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Chronic Otitis Media Complicated of Cerebral Abscess: About A Case

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Abstract **Case Report**

We present a case of a 23-year old patient who has chronic otitis media, complicated by a brain abscess followed by a meninges syndrome resistant to anti-bithicotherapy. We report the interest of diagnosis by CT and MRI imaging and cytobacteriological study and antibiogram according to the germ incriminates. The patient received a stereotactic drainage puncture, or the bacterial study and otological sampling were in favor of Pseudomonas aerogenosas and antibiotic therapy. A closed technique tympanoplasty is then performed with excision of an aggressive cholesteatomy and reconstruction of the bone frames of the case as well as ossiculoplasty.

Keywords: Otitis, medium, complicated, abscess, cerebral.

INTRODUCTION

An abscess is a serious complication that requires immediate recognition and appropriate treatment. The cholesteatomatous otogen infection are often the causes of brain abscesses that are usually located on the same side of the ear sick. The most common microorganisms responsible for infection are Proteus mirabilis, Enterococcus and Pseudomonas aeruginosa, while Pneumococcus and Haemophilus are primarily responsible for intracranial complications due to chronic otitis [1-3].

OBSERVATION

We report the case of a woman aged 23 years followed for left middle ear developing since 8 years for which benefit several antibiotic treatment without improvement, who consults in the emergency room for a meningeal syndrome (head, fever associated with vomiting in jet and cervical stiffness) associated with otorrhea. Otoscopy of the left ear shows whitish otorrheas with a superior polyp (Figure 1). A lumbar puncture was performed with decapitated meningitis and the patient was placed on ceftriaxone in a meningeal dose. The evolution was marked by a clinical-biological improvement of meningeal syndrome and then more intense headaches have persisted with otorrhea. Bacteriological samples of the latter are in favour of Pseudomonas aerogenosa. CT and MRI of the brain showed a left temporal cerebral abscess and lateral homolateral sinus thrombophlebitis associated with complete filling of the left tympanum case and osselet lysis (Figure 3 and 4). The patient received a stereotactic drainage puncture and then a high dose of Meropenem and Metronidazole. A closed technique tympanoplasty is then performed with excision of an aggressive cholestéatome and reconstruction of the bone frame of the case as well as ossiculoplasty. The surgical follow-up was simple. ION

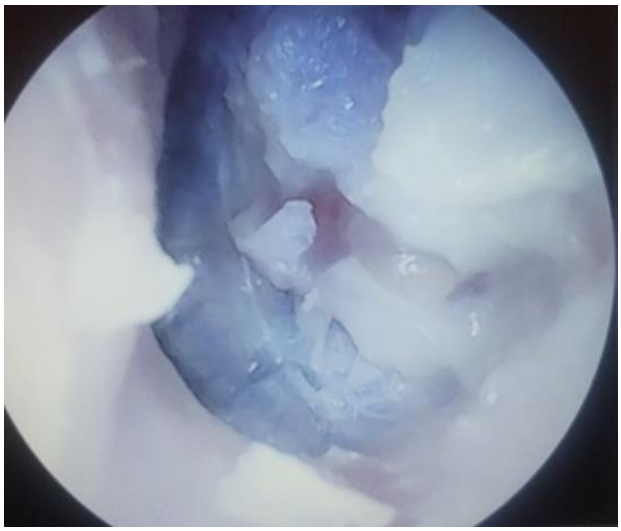

Figure 1: Otoscopy of the left ear presence of whitish secretion and polyp

Figure 2: CT of the left rock showing a filling of the tympanum case with lysis of the bones waiting for tegmen tympani

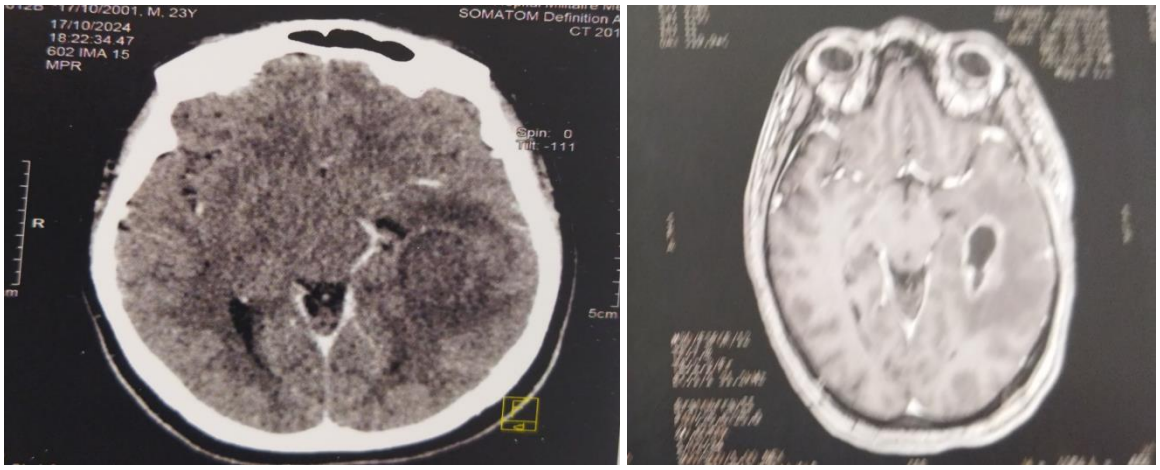

Figure 3 and 4: CT and MRI axial slices of brain showing left temporal abscess

DISCUSSION

Brain abscess is a serious complication of otitis media. It is rare and the resulting mortality is about 10% [4]. 54% of abscesses were in the temporal lobe, 44% in the cerebellum, and both locations in 2% of cases [5]. The infection spreads outside the middle ear by extension through demineralization causing pathological bone defects or bone erosion by cholesteatoma. In addition, it has been shown that infection can pass through normal anatomical channels or through the periarteriolar spaces of Virchow Robin. Meningeal infection results from passage through the dura, brain tissue is eventually reached [4].

The clinical characteristics of a brain abscess reflect the stages of development of the abscess. At the invasion stage, the patient has headaches, mild fever, discomfort and drowsiness. At the stage of localization, the patient is asymptomatic and a capsule forms. At the stage of expansion, the abscess widens and is surrounded by edema with increased intracranial pressure, focal symptoms and consciousness disorder. Rupture in the ventricle or subarachnoid space is often fatal [6]. CT is the reference exam providing details on mastoid bone erosion and can be used to identify the source of abscess and best therapeutic strategy [7]. Brain abscesses are usually found in the watershed regions between vascular territories connecting grey matter and white matter. These abscesses have smooth, uniform, thin-walled capsules with annular enhancement areas surrounding the hypodense centers. MRI provides more information than CT, including on the therapeutic response [7].

The initial antibiotic therapy should include broad-spectrum antibiotics that are effective against both anaerobic and aerobic organisms. When surgery is required, the neurosurgeon operates first and temporal bone management is considered separately. Mastoidectomy may be performed during the same procedure if the patient's condition permits, which may be impaired by inflammation. In the presence of a cholesteatomate, an open technique is performed to remove the cholesteatomate and control the infection. Allowing inflammation to subside can improve the effectiveness of cholesteatoma excision [8].

Conflicts of Interest: The authors declare that they have no conflicts of interest in relation to this article.

CONCLUSION

Despite its rarity, the abscess is a serious complication of CBT that requires urgent and appropriate management. The diagnosis is evoked before a middle ear associated with neurological signs. Diagnosis is confirmed by radiological and biological arguments. Otologic surgical techniques are varied, but closed techniques are the rule, with cartilage strengthening and ossiculoplasty if necessary. They are usually performed after a neurosurgical gesture if indicated.

BIBLIOGRAPHY

1. Penido, N. D. O., Borin, A., Iha, L. C., Suguri, V. M., Onishi, E., Fukuda, Y., & Cruz, O. L. M. (2005). Intracranial complications of otitis media: 15 years of experience in 33 patients. *Otolaryngology—Head and Neck Surgery*, *132*(1), 37-42.
2. Sharma, B. S., Gupta, S. K., & Khosla, V. K. (2000). Current concepts in the management of pyogenic brain abscess. *Neurology India*, *48*(2), 105-111.
3. Puglisi, S., Privitera, S., Maiolino, L., Serra, A., Garotta, M., Blandino, G., & Speciale, A. (2011). Bacteriological findings and antimicrobial resistance in odontogenic and non-odontogenic chronic maxillary sinusitis. *Journal of medical microbiology*, *60*(9), 1353-1359.
4. Sunnychan, S., Deshmukh, P., Gaurkar, S. S., Panicker, A., & Vijayappan, A. (2022). Otogenic Brain Abscess: Judicious Management in a Case of Chronic Suppurative Otitis Media. *Cureus*, *14*(10). Available from: https://www.cureus.com/articles/114247-otogenic-brain-abscess-judicious-management-in-a-case-of-chronic-suppurative-otitis-media
5. Viswanatha, B., & Nsaeeruddin, K. (2012). Conservative management of otogenic brain abscess with surgical management of attico antral ear disease: a review. *Indian Journal of Otolaryngology and Head & Neck Surgery*, *64*, 113-119. https://doi.org/10.1007/s12070-012-0524-7.
6. Lu, C. H., Chang, W. N., & Lui, C. C. (2006). Strategies for the management of bacterial brain abscess. *Journal of Clinical Neuroscience*, *13*(10), 979-985. Doi:10.1016/j.jocn.2006.01.048.
7. Myers, E. N., Sennaroglu, L., & Sozeri, B. (2000). Otogenic brain abscess: review of 41 cases. *Otolaryngology–Head and Neck Surgery*, *123*(6), 751-755. Doi:10.1067/mhn.2000.107887.
8. Duarte, M. J., Kozin, E. D., Barshak, M. B., Reinshagen, K., Knoll, R. M., Abdullah, K. G., ... & Jung, D. H. (2018). Otogenic brain abscesses: A systematic review. *Laryngoscope investigative otolaryngology*, *3*(3), 198-208. Doi:10.1002/lio2.150.