Case Report

A Case of Pyogenic Granuloma Arising from the Tympanic Membrane

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Abstract

Pyogenic granuloma (PG) usually occurs in the oral cavity, nasal cavity, face and extremities. Other lesions occurring in the small bowel, colon, rectum, adrenal gland have been reported. In the field of otolaryngology, PG is primarily found in the head and neck region; however, it is rarely found in the field of otology. Although PG arising in the external auditory canal has been sporadically reported, there has been no report arising from the tympanic membrane. The mass in this case was surgically removed for treatment and pathological examination was proven to be PG. We report here, for the first time, a case of PG of the tympanic membrane in a 45-year-old male with recurrent bloody otorrhoea with a review of literatures.

ABBREVIATIONS

PG: Pyogenic Granuloma; SCUBA: Self-Contained Underwater Breathing Apparatus; CT: Computed Tomography

INTRODUCTION

Pyogenic granuloma (PG) or lobular capillary hemangioma is a benign vascular tumor of the skin or mucous membranes characterized by overgrowth of tissue due to irritation, physical trauma or hormonal factors [1]. There are two reported cases of PG arising in the external auditory canal [2,3]. However, there are no reported cases of the PG arising from the tympanic membrane. In this case, the mass, which was surgically removed for treatment and pathological examined, was proven to be PG.

CASE PRESENTATION

A 45-year-old male, who is a professional SCUBA (self-contained underwater breathing apparatus) diver, was referred to our clinic with a history of recurrent bloody otorrhoea for 6 years in the right ear. The otoscopic examination revealed an exophytic mass lesion with a sessile base on the tympanic membrane (Figure 1). Pure tone audiometry showed normal. Temporal bone computed tomography showed an isolated mass shadow on the upper part of tympanic membrane (Figure 2). Middle ear cavity and the ossicles appeared normal. Thus, we performed an excisional biopsy of the mass under local anesthesia to investigate the nature of the mass lesion. The biopsy report revealed PG. The patient denied hearing loss, tinnitus, or otalgia. Because of long period of bloody otorrhoea without regression, the patient wanted the surgical removal. Surgical resection was performed via endaural approach. During the procedure, the perforation of the tympanic membrane occurred and the tympanoplasty with tragal perichondrium was performed simultaneously. Pathologic examination showed a well-defined proliferation of vascular

Figure 1 Otoscopic view of the right tympanic membrane. The exophytic mass is mainly seen on the upper part of the right tympanic membrane.
structures, closely adhering to each other, filled by erythrocytes in the lumen. They varied in size and were delimited by a single layer of flat endothelial cells. Superficially, the lesion was lined by hyperkeratotic squamous epithelium. The epithelium showed area of ulceration below which can be seen as inflammation in the connective tissue. The connective tissue showed proliferating fibroblasts and collagen fibers. There was no evidence of cellular atypia or malignancy. The clinical and histopathological findings were confirmed as PG (Figure 3). The tympanic membrane was reconstructed without complication, and there is no recurrence of the PG after 6 months of the excision.

**DISCUSSION**

PG usually arises in response to various stimuli such as low-grade local irritation, traumatic injuries [4]. Because of this irritation, the underlying fibro vascular connective tissue becomes hyper plastic and proliferation of granulation tissue leads to the formation of PG. PG may occur in all ages, but it is predominantly seen in females of ages from 11 to 20, possibly because of vascular effects of female hormones [5]. PG usually occurs in oral cavity, nasal cavity, face and extremities, rarely in colon [6], larynx [7], esophagus [8] and stomach, [9] etc. In the field of otology, there are two cases of PG in external auditory canal with recurrent bloody Otorrhea [2,3]. However, there has been no reported case of PG arising from the tympanic membrane. Because the patient is a professional SCUBA diver, there is a high possibility of physical irritation on the tympanic membrane, which could lead to the formation of PG.

The name ‘PG’ may be misleading because it is not a true granuloma. In actuality, it is a capillary hemangioma of lobular subtype which is the reason they are often quite prone to bleeding [10]. The tumor consists of capillary-sized vessels surrounded by fibrous connective tissues. The surface epithelium may be intact, or may show foci of ulcerations or even exhibiting hyperkeratosis. It overlies a mass of dense connective tissue composed of significant amount of mature collagen (Figure 3). Surgical treatment with en bloc excision is generally curative. If a tumor is asymptomatic or does not show rapid growth, watch- and-see policy may be sufficient since PG would not show any malignant change. However, if there are symptoms of conductive hearing loss, otalgia, and otorrhoea, a surgical resection should be considered. In this case, the mass was surgically removed via en dural approach because the patient complained of a recurrent bloody otorrhoea for 6 years. Regarding recurrence, PG arising from the oral cavities showed 8.2% [11] and 5.8% [12] of recurrence rates in the retrospective studies. Therefore, it is also required a long term follow-up examination of PG arising from the tympanic membrane.

**CONCLUSION**

In conclusion, we report a case of PG arising from the tympanic membrane for the first time. It is important that PG should be considered as one of the important clinical entity as a differential diagnosis in a patient presenting with history of recurrent bloody otorrhoea with a tympanic mass by otoscopic examination.

**REFERENCES**


