

# Teflon

Microvascular decompression (MVD) for neurovascular compression syndromes, such as [trigeminal neuralgia](#) and [hemifacial spasm](#), has been traditionally described as an interposing technique using Teflon.

Synthetic materials, such as [Teflon](#) or [Ivalon](#) sponges have also been associated with a direct subsequent neurovascular compression by the same vessel because of a slipped prosthesis <sup>1)</sup>.

Compression of the trigeminal root entry zone, caused by the prosthesis itself or by severe adhesions, has been reported by several authors <sup>2) 3)</sup>, and even indirect vascular compression caused by fairly hard implants like Ivalon has been reported <sup>4) 5)</sup>.

## Complications

### Teflon granuloma

Two patients with a history of microvascular decompression (MVD) for hemifacial spasm who presented with Teflon granulomas (TG) mimicking cerebellopontine angle (CPA) tumors and to perform a systematic review of the English-language literature. STUDY DESIGN: Case series at a single tertiary academic referral center and systematic review. METHODS: Retrospective chart review with analysis of clinical, radiological, and histopathological findings. Systematic review using PubMed, Embase, MEDLINE, and Web of Science databases. RESULTS: Two patients with large skull base TGs mimicking CPA tumors clinically and radiographically were managed at the authors' institution. The first presented 4 years after MVD with asymmetrical sensorineural hearing loss, multiple progressive cranial neuropathies, and brainstem edema due to a growing TG. Reoperation with resection of the granuloma confirmed a foreign-body reaction consisting of multinucleated giant cells containing intracytoplasmic Teflon particles. The second patient presented 11 years after MVD with asymmetrical sensorineural hearing loss and recurrent hemifacial spasm. No growth was noted over 2 years, and the patient has been managed expectantly. Only one prior case of TG after MVD for hemifacial spasm has been reported in the English literature. CONCLUSIONS: TG is a rare complication of MVD for hemifacial spasm. The diagnosis should be suspected in patients presenting with a new-onset enhancing mass of the CPA after MVD, even when performed decades earlier. A thorough clinical and surgical history is critical toward establishing an accurate diagnosis to guide management and prevent unnecessary morbidity. Surgical intervention is not required unless progressive neurologic complications ensue <sup>6)</sup>.

<sup>1)</sup>

Liao JJ, Cheng WC, Chang CN, Yang JT, Wei KC, Hsu YH, Lin TK. Reoperation for recurrent trigeminal neuralgia after microvascular decompression. *Surg Neurol*. 1997 Jun;47(6):562-8; discussion 568-70. PubMed PMID: 9167781.

<sup>2)</sup>

Cho DY, Chang CG, Wang YC, Wang FH, Shen CC, Yang DY. Repeat operations in failed microvascular decompression for trigeminal neuralgia. *Neurosurgery*. 1994 Oct;35(4):665-9; discussion 669-70. PubMed PMID: 7808609.

<sup>3)</sup>

Yamaki T, Hashi K, Niwa J, Tanabe S, Nakagawa T, Nakamura T, Uede T, Tsuruno T. Results of reoperation for failed microvascular decompression. *Acta Neurochir (Wien)*. 1992;115(1-2):1-7. PubMed PMID: 1595390.

4)

Goya T, Wakisaka S, Kinoshita K. Microvascular decompression for trigeminal neuralgia with special reference to delayed recurrence. *Neurol Med Chir (Tokyo)*. 1990 Jul;30(7):462-7. PubMed PMID: 1701856.

5)

Jannetta PJ, Bissonette DJ. Management of the failed patient with trigeminal neuralgia. *Clin Neurosurg*. 1985;32:334-47. Review. PubMed PMID: 3905144.

6)

Deep NL, Graffeo CS, Copeland WR 3rd, Link MJ, Atkinson JL, Neff BA, Raghunathan A, Carlson ML. Teflon granulomas mimicking cerebellopontine angle tumors following microvascular decompression. *Laryngoscope*. 2016 Jun 19. doi: 10.1002/lary.26126. [Epub ahead of print] PubMed PMID: 27320780.

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