

Microvascular Decompression VS Gamma Knife Surgery for the Surgical Management of Trigeminal Neuralgia

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Trigeminal neuralgia (TN) is a chronic facial pain syndrome, characterised by severe, stabbing pain felt in one or more divisions of trigeminal nerve innervation areas. TN pain is so excruciating that it heavily impacts a patient's quality of life. Most cases can be controlled using anti-convulsive medications, however some patients do not respond to medication or have adverse effects, at which point surgery is considered. Many different surgical procedures are available for TN, however Microvascular Decompression (MVD) and Gamma Knife Surgery (GKS) are amongst the most widely used. This appraisal seeks to determine whether MVD is more successful than GKS in treating TN. Medline Embase and The Cochrane Database of Systematic Reviews were searched, as well as executing a hand search of Google, for relevant studies comparing pain relief, pain recurrence and complications of MVD & GKS. Studies must have been published in the last 5 years, must have measured pain using the Barrow Neurological Institute (BNI) pain scale and patient follow-up must have been at least one-year post-surgery. This resulted in 2 studies meeting the inclusion criteria, which were then selected for appraisal. Both studies showed a statistically significant difference between the effectiveness of MVD and GKS in the management of TN. However, both studies had several flaws, weaknesses and were subject to bias, thus impacting on their credibility. Whilst the evidence suggests MVD provides superior outcomes than GKS, further research is required in the form of a Randomised Controlled Trial to categorically determine which treatment is more effective.

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