

Microvascular decompression for trigeminal neuralgia

In the hands of experienced neurosurgeons, MVD for TGN can achieve high long-term curative effects. In addition, [Microvascular decompression for trigeminal neuralgia complications](#) are uncommon and usually transient. The results indicate that MVD is an effective and safe treatment for patients with TGN, including elderly patients ¹⁾.

[Microvascular decompression](#) is a first-line neurosurgical approach for classical [trigeminal neuralgia](#) with neurovascular conflict, but can show clinical relapse despite proper decompression. Second-line destructive techniques like [radiofrequency](#) thermocoagulation have become reluctantly used due to their potential for irreversible side effects. Subcutaneous peripheral nerve field stimulation (sPNFS) is a minimally invasive neuromodulatory technique which has been shown to be effective for chronic localised pain conditions.

The most frequently used surgical management of trigeminal neuralgia is [Microvascular decompression](#) (MVD), followed closely by [stereotactic radiosurgery](#) (SRS). [Percutaneous stereotactic rhizotomy](#) (PSR) , despite being the most cost-effective, is by far the least utilized treatment modality ²⁾.

[Microvascular decompression](#) (MVD) via [lateral suboccipital approach](#) is the standard surgical intervention for [trigeminal neuralgia treatment](#).

[Teflon™](#) and [Ivalon®](#) are two materials used in MVD for TN. It is an effective treatment with long-term symptom relief and recurrence rates of 1-5% each year. Ivalon® has been used less than Teflon™ though is associated with similar success rates and similar complication rates ³⁾

Although microvascular decompression (MVD) is the most effective long-term operative treatment for TN, its use in older patient populations has been debated due to its invasive nature. The symptoms and surgical findings presented in a cohort for young-onset TN are similar to those reported in elderly adults. MVD appears to be a safe and effective treatment for young patients with TN ⁴⁾.

see [Microvascular decompression for trigeminal neuralgia and multiple sclerosis](#)

see [Awake Microvascular Decompression for Trigeminal Neuralgia](#).

Endoscope assisted microvascular decompression for trigeminal neuralgia

see also [Endoscope assisted microvascular decompression for trigeminal neuralgia](#).

Compared with the standard microscope-assisted techniques, the 3D exoscopic endoscope-assisted MVD offers an improved visualisation without compromising the field of view within and outside the

surgical field ⁵⁾.

Fully endoscopic microvascular decompression for trigeminal neuralgia

[Fully endoscopic microvascular decompression for trigeminal neuralgia](#)

Systematic Review and Meta-Analysis

Using preferred reporting items for systematic reviews and meta-analyses ([PRISMA](#)) guidelines, [PubMed](#), [Cochrane Library](#), and [Scopus](#) were queried for primary studies examining pain outcomes after MVD for TN published between 1988 and March 2018. Potential [biases](#) were assessed for included studies. Pain freedom (ie, Barrow Neurological Institute score of 1) at last follow-up was the primary outcome measure. Variables associated with pain freedom on preliminary analysis underwent formal meta-analysis. [Odds ratios](#) (OR) and 95% [confidence intervals](#) (CI) were calculated for possible predictors.

Outcome data were analyzed for 3897 patients from 46 studies (7 prospective, 39 retrospective). Overall, 76.0% of patients achieved pain freedom after MVD with a mean follow-up of 1.7 ± 1.3 (standard deviation) yr. Predictors of pain freedom on meta-analysis using random effects models included (1) disease duration ≤ 5 yr (OR = 2.06, 95% CI = 1.08-3.95); (2) arterial compression over venous or other (OR = 3.35, 95% CI = 1.91-5.88); (3) superior cerebellar artery involvement (OR = 2.02, 95% CI = 1.02-4.03), and (4) type 1 Burchiel classification (OR = 2.49, 95% CI = 1.32-4.67).

Approximately three-quarters of patients with drug-resistant TN achieve pain freedom after MVD. Shorter disease duration, arterial compression, and type 1 [Burchiel classification](#) may predict a more favorable outcome. These results may improve patient selection and provider expectations ⁶⁾.

Technique

[Microvascular decompression for trigeminal neuralgia technique.](#)

Outcome

[Microvascular decompression for trigeminal neuralgia outcome.](#)

Complications

[Microvascular decompression for trigeminal neuralgia complications](#)

Case series

[Microvascular decompression for trigeminal neuralgia case series.](#)

References

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