Case Report

A Case of Inverted Papilloma of The Mastoid Cavity After Cholesteatoma Surgery

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INTRODUCTION

An inverted papilloma is a rare benign epithelial neoplasm. These lesions commonly originate from the mucosa of the nasal cavity. It can spread from the nasal cavity to the paranasal sinuses [1]. Inverted papillomas of the mastoid cavity are classified into two types: one is a primary tumor in the mastoid cavity without any sinonasal disease and the other is a secondary lesion with concurrent or previous sinonasal papillomas [2]. It is rare for inverted papillomas to arise from the temporal bone as a primary lesion or sinonasal papilloma and invade the temporal bone. We present a new case of a patient with primary inverted papilloma of the mastoid cavity after cholesteatoma surgery.

CASE PRESENTATION

A 39-year-old female visited our otolaryngology department with the presenting complaint of right otorrhea 19 years previously. The patient had been diagnosed with cholesteatoma of the middle ear cavity and had received a modified radical mastoidectomy in the same year. Due to recurrence, she underwent canal wall down mastoidectomy 11 years ago. Four years later, the patient complained of right ear fullness; an examination determined that the right ear canal wall was nearly obliterated by a soft tissue mass. Surgery determined that a papilloma-like mass filled the mastoid cavity. The tumor was surgically resected by revision canal wall down mastoidectomy with canaloplasty. Histologically, it was determined to be an inverted papilloma. There has been no evidence of recurrence to date.

KEYWORDS: Inverted papilloma, mastoid cavity, cholesteatoma
There were no symptoms of ear fullness, although mixed hearing loss persisted after surgery. No signs of recurrence were observed until the 9-month follow-up.

This case report is presented with consent from the patient.

DISCUSSION

Papillomas are classified into three types: inverted, columnar cell, and exophytic papillomas \[3\]. According to the World Health Organization, an inverted papilloma is derived from the Schneiderian membrane. In 1854, Schneiderian-type papillomas were first described and named by C. Victor Schneider \[2\]. Inverted papillomas generally arise in the paranasal sinuses and are associated with human papilloma virus infection in approximately 30% of cases. Malignant transformation is estimated to be 7%, and the recurrence is approximately 15% \[3\].

Middle ear and mastoid cavity involvement of inverted papillomas was first described by Stone et al. \[4\] in 1987. The middle ear and mastoid cavity as the primary involved sites is extremely rare. To date, less than 30 cases of inverted papilloma arising primarily from the middle ear and mastoid cavity have been published \[3\]. The origin of an inverted papilloma of the middle ear and mastoid is controversial; three hypotheses have been proposed \[3\]. The first hypothesis is the origin of the inverted papilloma by the migration of paranasal sinus-inverted papilloma cells through the Eustachian tube. The second hypothesis is that of migration abnormality of the ectopic Schneiderian membrane into the middle ear mucosa. The last hypothesis is that the inflammatory cells of chronic otitis media stimulate the development of Schneiderian mucosa. In our case, inverted papilloma of the mastoid cavity occurred after surgery for acquired cholesteatoma. It is possible that chronic inflammation after surgery was converted to the inverted papilloma. Our case matches the third
hypothesis. Previously, a case of congenital cholesteatoma, developed as an inverted papilloma, has been reported [5].

Surgery is primarily used for the management of inverted papilloma of the middle ear and mastoid cavity. Inadequate resection is associated with higher rates of recurrence. Nathan et al. [6] reported at least one recurrence in 10 of 21 cases (48%). Recurrence was reported in all three cases (100%) initially treated with tympanoplasty and simple excision, compared with 39% following more aggressive surgery, such as mastoidectomy or temporal bone resection [6].

Long-term follow-up is integral in all patients with inverted papilloma of the middle ear and mastoid cavity because of the possibility of recurrence and the high rate of malignant transformation [7]. Detailed clinical observations during outpatient visits are important to reduce the recurrence and malignant transformation. In addition to clinical examination, magnetic resonance imaging should be performed during the follow-up [8].

Postoperative radiotherapy is not routinely performed because of the risk of osteoradionecrosis. Nonetheless, postoperative radiotherapy should be considered in cases in which malignant disease foci are present in inverted papillomas. Postoperative radiotherapy may also be performed when the tumor cannot be completely removed or when it has relapsed several times, even in the absence of malignancy [9].

Papilloma of the mastoid cavity is an extremely rare disease, and its clinical characteristics remain unknown. However, Because of the high recurrence rate and the possibility of a change to cancer, thorough outpatient follow-up is required.

CONCLUSIONS
Our case differs from other cases in that inverted papilloma of the mastoid cavity occurred after cholesteatoma surgery. In most cases, after cholesteatoma surgery, the patient is seen due to the possibility of cholesteatoma recurrence. However, because inverted papilloma may occur rarely, as in the case described here, it should be considered among the various diseases if recurrence is suspected during follow-up.

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REFERENCES