

# Analysis of Failed Microvascular Decompression in Hemifacial Spasm and Feasibility of Redo Surgery Seunghoon Lee MD; Kwan Park MD Department of Neurosurgery, Samsung Medical Center, Sungkyunkwan University School of Medicine, Seoul, Korea

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### Introduction

Hemifacial spasm is a neurovascular compression syndrome at the root exit zone of facial nerve, and microvascular decompression (MVD) is the only curative treatment that guarantees a long-term spasm-free. The variable responses, i.e. immediate, gradual, wax-and-wane, delayed, and no responses, have been reported, and which imply that at certain time of the clinical pathway, spasm recurrence or treatment failure should be taken into consideration and decision for the additional treatment should be made. For now, there is no consensus on minimum observation period, the timing of redo MVD, and causes to explain MVD failure.

#### Methods

The study included 16 consecutive patients who were operated by redo MVD during the last two decades. Their medical charts were retrospectively reviewed for preoperative medical history, initial and redo MVD intraoperative findings, and initial and redo MVD postoperative outcome. "At least one year, till three years" rule was applied for the patient if the previous surgery was sufficient: when the indentation or discoloration on facial nerve was identified. Early redo MVD was recommended for the patient who never experienced spasm relief and the surgery was insufficient.



#### Results

Median interval between initial and redo MVD was 34.8 months (range, 0.1-143.8). Possible causes of initial MVDs were missed offending vessel, insufficient decompression, and teflon migration. 88% of patients showed disappearance of abnormal muscle response after decompression intraoperatively. BAEP change was monitored during surgery in 37.5%. During median follow-up of 16.0 months (range, 5.3-152.0), 81.3% of the patients after redo MVD showed spasm-free at their last follow-up. Permanent hearing impairment and facial palsy were observed in one and two patients, respectively. One cerebellar infarction due to cortical branch of PICA injury during dura opening occurred without significant symptom. There was no mortality.



#### Possible causes of initial MVD failure

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Missed offending vessel	7
Insufficient decompression	5
Teflon migration	3
Unidentified	1
Clinical outcomes after re	edo MVD
HF S-free	00.00/
Immediate	68.8%
1 month	75.0%
1 year	71.4%
Last f/u	81.3%
Complications	
Permanent hearing loss	6.3%
Permanent facial palsy	12.5%
Others (Cbll infarction)	6.3%

## Conclusions

Redo MVD can be delayed at least 1 year till 3 years if the surgeon who performed the initial surgery was confident in identification of neurovascular conflict and sufficient decompression. Otherwise, early redo MVD is recommended. During redo MVD, withdrawal of all teflon felt is not necessary. 360° and whole segment of facial nerve should be explored, especially focusing on medially located vein or arterial offender located at cisternal segment. Redo MVD is still a feasible treatment option for recurrent HFS patients.

#### Learning Objectives

Identify possible causes of prior MVD failure and know what to achieve during redo MVD.