulously collected for an observational review of the first 1000 patients treated.



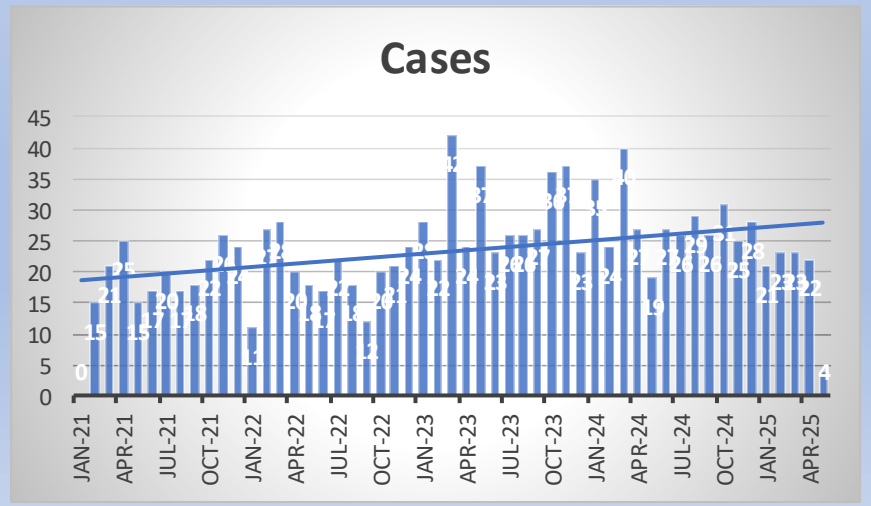
Results:

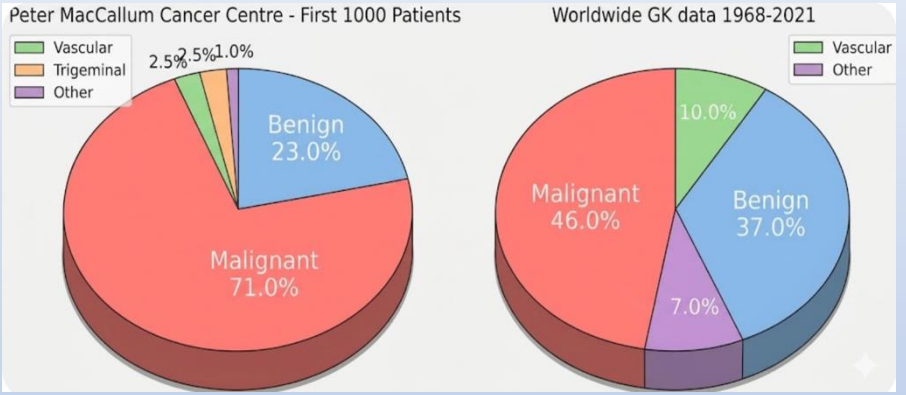
The cohort included 1000 patients undergoing 1220 treatments on the Gamma Knife Icon®.

Eight hundred and thirty-nine (839) patients received just one course of treatment, and the remaining 161 patients received two or more. Of these patients, 71% were treated for malignant disease and the remaining 29% were treated for benign conditions.

The most commonly treated cancers were from lung cancer, followed by melanoma and breast cancer.

The most common benign conditions were vestibular schwannoma, meningioma and AVM. Eighty-one percent (81%) of patients were treated using the mask-based treatment, while 19% were treated using a frame.





Conclusion:

This large, single-centre experience from a large metropolitan cancer centre demonstrates a different case-mix compared to other Australian and international Gamma Knife centres.

Our workload included 71% malignant disease and 29% benign conditions.

Possible reasons for this difference include statewide referral patterns, clinician decision-making, government funding models, and geographic accessibility. This information may help to inform future cancer service provision within Australia.

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