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Case Report and Review of the Literature

A Rare Case of Spontaneous Herniation of Temporomandibular Joint Through Patent Foramen Huschke Presenting with Otalgia: A Case Report and Literature Reviews

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ABSTRACT

We report a rare case of Spontaneous Temporomandibular joint herniation through patent foramen Huschke, which is a congenital bony defect in the external auditory canal. Herniation of temporomandibular joint tissue through the ear canal usually results from infection, trauma, or surgery. Awareness of this rare clinical entity is vital to help the correct diagnosis.

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Introduction

Spontaneous temporomandibular herniation (STMJH) is due to congenital bony defects in the anteroinferior canal wall auditory canal, such as patent foramen of Huschke, which is a rare condition, affecting only 0.4% of the population [1]. Emil Huschke, in 1858, was the first German anatomist; he described anatomical structures, including Huschke foramen [2, 3]. Almost all reported cases are unilateral; only one case reported bilateral spontaneous herniation of TMJ [4]. These abnormal conditions cause various otological symptoms, such as clicking tinnitus, conductive hearing loss, otalgia, and TMJ pathologies, and can be a transmission point of infections and tumors, between the temporomandibular joint, infratemporal fossa, and external auditory canal.

Case Report

35-year-old woman presented to our ear, nose and throat out-patient clinic with right-sided earache of three weeks duration. She did not give the history of ear trauma, infection, or surgery. Microscopic examination revealed an interior ear canal mass with no signs of ear infection.

Otoscopic examination showed a protruding right ear canal mass with jaw movement (Figure 1), bulging with opening of the mouth and the mass was retracted anteriorly, leaving an invagination within the meatus indicating an ear canal defect. CT scan confirmed anterior bony ear canal defect with protrusion of temporomandibular tissue through the defect into the ear canal (Figure 2), confirming the diagnosis of patent foramen Huschke, which is a very rare clinical entity. This patient did not want surgical intervention; therefore, this patient was treated conservatively.



TMJ
herniation

Figure 1: Otoscopic view showing right anterior ear canal TMJ herniation.

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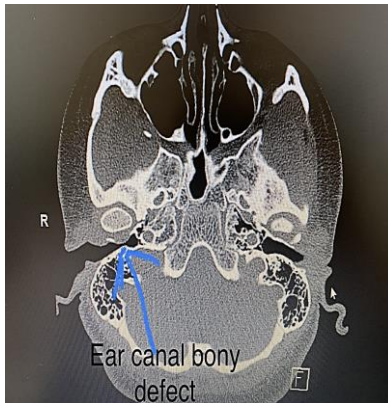


Figure 2: CT scan showing anterior bony canal defect and herniation of TMJ confirming patent foramen Huschke.

Discussion

The foramen of Huschke is a developmental bony defect in the anteroinferior canal wall which communicates with external auditory canal and the infra-temporal fossa (Link). Normally, this bony defect closes at the age of five years by the fusing four ossification centers which appears around the tympanic membrane, making a tympanic ring. Failure of fusion of these four ossification centers during the first years of life, leads to patent foramen Huschke, which is normally open at birth.

Reported cases of spontaneous TMJ herniation are very limited worldwide. In the literature review, the age of incidence is between 15 to 87, mostly (88%) in the age of 50 with non-specific signs and symptoms. Two prominent symptoms are otalgia and clicking tinnitus (36%), followed by otorrhea (32%), hearing loss (20%) and aural fullness (10%), while 8% of asymptomatic was reported [5]. In some other patients' temporomandibular joint pain and salivary gland discharge from the EAC also reported.

Mechanical stress of the TMJ is thought to cause herniation. As the pressure of TMJ movements are transmitted to the weak anterior wall of the EAC with a PFH, the foramen enlarges over a long period, and the joint capsule and retrodiscal tissue or disc gets pulled through the foramen, prolapsing or spontaneously herniating into the EAC, which causes the unique CT signs [3]. Park, *et al.* reported that persistent foramen of Huschke was in 1.5% of all cases, but the TMJ soft tissue herniation was noted in 26% of persistent foramen of Huschke cases in spite of the EAC anterior wall defect [6]. Physical examination (otoscopy) findings and radiological examinations are the two key components for the diagnosis.

The symptoms of STMJH are non-specific; however, the otoscopy findings are characteristics. CT scan is very sensitive in detecting the osseous defect, the size, location of the herniation and for the differential diagnosis as well. MRI is suggested when the herniation is complicated with an infection, otitis externa, or TMJ dysfunction [3]. Spontaneous temporomandibular herniation (STMJH) causes stenosis of the EAC, the skin of the external auditory canal (EAC) becomes more easily damaged, and herniation is often accompanied by inflammatory lesions in the EAC, such as eczema and granulation tissue. As a result of extensive inflammation of the EAC and herniation sometimes misdiagnosed as

otitis externa. A CT is useful for the differential diagnosis. Asymptomatic patients or patients with minimum symptoms can be treated conservatively, with observation of the herniation as the main treatment strategy [3]. If a patient has an excessively large hernia, severe ear fullness, or repeated ear canal infection, then the surgery will be an option, which depends on the patient's willingness and suitability for surgery [1]. If the symptoms include TMJ pain, malocclusion, or tinnitus while chewing, a consultation with oral and maxillofacial surgeons is necessary [3].

Surgical treatment depends upon the type and size of the defect, which includes hernia resection and bony defect repair through the pre-auricular or endaural approach based on anterior exposure of the tympanic bone. The tragal cartilage is the best and preferred option for grafting [6]. But various other materials have also been used to close this type of defects, such as fascia, bone chips, polypropylene plate, collagen mesh and titanium mesh.

Conclusion

We report a very rare case of spontaneous herniation of the temporomandibular joint through patent foramen Huschke. Awareness of this rare medical condition can help the correct diagnosis of a protruding ear canal mass of unknown aetiology.

Conflicts of Interest

None.

Funding

None.

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