

# Colibri Micro-ENT Scope for Enhanced Visualization During Microvascular Decompression: Initial Case Series

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## INTRODUCTION

Microvascular decompression (MVD) remains the gold standard for trigeminal neuralgia (TN) and hemifacial spasm (HFS). Adequate visualization of the cerebellopontine angle (CPA) and nerve root entry/exit zones is critical to durable decompression. Endoscope-assisted MVD has gained adoption to improve visualization of:

- Hidden neurovascular conflicts
- Distal nerve segments
- Angled vascular loops

However, traditional rigid endoscopes may introduce ergonomic strain, instrument crowding, and workflow disruption.

The **Colibri micro-ENT scope**, originally designed for otologic surgery, is a lightweight (20 g), 2.3-mm diameter device with integrated suction and ergonomic stabilization features. Its application in neurosurgical procedures has not previously been reported

## PURPOSE

To evaluate the feasibility, visualization quality, and early clinical outcomes of the Colibri micro-ENT scope as an adjunct to microscopy during MVD.

## METHOD

### Study Design

Retrospective case series of patients undergoing microvascular decompression in which the Colibri micro-ENT scope was used as an adjunct to standard microscopic technique.

### Patient Cohort

Total patients: 6  
Trigeminal neuralgia: 2  
Hemifacial spasm: 4  
Mean age: 48 years

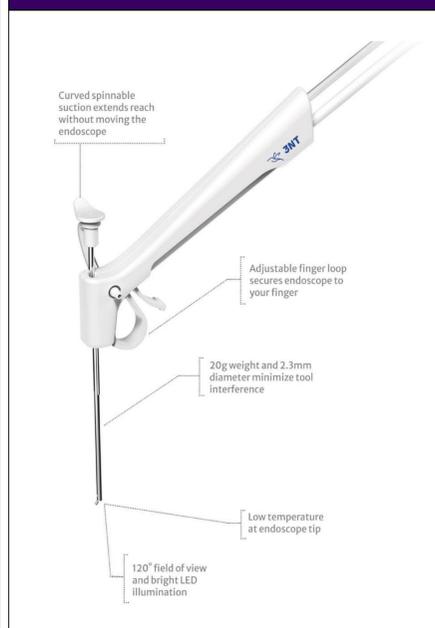
### Surgical Technique

All procedures were performed via a standard retrosigmoid approach. The operating microscope was used for primary dissection and decompression. The Colibri scope was introduced in a handheld fashion at key operative stages for targeted inspection of the neurovascular interface and confirmation of decompression.

### Outcomes Assessed

Visualization quality  
Identification of offending vessels  
Detection of additional neurovascular conflicts  
Ergonomics and workflow integration  
Operative time  
Perioperative complications  
Short-term clinical outcomes

## FIGURE



## FIGURE



## RESULTS

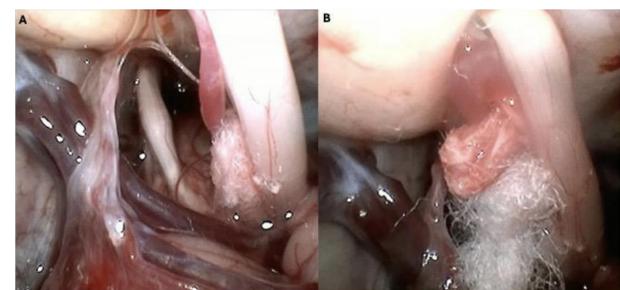
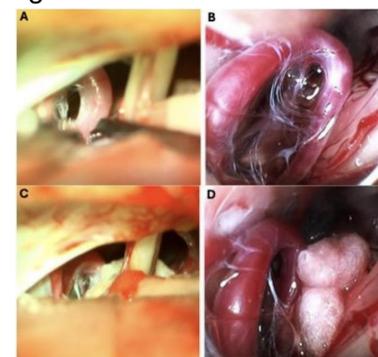
### Visualization

In all cases, the Colibri scope provided enhanced close-up visualization of the neurovascular interface compared with microscopy alone. Endoscopic inspection identified **additional vascular conflicts not appreciated microscopically in 6 of 6 cases**.

### Representative Cases

In patients with hemifacial spasm, endoscopic views improved visualization of arterial loops contacting the facial nerve complex. In one case, a distal vascular conflict along the facial nerve was identified only with endoscopic inspection, prompting additional decompression.

Post-decompression endoscopic inspection confirmed adequate separation between the offending vessel and the nerve.



### Operative Metrics and Safety

Operative times were comparable to standard MVD  
No complications attributable to endoscope use  
No endoscope-related thermal or mechanical injury

### Clinical Outcomes

At short-term follow-up (mean 3.1 months), all patients experienced improvement in presenting symptoms.

## CONCLUSION

The Colibri micro-ENT scope is a safe and effective adjunct to microscopy during microvascular decompression. Its ergonomic design and enhanced visualization capabilities enable identification of neurovascular conflicts not apparent with microscopy alone. Further comparative and prospective studies are warranted to define its role within the evolving landscape of endoscope-assisted skull base surgery.