Benign Osteonecrosis of the Temporal Bone: A Rare Etiology

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INTRODUCTION
Benign Osteonecrosis of the temporal bone (BONTB) is a rare condition with an obscure etiology. The suggested pathophysiological process involves compromise of the blood supply to the tympanic plate, leading to the formation of an avascular bony sequestrum. The literature available on BONTB is sparse, and are usually case series. Details of the management—both surgical and medical—of patients with BONTB are also scarce. In this study, we wish to present our experience with six patients with BONTB, including a review of the literature regarding BONTB.

METHODS
A retrospective review of 6 patients treated at our institution was conducted following submission to the institutional review board, which determined that the investigation qualified for exemption. These patients were treated between 2006 and 2009. Hospital and office charts were reviewed for ascertainment of relevant information. Of the 6 patients, 5 patients had undergone biopsy and subsequent reconstruction of the surgical defect. Of the 5 patients whom underwent surgery, mean follow-up time was 9 months postoperatively. One patient who declined surgical intervention has been followed for 29 months.

RESULTS
As seen in table 1, wide variety of symptoms, to include but not limited to otorrhea, itching, aural fullness, otalgia. The physical examination of these patients typically showed bony exposure with surrounding normal epithelium with minimal or no granulation tissue or ulceration (see Figure 1). Surgical intervention commonly included excision biopsy of the lesion with perichondrial graft reconstruction. 5 out of 6 patients underwent surgical debidement for the purpose of pathologic examination. The specimens showed chronic inflammation and reactive fibrosis with no evidence of malignancy (see figure 2).

DISCUSSION
BONTB is a unique inflammatory disease of obscure mechanism which can involve either small or large foci of the tympanic plate. Some of the multiple etiologies implicated include repeated trauma to the external auditory canal, vascular insufficiency, rheumatologic and hematologic disorders leading to vascular compromise of the tympanic plate.

In summary, a “wait-and-see approach” for asymptomatic patients with BONTB and advocate strict adherence to dry ear precautions is advocated. In the presence of a dry external auditory canal, routine swab and culture has no clinical usefulness. Patients with persistent symptoms, large foci, or middle ear involvement may have accelerated recovery with debidement and/or hyperbaric oxygen therapy, the latter of which has been shown to be effective as empiric therapy for middle ear involvement.

BIBLIOGRAPHY