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#### A new look at middle ear adhesions: transcanal endoscopic approach to aditus block

Presenting Author: **Manuela Fina**

Manuela Fina

*Assistant Professor, University of Minnesota*

**Learning Objectives:** To illustrate the anatomy of the middle ear ventilation routes to the attic, to understand the pathophysiology that leads to aditus block syndrome and to show how to functionally restore the blocked pathways of ventilation.

**Introduction:** This narrated six minutes surgical video illustrates a novel concept to treat aditus ad antrum block syndrome through an exclusive transcanal endoscopic approach. Granulation tissue and mucosal webs obstructing the pathways of ventilation from the tympanic isthmus to the mastoid space are removed endoscopically with sparing of mastoidectomy and preservation of mastoid mucosa.

**Methods:** A pre-operative CT scan of the temporal bone was obtained for surgical planning. The surgery was performed entirely through a transcanal endoscopic approach with rigid 0 and 30 degree endoscopes, 3 mm in diameter and 14 cm in length, connected to a video camera and high definition monitor. Inflammatory granulation tissue and mucosal webs obstructing the movement of the ossicular chain and the ventilation routes to the mastoid were removed with sharp dissection without mastoidectomy. The routes of ventilation to the mastoid were re-established and irrigated through a transcanal endoscopic limited atticotomy and the small scutal defect was repaired with a cartilage graft.

**Results:** Inflammatory granulation tissue and mucosal webs obstructing the pathways to mastoid ventilation were removed successfully through a transcanal endoscopic approach with integrity of the mastoid space and preservation of mastoid mucosa.

**Conclusion:** This endoscopic minimally invasive novel approach to mastoid ad antrum block syndrome focuses on functional restoration of the aeration pathways through the tympanic isthmus instead of removal of disease through mastoidectomy. With this approach the epitympanic and mastoid mucosa is preserved to maintain the important function of mucosal gas exchange, buffer mechanism and homeostasis of middle ear ventilation.

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#### Endoscopic Combined Approach for Attic Cholesteatoma with Mastoid Extension

Presenting Author: **Manuela Fina**

Manuela Fina

*Assistant Professor, University of Minnesota*

**Learning Objectives:** This eight minutes narrated surgical video demonstrates the surgical principles of the combined endoscopic and microscopic approach for an extensive epitympanic cholesteatoma with mastoid extension.

**Introduction:** This narrated video lecture illustrates the indications to utilize a combined technique with transcanal endoscopic atticotomy and microscopic mastoidectomy for cholesteatoma with mastoid antrum extension in a pediatric case.

**Methods:** A pre-operative endoscopic exam and a CT scan of the temporal bone were obtained for surgical planning. The endoscopic portion of the surgery was performed with rigid 0, 30 and 45 degree endoscopes, 3 mm in diameter and 14 cm in length, connected to a three chip video camera and high definition monitor. A microscopic mastoidectomy was performed to remove disease in the mastoid antrum.

**Results:** Cholesteatoma was removed in its entirety through a combined endoscopic and microscopic approach. The cholesteatoma extended medially to the ossicular chain and the head of malleus and incus were removed. Ossicular chain reconstruction was performed with autologous incus. The atticotomy defect was reconstructed with a composite graft of conchal cartilage and perichondrium. The patient was free of disease at second look transcanal endoscopic surgery with excellent hearing result.

**Conclusions:** Endoscopic ear surgery offers wide field visualization of the attic space and the mastoid antrum. When cholesteatoma has extension into the mastoid space posteriorly to the point of reach of the endoscopic technique, a microscopic mastoidectomy is required for complete eradication of mastoid disease. This surgical case demonstrates how the endoscopic and microscopic surgical approach to cholesteatomas are not exclusive of each other but they can be utilized in combination to fully visualize and remove extensive disease.

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#### A case of idiopathic oculostapedial synkinesis without history of facial nerve palsy

Presenting Author: **Keishi Fujiwara**

Keishi Fujiwara<sup>1</sup>, Yasushi Furuta<sup>2</sup>, Shinya Morita<sup>1</sup>, Atsushi Fukuda<sup>1</sup>, Akihiro Homma<sup>1</sup>, Takatsugu Mizumachi<sup>1</sup>, Satoshi Fukuda<sup>1</sup>

<sup>1</sup>Hokkaido University, <sup>2</sup>Teine-Keijinkai Hospital