

## Imaging Case of the Month

# Temporomandibular Joint Herniation Into the External Auditory Canal

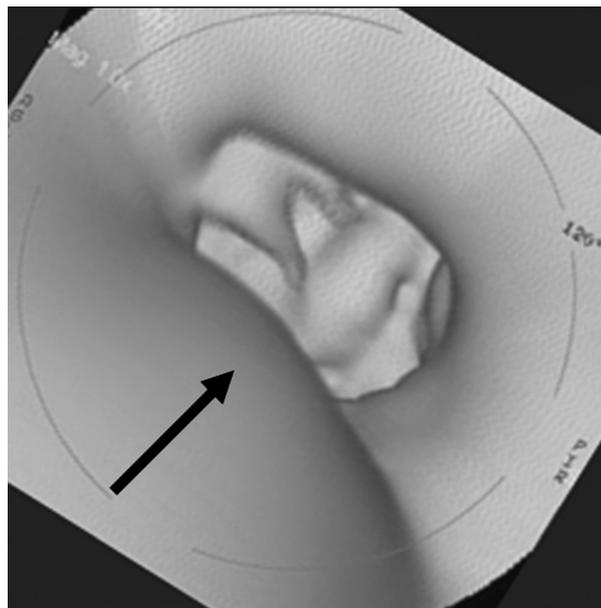
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The herniation of the temporomandibular joint (TMJ) structures into the external auditory canal (EAC) occurs as a consequence of a bone defect in its anteroinferior wall. Neoplasms, trauma, inflammatory, and congenital diseases are potential causes of such bone defect. Our



**FIG. 1.** Coronal computed tomographic image of the left EAC (bone window) shows a bone defect of the anteroinferior wall of the EAC (arrow) with herniation of soft tissue material (closed mouth).

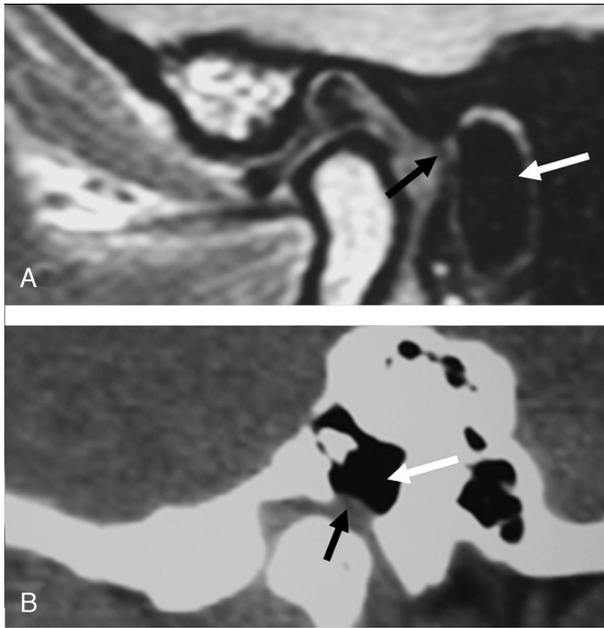


**FIG. 2.** Three-dimensional computed tomographic reconstruction of the left EAC demonstrates a bulging in its anteroinferior segment (arrow) in closed mouth.

aim is to present a patient with persistence of Huschke foramen (foramen tympanicum), which is a rare congenital cause of TMJ herniation into the EAC (1–3).

This foramen is present during the embryologic development of the temporal bone, and its closure normally occurs during the first 5 years of age. In adults, the Huschke foramen persistence can cause complications such as external and middle ear inflammation, infectious arthritis, TMJ herniation, and fistulas. Symptoms usually become more prominent after weakness of Huschke foramen edges secondary to masticatory

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**FIG. 3.** Sagittal T1-weighted magnetic resonance (A) and sagittal computed tomographic (B) images show herniation of the TMJ retrodiscal tissues (black arrow) extending into the anteroinferior portion of the EAC (white arrow).

movements, which may widen a bone defect with initially lesser dimensions. Recognition of this bone defect is crucial to prevent iatrogenic complications, mainly

related to surgical and invasive procedures as TMJ arthroscopy. The most common symptoms are otorrhea, otalgia, tinnitus, and hearing loss. Otorrhea usually begins during masticatory movements. The TMJ herniation into the EAC is usually visible only when the patient has his mouth closed, retracting out of the EAC during the mouth opening. Most patients are women, the findings are usually unilateral, and the average age is 55 years (2).

Temporomandibular joint computed tomographic images with closed mouth show a bone defect in the anteroinferior wall of the EAC and a soft tissue mass extending from the TMJ into EAC (Figs. 1 and 2). In spontaneous cases of TMJ herniation, this bone defect is located in the site of Huschke foramen. Magnetic resonance imaging scan with closed mouth demonstrates better the left TMJ retrodiscal soft tissue insinuating through the bone defect (Fig. 3).

#### REFERENCES

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