353 The Rise of the Exoscope

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Introduction: An exoscope is a next generation HD telescope video monitoring system used to perform microsurgeries that is now a formidable rival to the existing operating microscope in neurosurgery. While the microscope revolutionised neurosurgery with its advent in 1957, the exoscope allows surgeons to operate utilising high-definition images enhancing the field of vision and focus. The exoscope opens new avenues with regards to ergonomics, teaching in theatre and enhances the surgeon’s experience.

Method: We will do a literature review on available literature on the use of exoscope in neurosurgery with regards to the operating microscope. Both qualitative and quantitative data will be reviewed. Personal experience of Neurosurgeons in our unit will also be reviewed using questionnaires.

Results: The exoscope has many benefits when compared to the operating microscope where it surpasses its predecessor in many ways. 15 studies were reviewed where the exoscope was compared to the operating microscope which concluded the exoscope equal or superior in many aspects such as teaching, ergonomics, image definition and being user friendly. There were some pitfalls of the exoscope reported such as the image being in 2D which limited the surgeon’s stereoscopic vision and the costs involved.

Conclusions: The exoscope is a revolutionary advent in neurosurgery and may soon make the operating microscope obsolete but there is still room for improvement.