



Technology applied to Oncological Neurosurgery

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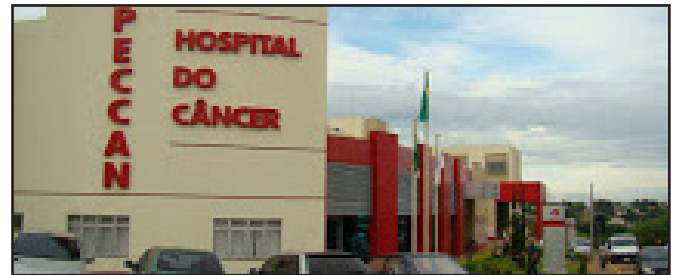
Abstract:

Introduction: Just as it happened in several areas of medicine, technological innovation is transforming our view in medical assistance. Innovation can be defined by the introduction of techniques that starts a change in clinical or surgical practice. Neuro oncological surgery becomes a technologically discipline after the introduction of microscope, neuronavigation systems and image studies inside the surgical theater, and new technologies have preceded many of the major advances in operative oncological neurosurgical techniques.

Methods: The purpose here is to list and find the high quality points of any innovative technology application to use then better and create more safe oncological neurosurgery.

Discussion: In modern clinical and surgical practice in neuro oncology new methods are providing more secure surgical techniques with better resection results and better clinical outcome to patients." HJ et al with 11,672 patients and 208,203 publications relating to neurosurgery were identified. The top performing technology clusters over the 50 years were: image guidance devices, clinical neurophysiology devices, neuromodulation devices, operating microscopes and endoscopes. Image guidance and neuromodulation devices demonstrated a highly correlated rapid rise in patents and publications, suggesting they are areas of technology expansion." We believe that this numbers will increase exponentially.

Conclusions: Advances in devices with 3D tumor localization similarly with GPS image guidance are providing better and new approaches to the neurosurgeon's armamentarium. Preoperative MRI with tractography



and intra-operative imaging, neurophysiology with brain mapping and neurologist testing patients awake during the procedure cause impact increase and safety in surgical removal of tumors from the nervous tissue. References 1) Hani J Marcus, MRCS,1,2,* Archie Hughes-Hallett, MRCS,1 Richard M Kwasnicki, BSc,1 AraDarzi, FRS,1 Guang-Zhong Yang, FEng,1 and Dipankar Nandi, D. Phil.2 - TECHNOLOGICAL INNOVATION IN NEUROSURGERY: A QUANTITATIVE STUDY J Neurosurg. 2015 Jul; 123(1): 174-181. doi: 10.3171/2014.12.JNS141422 2)R.D.JohnsonR.J.Stacey - The impact of new imaging technologies in neurosurgery - [https://doi.org/10.1016/S1479-666X\(08\)80006-6](https://doi.org/10.1016/S1479-666X(08)80006-6)

Biography:

Stefan Szylewicz is a Neurosurgeon in the Hospital of Uopecan. His research interest includes Brain tumour, Neurooncology.

Publication of speakers:

1. Stefan Szylewicz et al. Apresentação Rara de Schwannoma Em Nervo Ciático: Relato de Caso Número do Resumo - ID 30. Journal of Brasileiro de Neurocirurgia.
2. Stefan Szylewicz et al. Carcinoma Ductal Invasor com Metástase para Ângulo Pontocerebelar: Relato de Caso. Journal of Brasileiro de Neurocirurgia.

Neurosurgery Webinar | September 17 2020 | London, U.K

Citation: Stefan Szylewicz; Technology applied to Oncological Neurosurgery; Neurosurgery Webinar; September 17 2020; London, UK.