CT-SCAN prognostic factors of stapes surgery for otosclerosis
A descriptive and analytic study.

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Abstract

The role of computed tomography (CT) in the prediction of results in stapes surgery for otosclerosis represents a matter of controversy. In fact, some discordance exists in the literature about prognostic value of CT findings.

Table: Distribution of patients according to Veillon's classification

Radiological type	Number of ears	Percentage
Type 0	3	6%
Type Ia	4	7%
Type Ib	5	9%
Type II	22	41%
Type III	8	15%
Type Iva	7	13%
Type IVb	5	9%
Total	54	100%

Résultats

- Mean age: 46 years old with extremes varying between 18 and 75 years.
- Female predominance with a sex-ratio of 0.51.
- Deafness : bilateral in 33 patients (66%) and unilateral in 17 cases (34%).
- A conductive hearing loss : found in 67% of the cases.
- Sensitivity of the pre operative CT-scan : 94%
- The stage II of Veillon CT grading : the most detected (41%).
- Audiometry after surgery : successin 72% of cases according to the criteria of CR ≤0 and in 81% according to the criteria of RABG ≤ 10.
- CT-scan prognostic factors were analyzed by correlating the CT findings and postoperative audiometric parameters :The localized radiological stages type I and II of Veillon were associated with better success rates for RRPO and RC (p<0.001 and p=0.0016).
- The absence of endosteal breach was identified as a predictive factor for favorable functional outcomes in stapes surgery, with a significant difference for both success parameters used (p=0.039 and p=0.0059).
- The absence of round window involvement was identified as a factor influencing postoperative Rinne closure (p=0.005).
- The absence of anatomical variants detected on the CT scan was also associated with a better Rinne closure rate (p=0.0033).
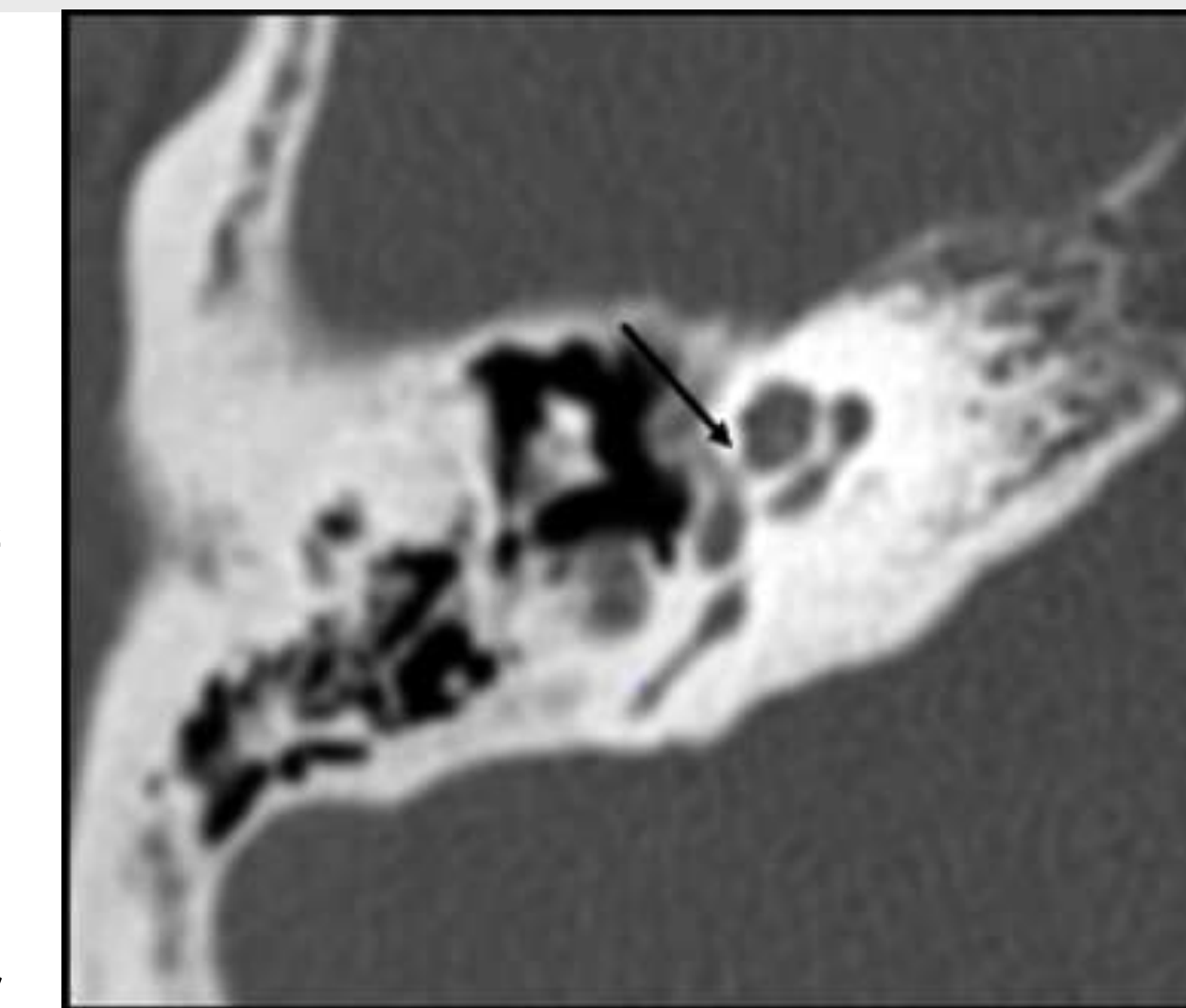

Figure 1 :CT scan of the right temporal bone in axial section showing a type III otospongiosis focus, associated with an endosteal breach (Arrow).

Objectifs

to evaluate CT-scan prognostic factors in otosclerosis by correlating postoperative audiometric results and CT findings.

Conclusion

High resolution computed tomography (HRCT)of the temporal bone before surgery can evaluate predictive factors of good functional results. Thus, HRCT should be practiced before stapes surgery for otosclerosis, as it may be helpful to predict the functional outcome.

Figure 2 : Axial CT scan of the left temporal bone showing a pre-stapedial hypodensity in contact with the cochlea, suggestive of type III otosclerosis.

Méthodes et Matériels

- a retrospective, descriptive and analytic study, including 50 patients .
- in the radiology and Otorhinolaryngology departments of Mohamed Taher Maâmouri Hospital, Nabeul
- a period of 6 years, from January 2013 to December 2018
- Temporal bone CT before surgery and post operative audiometric evaluation, over a period of at least one year.
- A residual air-bone gap (RABG) ≤ 10 dB and a cochlear reserve (CR) ≤0 were chosen as success criteria

Références

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