

## Abstract

The aim of this study is to assess and report effects of otitis media with effusion on surgical difficulties, and the post-operative complications in cochlear implantation. A retrospective chart review of patients from a large cochlear implant program was conducted in ENT- head and neck surgery department, Arrazi Hospital, University Hospital of Marrakech, Morocco. We carried out a comparative study between group A candidates operated with OME after medical treatment failure and group B candidates operated without OME. 24 patients have benefited from unilateral CI with OME after failure of medical treatment with some surgical difficulties but no long-term post-operative complications. Current results revealed that CI is generally safe in children with OME and that delaying the implantation process might be unnecessary.

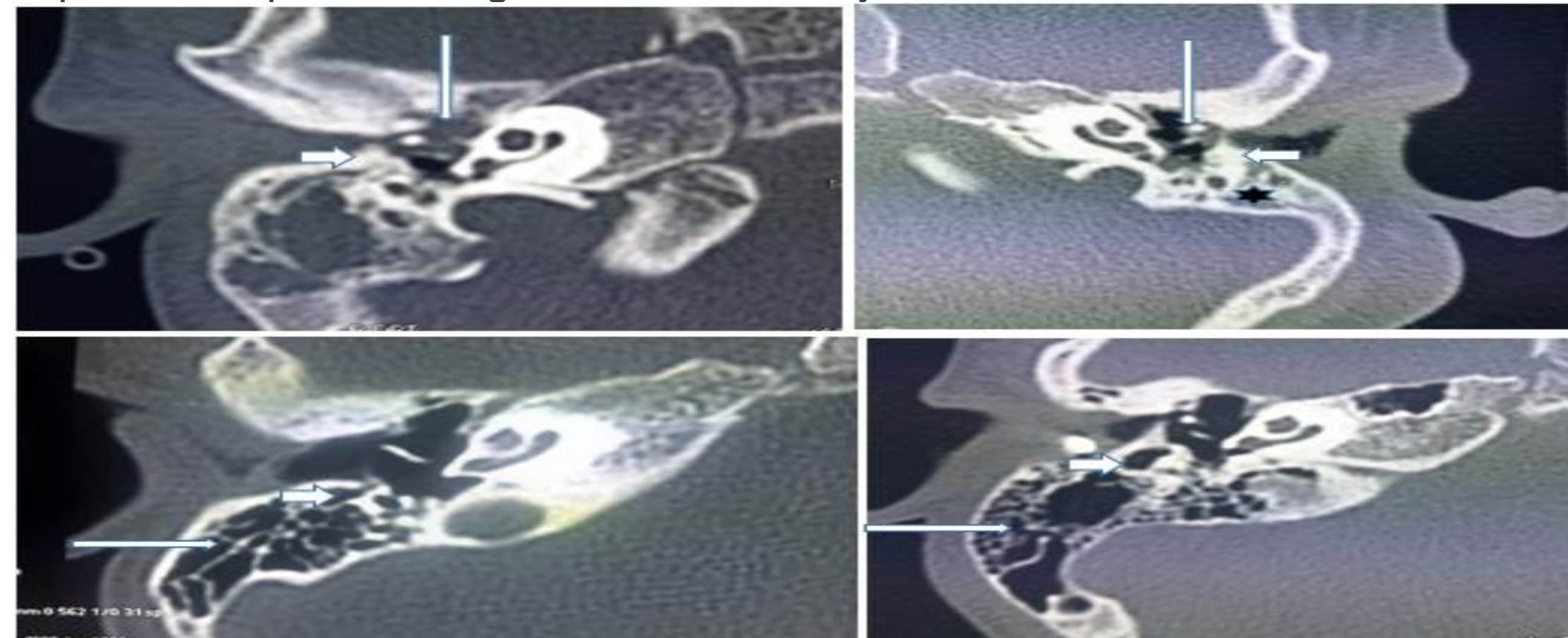


Figure 1: Axial CT scan of two candidates for CI with OME, showing Opacification of middle ear cleft (long arrow), sclerotic facial recess (short arrow) and poorly pneumatized mastoid and dense bone formation (asterisk).

Figure 2: Axial CT scan of two candidates for CI without OME, showing facial recess air cell (small arrow) in a normal ear, with normal pneumatization of middle air cleft and mastoid (long arrow)

## Objectifs

The cochlear implant (CI) is an effective treatment for children with severe to profound sensorineural hearing loss. Children before school age have a higher incidence (90%) of otitis media with effusion (OME). CI in the presence of OME is a challenging condition, due to the incidence of its complications (1.7% to 4.1%) The aim of this study is to compare in two paired samples of patients with OME and patients without OME, the results, the surgical difficulties, and the post-operative complications of CI.

## Méthodes et Matériels

Single-center retrospective and comparative case-control study that includes pediatric patients who underwent CI surgery for severe to profound hearing loss (January 2010- August 2022) in the ENT-HNS department, Arrazi Hospital, Marrakech, Morocco. 50 CI candidates suffered from bilateral OME before surgery. The OME diagnosis was based on otoscopy, tympanometry and CT scan. 2 paired samples of patients: Group A: 24 children who underwent CI surgery with OME Group B: 24 children who underwent CI surgery without OME

## Résultats

Mean age: 3.3 years old ( 20 months- 7 years old). No gender predominance. Swab samples showed no bacterial growth, CT scan results are shown in Table 1 with more cases of middle ear cavity fullness, less pneumatized mastoid and sclerotic facial recess in the OME group

	Group A: patients with OME	Group B: patients without OME
Opacification of middle ear cleft	18 (75%)	2 (8.33%)
poorly pneumatized mastoid	19 (79.17%)	3 (12.5%)
sclerotic facial recess (absence of air cell)	13 (54.17%)	3 (12.5%)

Table 1: Computerized tomography scans results:

	Group A: patients with OME	Group B: patients without OME
Excessive bleeding	17 (70.83 %)	01 (4.17 %)
Mastoid granulations tissue	10 (41.67%)	00 (0%)
Congested mucosa	16 (66.67 %)	02 (8.33 %)
Chorda tympani injury	09 (37.5 %)	04 (16.67 %)
Difficulty in visibility of RW	04 (16.67 %)	03 (12.5 %)

Table 2: surgical finding and difficulties

Intra-operating findings are shown in table 2, with excessive bleeding, granulated and congested mucosa are more frequent in group A. Surgery duration average was 60 minutes ( 45-75) for group B and 85 minutes ( 60-110) for group A. All electrodes were successfully inserted in patients of both groups. Post-op follow-up ranged from 1 to 12 years. Some transient complications were noted in Group A; 2 cases of mastoiditis at 6 and 18 months after surgery and 1 case of wound infection without CI exposure. In Group B: 1 case of meningitis, 1 case of grade III facial palsy which recovered within two weeks, and 2 cases of acute otitis media more than 4 years after surgery

## Conclusion

Otitis media with effusion (OME) prior to CI surgery is associated with intraoperative technical difficulties, such as mastoid granulation, impaired visualization and bleeding. Due to this, locating and opening the round window can be more challenging. Our results revealed that CI is generally a safe surgery in children with OME and that delaying the implantation process might be unnecessary.

## Références

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