Primary presentation of lymphoma of the middle ear is rare with only 11 cases being reported in the literature. Diagnosis of middle ear and mastoid tumors can be delayed because symptoms mimic more common otologic conditions. Only after worsening of clinical symptoms into mastoiditis with associated cranial nerve deficits do patients undergo further evaluation. We describe a case of diffuse large B cell lymphoma presenting as unresolved chronic otitis media and mastoiditis. Isolated presentation in the middle ear and mastoid without associated cranial nerve deficits or vestibular symptoms has not been described previously.

**INTRODUCTION**

Diffuse large B cell lymphoma (DLBCL) is the largest subtype of non-Hodgkin’s lymphomas (NHL). It is characterized by extranodal and extramedullary involvement in up to 40 percent of cases. Although the most common extranodal localizations are the stomach/gastrointestinal tract, the disease can arise in virtually any tissue. The temporal bone can be a site for lymphoreticular neoplasms, with metastatic involvement being well documented. Primary presentation of lymphoma of the middle ear is rare with only 11 cases being reported in the literature; all of these cases describe cranial nerve deficits. Diagnosis of middle ear and mastoid tumors can be delayed because symptoms mimic more common otologic conditions such as chronic otitis media. Only after worsening of clinical symptoms into mastoiditis with associated cranial nerve deficits do patients undergo further evaluation by biopsy and imaging. We describe a case of diffuse large B cell lymphoma presenting as unresolved right chronic otitis media and mastoiditis. Isolated presentation in the middle ear and mastoid without associated cranial nerve deficits or vestibular symptoms, as in our patient, has not been described.

**CASE REPORT**

A 78 year old female presented to her primary otolaryngologist with a 6 month history of otalgia and infection of the right ear that was treated unsuccessfully with antibiotics. Initial biopsies in clinic and intraoperatively by her primary otolaryngologist were non-diagnostic. Upon presentation at our clinic, otoscopy of the right ear revealed fullness and a mass in the middle ear with surrounding granulation tissue (Fig 1).

Physical exam was otherwise unremarkable and she demonstrated no neurological deficits. Audiogram revealed right stable sensorineural loss at 1000Hz and mild presbyacusis. Coronal computed tomographic (CT) scans of the temporal bone demonstrated opacification of the mastoid air cells with a middle ear mass primarily in the epitympanic region surrounding the ossicles. There was no evidence of bony destruction (Fig 2). Given these findings, the patient underwent a right tympanomastoidectomy. The mastoid cavity contained copious amounts of necrotic bone. The middle ear was explored and was completely normal. Biopsies were taken and immunohistological examination revealed bone and soft tissue with a cellular infiltrate of large cells with irregular nuclear contours, vesicular chromatin, and variably prominent nucleoli (Fig 3).

Malignancies in the middle ear are rare. Squamous cell carcinoma and adenocarcinoma comprise 75-90% of tumors with melanoma, rhabdomyosarcoma, chondrosarcoma, lymphoma and metastases making up most of the rest. Middle ear and mastoid tumors can be delayed because symptoms mimic more common otologic conditions such as chronic therapy-resistant mastoiditis. Neurological deficits and vestibular symptoms occur in the most advanced cases. Cranial nerve palsies have been reported with temporal bone malignancies with facial nerve involvement being the most common finding.

**DISCUSSION**

The unique presentation of chronic otomastoiditis refractory to medical and even surgical management requires more thorough evaluation. Without any cranial nerve deficits or other symptoms concerning for malignancy, it is imperative to exclude the possibility of temporal bone malignancy through proper neurotologic examination and appropriate imaging. Early diagnosis and aggressive chemotherapeutic treatment are crucial for a good outcome in primary middle ear lymphoma.

**REFERENCES**