

# Comparison of Type of Vascular Compression and Surgical Outcomes in Microvascular Decompression

## Surgery for Trigeminal Neuralgia

Marshall Thomas Holland MD; Jennifer Noller; Patrick W. Hitchon MD  
University of Iowa Hospitals and Clinics



### Introduction

For 75% of patients with Trigeminal Neuralgia (tic douloureux), the frequent lancinating pains can be controlled with medications. For the other 25% who's pain is unable to be controlled or who experience intolerable side effects from drug therapy, one of the mainstays of surgical treatment is Microvascular Decompression (MVD). Often, a vascular loop is noted at the trigeminal nerve's root entry zone. Previous studies have not investigated a possible correlation between the type of compression noted at surgery and facial pain outcomes. We hypothesized the more compression noted at the time of surgery would correlate with better facial pain outcomes.

### Methods

A retrospective chart review at an academic referral center between January 2002 and January 2012 identified a total of twenty-eight patients who underwent MVD in which adequate follow up (2 years) and intraoperative photographs were available. Intraoperative images were examined for these patients to confirm the type of vascular compression (none, venous, arterial and venous, or arterial). Outcome was defined as excellent (no pain, no medications), good (no pain, still requiring medications), fair (>50% decrease in pain), and poor (<50% decrease in pain or secondary surgery required) at the two year post surgical follow up appointment.

### Demographics and Secondary Outcomes

Demographic	MVD
Mean Age (yrs)	53.7
Sex % Female	56
Side % Right	61

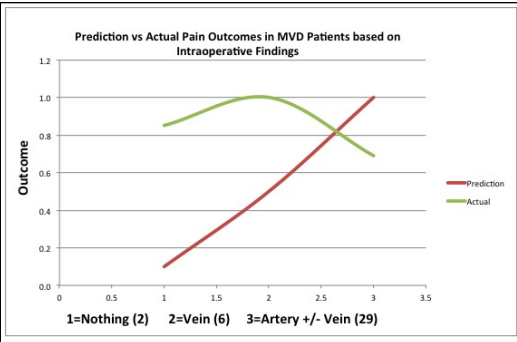
Outcome	MVD
% Numb	13
% Required Second Procedure	10

### Results

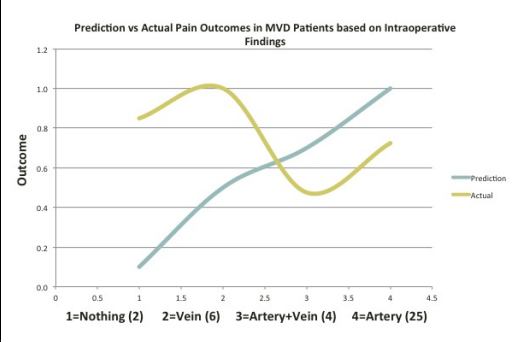
The average age of patients were 53.2±14 (14-73) (57% female). Right-sided procedures were performed on 57% of the patients. The type of vascular compression found was None=2, Vein only=6, Artery and Vein=4, and Artery only=25. Percentage of excellent outcomes for the types of compression were Nothing=50%, Vein Only=100%, Artery Only=56%, and Artery and Vein=75%.

Outcome Category	Value	Definition
Excellent	1	No Pain, No Medications Required
Good	0.7	No Pain, Medications Required, Numbness Present
Fair	0.5	Continued Pain (>50% Decrease in Pain)
Poor	0.1	Continued Pain (<50% Decrease in Pain) or Second Surgery Required

Above table shows how outcome was defined based on patient reported pain improvement and use of medications at 2 years following surgery.



Pain out comes associated arterial compression with or without venous compression component noted at surgery compared to venous compression and none.



Average pain outcomes associated with all types of compression noted at time of surgery.

### Conclusions

Microvascular decompression outcomes did not appear to be related to the type of compression noted at the time of surgery. This finding may be limited by the low number of patients in the categories outside of arterial compression only.

### Learning Objectives

1. There does not appear to be a definite correlation between the type of vascular compression and long term pain outcomes.
2. Practioners may report the type of compression to patient's, but should refrain from reporting confidence in future outcomes based upon vascular compression seen at surgery.
3. As data collectioin continues, a pattern of compression and outcome may emerge.

### References

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