

Mini Endoscopic Assistance in Failed Microvascular Decompression for Hemifacial Spasm

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Purpose

Microvascular decompression (MVD) is the definitive treatment for hemifacial spasm. Persistent or early recurrent symptoms after apparently adequate decompression suggest incomplete identification of vascular conflict. This video demonstrates the role of mini-endoscopic assistance in identifying residual compression during re-exploration.

Methods

An 83-year-old woman with progressive right hemifacial spasm underwent right retrosigmoid MVD.

Preoperative MRI demonstrated:

- PICA contact at the facial nerve root entry zone
- AICA meatal loop contact along the cisternal segment

Intraoperative lateral spread monitoring was utilized throughout both procedures.

Following early recurrence of symptoms, the patient underwent re-exploration using a mini-endoscopic platform (Colibri micro-endoscope).

Initial Operation: Intraoperative Findings

Approach: Right retrosigmoid craniotomy
Findings:

- Large AICA loop embedded at the facial nerve root entry zone
- Labyrinthine branch contacting the proximal facial nerve
- Both vessels were elevated and separated from the nerve with Teflon padding.

Monitoring:

- Upper-to-lower and lower-to-upper lateral spread responses present pre-decompression
- Lower-to-upper response resolved
- Persistent upper-to-lower response remained

No additional vascular conflict was identified microscopically.

Clinical Course

- Immediate postoperative resolution of spasm
- Discharged postoperative day 1
- Recurrence of periorbital spasm by postoperative day 3
- Persistent upper-to-lower lateral spread on monitoring
- Re-exploration performed on postoperative day 4.

Re-Exploration – Endoscopic Findings

The prior retrosigmoid corridor was reopened.

Microscopic inspection:

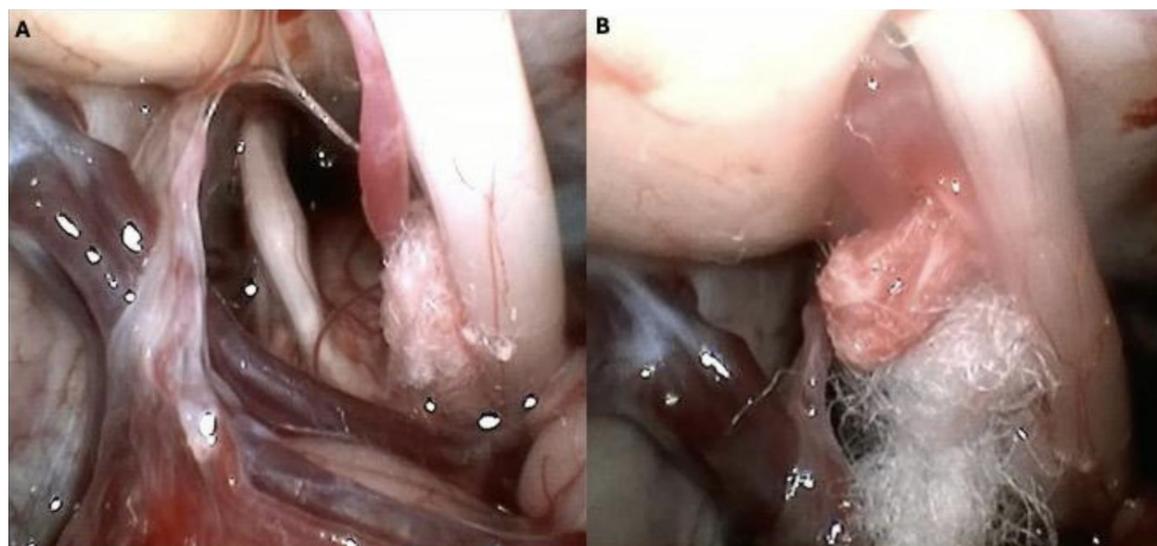
- Intact Teflon pledgets
 - No residual compression at root entry zone
- Mini-endoscopic inspection:
- Distal superior vascular contact beyond prior padding
 - Conflict not visible under microscopy
 - The vessel was dissected distally and separated with additional Teflon.

Monitoring:

- Complete resolution of both upper-to-lower and lower-to-upper lateral spread



FIGURE



Endoscopic views obtained with the Colibri scope during microvascular decompression for hemifacial spasm. (A) After the initial decompression under the microscope, the Colibri scope revealed an additional distal vascular conflict along the facial nerve that was not apparent microscopically. (B) Following decompression of this site with Teflon interposition, intraoperative monitoring demonstrated improvement with decreased lateral spread response along the facial nerve.

Results

- Immediate and complete resolution of hemifacial spasm
- Discharged postoperative day 1
- No further recurrence

Discussion

Early recurrence following MVD may represent missed distal or ventral vascular compression.

Mini-endoscopic assistance:

- Enhances visualization beyond the microscopic line of sight
- Allows circumferential inspection of the facial nerve
- Facilitates identification of distal or superior conflicts
- Intraoperative lateral spread monitoring provides real-time physiologic confirmation of decompression completeness.

CONCLUSION

Mini-endoscopic assistance is a valuable adjunct in failed or incomplete microvascular decompression for hemifacial spasm. Routine circumferential inspection of the facial nerve may improve durability of decompression.

Video Demonstration

https://drive.google.com/file/d/1Zb888wJsIdeD2N8cSm_J9PKtrgtq1Gi/view?usp=drive_link