

Pneumoarthrosis of the Temporomandibular Joint (Case Report)

Hisham Mohammed Ali Khalil

B.D.S., M.Sc. Oral Surgery, F.I.C.M.S Board Maxillofacial Surgery

Abstract: *The temporomandibular joint and the external ear canal are separated anatomically by the thin tympanic plate of the temporal bone. Tharanon in 1994 said that the tympanic plate may be incomplete in 27% of patients, resulting in a small bony foramen (foramen of huschke).*

Keywords: Pneumoarthrosis of the temporomandibular joint

1. Introduction

The temporomandibular joint and the external ear canal are separated anatomically by the thin tympanic plate of the temporal bone. Tharanon in 1994 said that the tympanic plate may be incomplete in 27% of patients, resulting in a small bony foramen (foramen of huschke).

Causes of Pneumoarthrosis

- The tympanic plate is commonly fractured in facial trauma especially when there are sub condylar fractures of the mandible. It may be also be performed intragenically during otologic or TMJ surgery
- Infection following the path of least resistance, can produce such a fistula, and they have been reported to follow chronic or malignant otitis externa Drew SJ, J1993
- Herniation of the TMJ capsule into the external ear canal, without fistulous communication has also been reported.Hawk M, 1987
- Osteoradionecrosis also may have produced dehiscence in the tympanic plate, finally, the patient may have had a congenital foramen of huschke

In all of these situations, there is a potential path of communication between the two structures

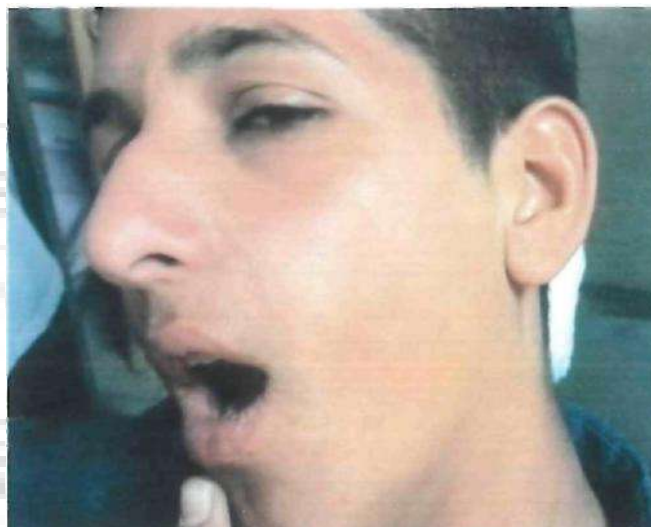
2. Pathophysiology

- In the TMJ-EAC fistula allowed air to be drawing into the synovial compartment when the mouth was opened
- The air was then trapped within the joint and adjacent tissues when the mouth was closed; we have termed this condition Pneumoarthrosis of the TMJ.

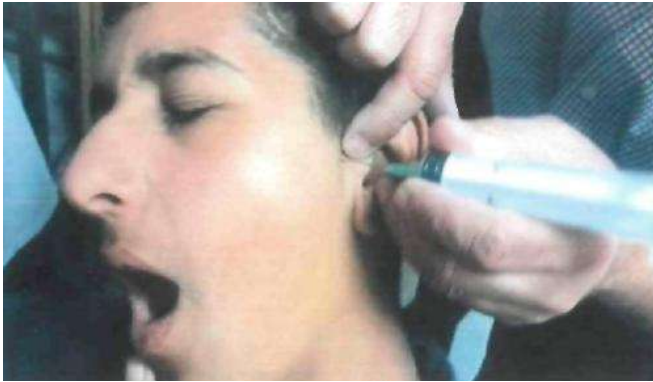
Clinical Features

The patient was referred with a complaint of pain and an unusual noise in the area of TMJ, which could be heard when the patient opened or closed his

tn.nu.th



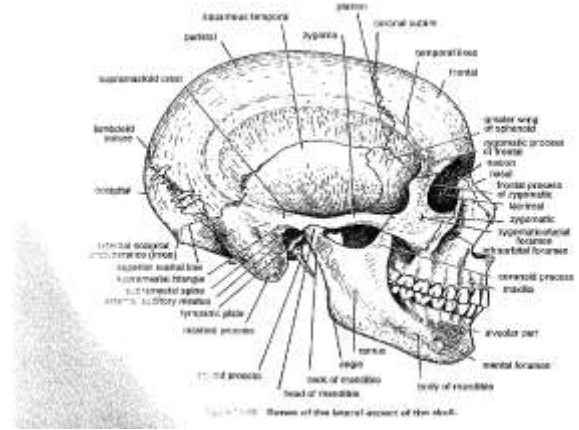
A 25-gauge needle was placed in the superior synovial compartment of the TMJ, and several cubic centimeters of air could be withdrawn. The noise immediately disappeared, but it then repeated as the patient opened and closed his mouth several times. Air could again be withdrawn through the needle.



A computed topographic scan was performed, showing a breach in the tympanic plate of the temporal bone.



This arrow to show breach in the tympanic plate



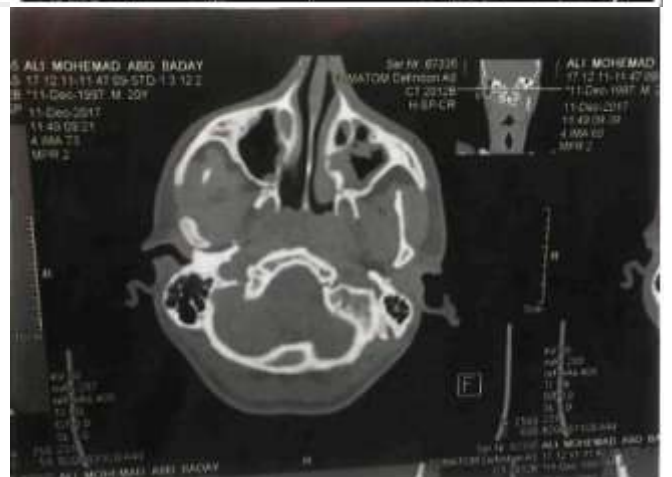
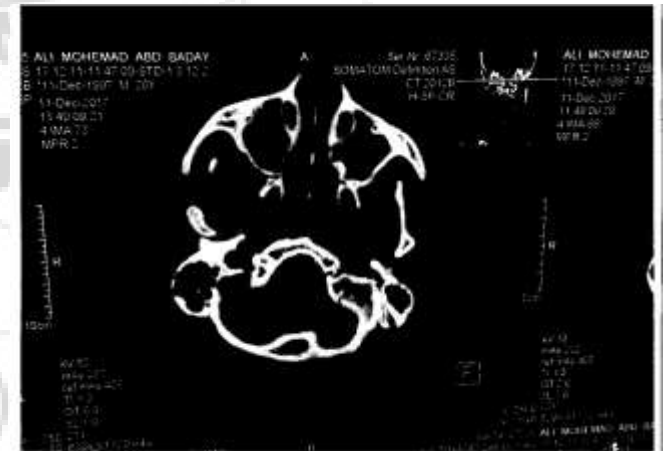
3. Surgery

Surgical procedure through a preauricular incision, the posterior portion of the glenoid fossa of the temporal bone was approached sub-posteriorly. Dissection was carried down to the tympanic plate, where a 3mm. Bony dehiscence was encountered. No necrotic bone was seen, a band of tissue extended across the dehiscence from the EAC to the joint capsule. This tissue removed and a 1-cm square of fasciallata was removed from the lateral thigh, trimmed and placed over the bony window.





This C.J scan to show faciolata after three years of the surgical operation



This C.T scan to show faciolata after three years of the



surgical operation.

References

- [1] DREW SJ, HIMMELFRB, SCIUBBAJJ: Invasive externa otitis progressing to osteomyelitis of the TMJ. J Oral maxillofac Surg, 1993
- [2] HARRY C. SCH WARTZ and ASHRAF SEDHAM: Chief of maxillofacial surgery, southern California permanent medical Group, Los Angeles J maxillofac surg, March, 1997.
- [3] HAWKEM, KWAKP, MEHTAM: Bilateral spontaneous TMJ herniation into the external auditory canal. J otolaryngo, 1987.
- [4] THARANON W, SINN DP, CULBERTSON MC, et al: Surgical correction of antral - TMJ fistula with a temporalis flap. J oral maxillofac surg 52: 197, 1994.
- [5] SNALE: Text book of anatomy

