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Case Report

Simultaneous Coexistence of Complications of Chronic Otitis Media in the Same Case

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Chronic otitis media (COM) is a common clinical entity, but the incidence of COM complications has declined recently due to broad use of antibiotics. Independent of this, these complications are still a significant challenge in otorhinolaryngology practice because of high morbidity and mortality rates. The most common etiologic diagnosis was cholesteatomatous COM. Simultaneous coexistence of complications of COM in the same case is a rare situation, and the present report describes a case with mastoiditis, Bezold abscess, lateral sinus thrombophlebitis, meningitis, and paraspinal abscess.

KEYWORDS: Chronic otitis media, cholesteatoma, complications, abscess, sinus thrombophlebitis, meningitis

INTRODUCTION

Broad use of more effective and stronger antibiotics resulted in a decline in the incidence of chronic otitis media (COM) complications; however, the significance of complications has remained stable due to high mortality and morbidity rates [1]. Simultaneous coexistence of complications of COM in the same case is a rare situation, and the present report describes a case of multiple complications of COM.

CASE PRESENTATION

A 45-year-old man attended to our emergency department complaining of left otalgia, purulent otorrhea, and pain in the left cervical area with a 15-day history. After consultation to our clinic, the patient was hospitalized with the diagnosis of left COM, mastoiditis, and Bezold abscess and treated ambulatorily with broad-spectrum intravenous antibiotics (tazobactam-piperacillin, teicoplanin, and clindamycin). He complained of hearing loss, frequent ear discharges, and otalgia in left ear of 10-year duration. He smoked cigarets and used alcohol; additionally, he had a history of hospitalization with a diagnosis of meningitis at a different otorhinolaryngology department seven years ago.

Otoscopic evaluation showed swelling of the external ear and a foul-smelling purulent discharge in the left ear. Bezold abscess was drained under local anesthesia. Abscess and blood culture were taken. The general condition of the patient was normal initially, but after 24 hours of treatment, he had nausea and vomiting, then his general condition deteriorated. Neck stiffness and positive Kernig's sign were determined in physical examination. We performed a computerized tomography (CT) scan, magnetic resonance imaging (MRI), and lumbar puncture to exclude cranial involvement, and these tests confirmed a left middle ear cholesteatoma associated with ipsilateral lateral sinus thrombophlebitis and meningitis (Figure 1). Therefore, the patient was sent to intensive care unit, and treatment changed to meropenem, and vancomycin, metronidazole, which were more specific antimicrobial agents to treat a cranial nervous system infection.

Under these circumstances, we performed radical mastoidectomy. The mastoid cavity, middle ear cavity, and perisinusoidal air cells were filled with cholesteatoma debris. There was bone erosion in the perisinusoidal region (Figure 2). *Streptococcus constellatus* was iso-

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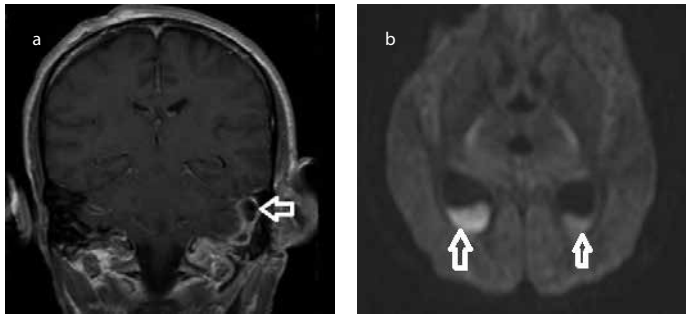

Figure 1. a, b. (a) Cranial MRI: Arrow shows hyperintense imaging of ipsilateral lateral sinus thrombophlebitis on coronal view (b) Cranial MRI: Arrow shows lateral ventricular involvement due to meningitis on axial view.
MRI: magnetic resonance imaging

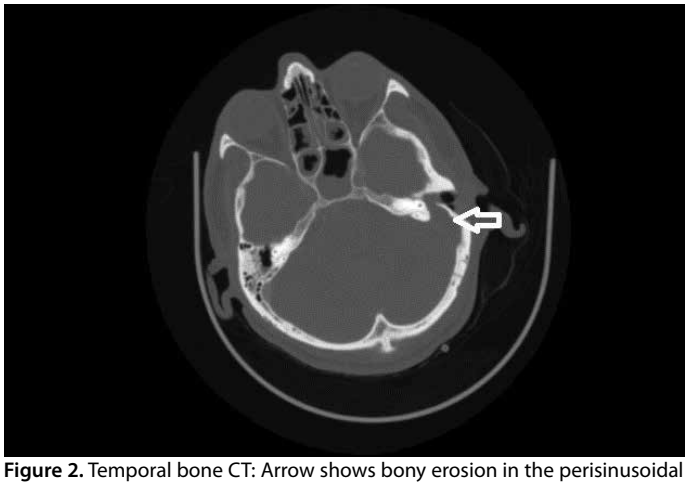

Figure 2. Temporal bone CT: Arrow shows bony erosion in the perisinusoidal region on axial view.
CT: computed tomography

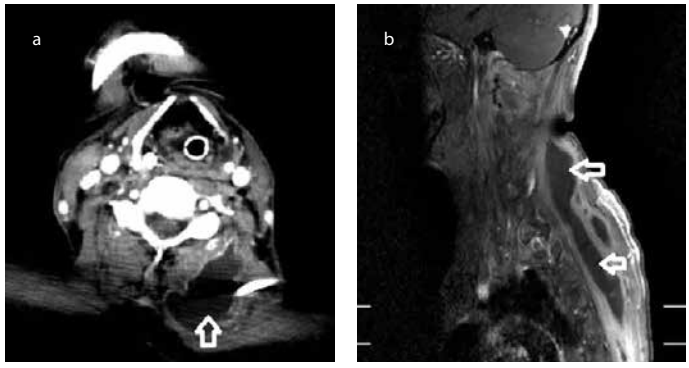

Figure 3. a, b. (a) Neck CT: Arrow shows paraspinal abscess in the cervical region on coronal view. (b) MRI: Arrow shows paraspinal abscess in the cervical and thoracal region on sagittal view.
CT: computed tomography; MRI: magnetic resonance imaging

lated from blood cultures, and we did not change antibiotherapy because of susceptibility of this bacteria. In the next few days, although the patient had undergone an operation and had been kept under antibiotics, we identified a paraspinal abscess in the cervical and thoracal region in the control imagings (Figure 3). Ultrasound-guided catheter was used to locate and drain the thick foul-smelling pus. Drainage cultures were negative, and we thought that this might be caused by antibiotherapy. The clinical condition of the patient slightly improved on the sixth week of mastoid surgery, and he was discharged from the hospital with left hemiparesis as a sequela of paraspinal abscess.

In summary, this paper presents an extremely rare case of a patient with complicated COM who developed mastoiditis, Bezold abscess, lateral sinus thrombophlebitis, meningitis, and paraspinal abscess at the same time. We obtained written informed consent from the patient.

DISCUSSION

Cholesteatoma is histologically a benign disease, but it has invasive property that leads to bone destruction that is associated with complications. Risk factors for complications are low socioeconomic status, malnutrition, systemic diseases, and inadequate therapy of middle ear disease [1]. According to us, the reason for coexistence of multiple serious intracranial complications may result from low socioeconomic status, inadequate antibiotic therapy, ignorance of the patient, and the presence of cholesteatoma. Intracranial and extracranial complications are possible.

Incidence of intracranial complication rates have dropped from 2.3% to 0.04–0.15% after antibiotherapy [1]. Intracranial complications remain a significant problem due to potential life-threatening condition. Various studies indicated an association with morbidity rate and the general condition of the patient on admission; in particular, the level of consciousness at first visit is defined as a significant prognostic factor [2]. In the present case, the general condition of the patient was normal initially. However, detailed evaluation was performed when his general condition deteriorated and he had nausea and vomiting after 24 hours of treatment, and the diagnosis was meningitis and lateral sinus thrombophlebitis.

Complications are most commonly caused by cholesteatomatous COM. However, there are very few cases in the literature regarding multiple complications occurring concomitantly in the same case [3-5]. For instance, Berçin et al. [5] reported a case with facial nerve paralysis, lateral sinus thrombosis, and sensorineural hearing loss, Qirjazi et al. [3] discussed a case with facial palsy and serous labryrinthitis due to subacute otitis media, and Saffer et al. [6] reported a seven-year-old boy with lateral sinus thrombosis and cervical abscess secondary to cholesteatoma.

Necrosis of the mastoid process that extends to the digastric groove may result from inflammation and infection due to otitis media, leading to various abscesses like Bezold abscess [7]. Common presentation of Bezold abscess are fever, otalgia, otorrhea, and cervical swelling, all of which were present in our case. There are few reported cases of further extension of Bezold abscess into other regions of the body [8, 9]. Pradhananga discriminated a 14-year-old girl with scapular abscess secondary to Bezold abscess [8], Singh et al. [9] declared a case of Bezold abscess and anterior chest wall abscess, and Lahlou et al. [10] reported Bezold abscess and sigmoid sinus thrombosis occurring concomitantly. The certain route of spread of infection to the paraspinal region leading to an abscess may be spread from Bezold abscess in the present case.

Mastoiditis, Bezold abscess, lateral sinus thrombophlebitis, and meningitis are all classic complications of otitis media, but this is the first paper in which these complications are reported to occur concomitantly. Furthermore, there was no relationship between virulence of the microorganism that isolated from our patient and extension of the disease.

Additionally, to our up-to-date information, there is no report discussing paraspinal abscess due to COM in the English-language literature.

CONCLUSION

Despite advancements in the antibiotherapy of COM, complications still pose a great challenge in otorhinolaryngology practice. It may cause high mortality and morbidity, and therefore, these patients should be followed closely. In this paper, we describe an extremely rare case with mastoiditis, Bezold abscess, lateral sinus thrombophlebitis, meningitis, and paraspinal abscess.

Informed Consent: Written informed consent was obtained from patient who participated in this study.

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