

**Sacrificing the Superior Petrosal Vein during Microvascular Decompression Does Not Increase Vascular****Complications: Experience from One Institution**

Yuanxuan Xia BA; Timothy Y Kim BS; Leila A Mashouf BS; Kisha K Patel; Risheng Xu AB AM MD PhD; Joshua Casaos BS;

Eileen Kim; Alice L Hung BA; Adela Wu Sc.B., A.B.; Tomas Garzon-Muvdi MD MS; Matthew T Bender MD; Christopher

Mitchell Jackson MD; Chetan Bettgowda MD, PhD; Michael Lim MD

**Introduction**

Microvascular decompression (MVD) is an established procedure for treating conditions such as trigeminal neuralgia and hemifacial spasm. However, during a standard retrosigmoid approach, the decision to sacrifice the superior petrosal vein (SPV) is controversial. There have been multiple reports of complications including life-threatening brainstem infarction and cerebellar edema. This study analyzes the potential for vascular complications when the SPV is sacrificed during an MVD.

**Methods**

Retrospective chart review was performed to identify all MVDs from 2007-2018 by the senior author. Cases with >1 month of follow-up were included and sacrifice of the SPV or its branches was noted. The primary outcome was complications related to SPV sacrifice including sinus thrombosis, cerebellar edema, and midbrain or pontine infarction. Imaging was used to confirm all potential vascular complications mentioned in clinical notes. Fisher's exact test and unpaired t-tests were used to compare between groups.

**Results**

701 MVD cases were identified and 570 met inclusion criteria with an average follow-up of  $12.0 \pm 16.7$  months and a male-to-female ratio of 1:2.1. 141 patients (24.7%) had previous interventions and 10 patients had previous ipsilateral MVDs. The SPV was sacrificed in 211 cases and retained in 359 cases. At final follow-up, 149 patients (70.6%) were pain-free in the group with the sacrificed vein and 240 patients (66.9%) were pain-free in the non-sacrificed group ( $p = 0.402$ ). No SPV-related vascular complications were found in this study. Two unrelated cases of vascular complications were identified and both were in the non-sacrificed group. One case involved cerebellar bleeding while the other was an ipsilateral transverse sinus thrombosis that was present preoperatively.

**Conclusions**

In MVDs, there is no difference in rate of vascular complications when the SPV is sacrificed compared to preserved. To best visualize a cranial nerve and optimize safe decompression, surgeons should feel free to resect the SPV.

**Learning Objectives**

By the conclusion of this session, participants should be able to: 1) Describe the importance of microvascular decompression and a standard retrosigmoid approach's operating field and 2) Discuss, in small groups, the potential complications involved in sacrificing vessels to clearly visualize offending nerves.

[Default Poster]