



ORIGINAL ARTICLE

Suppurative labyrinthitis associated with otitis media: 26 years' experience^{☆,☆}



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KEYWORDS

Otitis media;
Labyrinthitis;
Hearing loss

Abstract

Introduction: Suppurative labyrinthitis continues to result in significant hearing impairment, despite scientific efforts to improve not only its diagnosis but also its treatment. The definitive diagnosis depends on imaging of the inner ear, but it is usually clinically presumed.

Objective: To analyze the clinical factors and hearing outcomes in patients with labyrinthitis secondary to middle ear infections and to discuss findings based on imaging test results.

Methods: Retrospective cohort study, based on the charts of patients admitted with middle ear infection-associated labyrinthitis.

Results: We identified 14 patients, eight (57%) of whom were females and six (43%) males. Mean age was 40 years. Cholesteatomatous chronic otitis media was diagnosed in six patients (43%), acute suppurative otitis media in six (43%), and chronic otitis media without cholesteatoma was diagnosed in two patients (14%). Besides labyrinthitis, 24 concomitant complications were identified: six cases (25%) of labyrinthine fistula, five cases (21%) of meningitis, five cases (21%) of facial paralysis, five cases (21%) of mastoiditis, two cases (8%) of cerebellar abscess, and one case (4%) of temporal abscess. There was one death. Eight (57%) individuals became deaf, while six (43%) acquired mixed hearing loss.

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PALAVRAS-CHAVE

Otite média;
Labirintite;
Perda auditiva

Conclusion: Suppurative labyrinthitis was often associated with other complications; MRI played a role in the definitive diagnosis in the acute phase; the hearing sequel of labyrinthitis was significant.

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Labirintite associada à otite média: experiência de 26 anos**Resumo**

Introdução: Labirintite permanece resultando em deficiência auditiva significativa, apesar dos esforços científicos para melhorar não só o diagnóstico, como também o tratamento. O diagnóstico definitivo é dependente de imagens da orelha interna, mas geralmente é presumido clinicamente.

Objetivo: Analisar os fatores clínicos e os resultados auditivos em pacientes com labirintite secundária à otite média e discutir os achados dos exames de imagem.

Método: Estudo de coorte retrospectivo, com base nos prontuários de pacientes diagnosticados com labirintite associada à infecção da orelha média.

Resultados: Foram identificados 14 pacientes, oito (57%) do sexo feminino e seis (43%) masculino. Média etária de 40 anos. Otite média crônica colesteatomatosa foi diagnosticada em seis pacientes (43%), otite média aguda em seis pacientes (43%) e otite média crônica sem colesteatoma em dois pacientes (14%). Foram identificadas 24 complicações concomitantes: seis casos (25%) de fístula labiríntica, cinco casos (21%) de meningite, cinco (21%) de paralisia facial, cinco (21%) de mastoidite, dois casos (8%) de abscesso cerebelar e um caso (4%) de abscesso temporal. Houve uma morte. Oito (57%) indivíduos tornaram-se anacústicos, enquanto seis (43%) evoluíram para perda auditiva mista.

Conclusão: Labirintite foi frequentemente associada a outras complicações; RNM auxiliou no diagnóstico definitivo da labirintite na sua fase aguda; a seqüela auditiva da labirintite foi significativa.

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Introduction

The advent of antibiotics and immunizations in the last century led to a considerable decline in the incidence of complications from otitis media, and therefore a discussion on suppurative labyrinthitis associated with middle-ear infection may seem, at first glance, an outdated issue. However, complications still occur, particularly in developing countries, with significant morbidity (notably, hearing loss).¹⁻⁶ Leskinen et al. studied 50 patients treated for otitis media complications and, among the several complications listed in the study, suppurative labyrinthitis was considered the most disabling, in that all affected individuals developed profound or complete hearing loss.²

The diagnosis of suppurative labyrinthitis secondary to otitis media is essentially a clinical one, through the observation of vertigo, nystagmus, tinnitus and hearing impairment in the presence of a middle ear infection. In many diseases of the inner ear, the inflammatory process that ensues is usually presumed, rather than effectively diagnosed, and corticosteroids are empirically prescribed as the treatment of choice.⁷ The identification of suppurative labyrinthitis is usually more obvious, due to the magnitude and severity, of the symptoms, whereas in serous

labyrinthitis symptoms are more subtle and many patients experience a satisfactory recovery with the treatment of underlying disorders of the middle ear.

The complex location of inner ear structures in the temporal bone, housed in the dense bone of the otic capsule, represents a significant barrier for the access and identification of any alterations in this region. Considering that the current knowledge about inner ear physiopathology is mainly derived from animal studies involving the collection of tissues and histological, molecular and inflammatory marker analyses, little is known about the mechanisms involved in diseases of the human inner ear *in vivo*.⁸

Imaging tests are important tools in an attempt to better understand the dynamics of inner ear inflammation. Currently the high-resolution computed tomography (HR-CT) best evaluates diseases affecting the bony labyrinth and nuclear magnetic resonance (NMR) imaging defines diseases that affect the inner ear and retrocochlear pathways. Recent advances in NMR techniques offer interesting opportunities for the study of cochlear structure, function and metabolism *in vivo*. The use of gadolinium as a contrast for the study of the inner ear adds sensitivity to the NMR, particularly for diseases such as labyrinthitis.⁸⁻¹¹

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