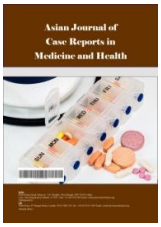

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Diffuse Large B-cell Lymphoma of the External Auditory Canal: Case Report

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Authors' contributions

This work was carried out in collaboration between both authors. Authors HKS and WS designed the study. Author HKS performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author WS managed the analyses of the study. Author HKS managed the literature searches. Both authors read and approved the final manuscript.

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Case Study

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ABSTRACT

A 68 yr old male presented with hearing loss due to an obstructing mass in his ear canal. A CT scan confirmed a non-erosive mass, which was biopsied. A diagnosis of Diffuse Large B-Cell Lymphoma was made. Following 6 courses of intra-thecal methotrexate the patient is asymptomatic and in remission. Diffuse Large B-Cell Lymphoma (DLBCL) of the EAC (external auditory canal) is extremely unusual with only 8 cases of documented DLBCL in the literature.

Keywords: External auditory canal; Diffuse Large B-cell Lymphoma (DLBCL).

1. INTRODUCTION

Lymphomas are the second most frequent malignant tumor in the head and neck region [1,2] however their presentation in the external auditory canal (EAC) is extremely rare and only 8 cases have so far been reported in the international literature till date [2,3,4-7]. DLBCL is an aggressive malignant B-Cell Lymphoid neoplasm that accounts for nearly 30% of all malignant lymphoma and can be nodal or extra nodal with nearly 50% of all extra nodal being in the head and neck [8,9] DLBCL originating from EAC are extremely rare and therefore their clinical and pathological characteristics have not been extensively described.

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2. CASE REPORT

A 68-year-old male presented with a 3-month gradual hearing loss in the right ear. His co-morbidities included eczema, psoriasis, Obstructive sleep apnoea & hypothyroidism. He was a non-smoker and consumed about 14 units of alcohol per week. There was no history of fever, night sweats or weight loss. Examination of the Right EAC revealed a smooth swelling with normal skin arising from the posterior canal wall obliterating 90% of the ear canal. No lymphadenopathy or neck masses were identified. Pure tone audiogram showed a conductive hearing loss in the right ear. CT scan showed obliteration of the Right EAC lateral to the tympanic membrane with no bony erosion. Surgery was performed under general anesthesia. A lipomatous looking mass was removed piece meal down to the bone and the defect covered with temporalis graft. When reviewed 2 weeks later post operatively, the patient had developed a 4cm X 2cm level 2A, 2B & 3 mass with a rubbery consistency. Histology from the ear canal mass was inconclusive and so an incisional biopsy of the neck lump was performed.

Histology of the right EAC showed T lymphocytic infiltrate but the neck showed mixed B & T lymphocytic infiltrate. Immunohis to chemical staining revealed large atypical cells CD20 positive and CD30 positive. Ki-67 showed moderate proliferation index with no evidence of light chain restriction on kappa and lambda. The patient was referred to the haematologist and a bone marrow aspirate subsequently diagnosed a diffuse large B-cell lymphoma (activated B -cell type). FDG PET CT confirmed that the disease was localized to the right auricular region and right cervical chain (Stage 1 disease). The patient received intrathecal methotrexate and following 6 cycles of chemotherapy and at one-year post diagnosis, the patient was asymptomatic with the ear canal being normal in appearance and no neck nodes present clinically or on PET CT scan. Regular CSF analysis showed no blast cells or infiltration following the chemotherapy. The patient is presently being followed up by ENT and oncology teams.

3. DISCUSSION

Lymphoma of the EAC is extremely rare with only 8 previous cases of DLBCL, reported in literature. Primary lymphomas of the internal auditory canal [10], middle ear [11], mastoid cavity [12] are more common with the mastoid and middle ear being the common primary focus of origin [13]. The clinical presentation of lymphomas in the EAC are highly non-specific, sometimes misdiagnosed and treated as otitis externa. A single biopsy of the lesion may be insufficient Delgado et al. [5] and incisional biopsy may delay in diagnosis or may be inaccurate [6].

Despite a comprehensive surgical excision of the lesion in the EAC the histology was inconclusive. The nonspecific clinical picture makes the diagnosis difficult with differential diagnosis being otitis externa, benign or malignant conditions of EAC with overlying skin being normalina painful ear and no bone erosion on CT scan, malignant otitis externa was excluded in our patient.

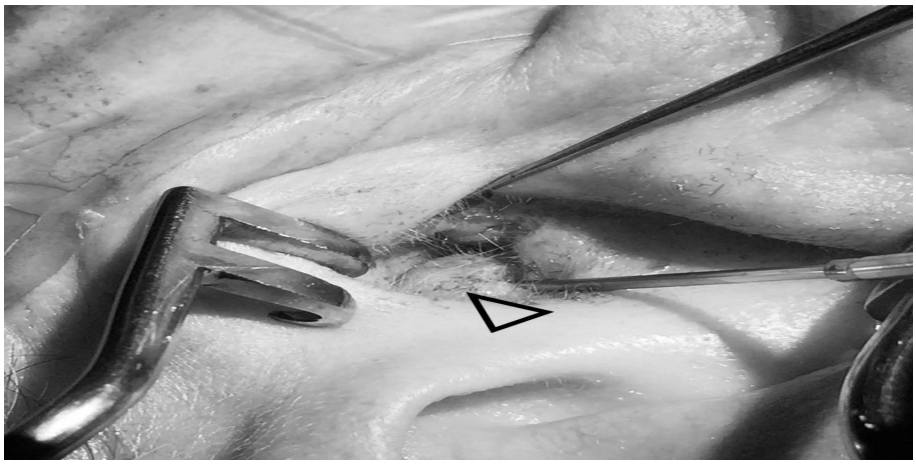

Fig. 1. Mass in the posterior wall right EAC

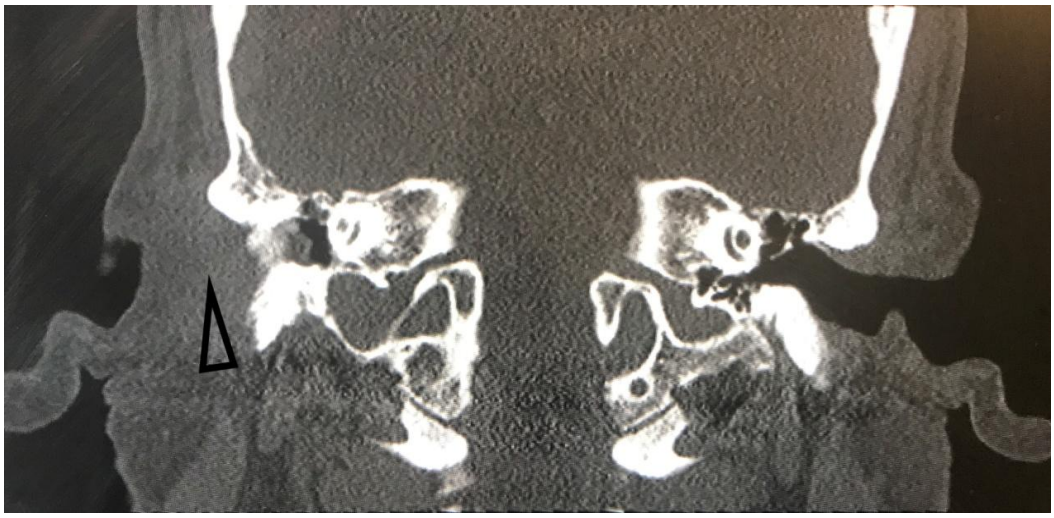

Fig. 2. CT temporal bones showing the mass right EAC

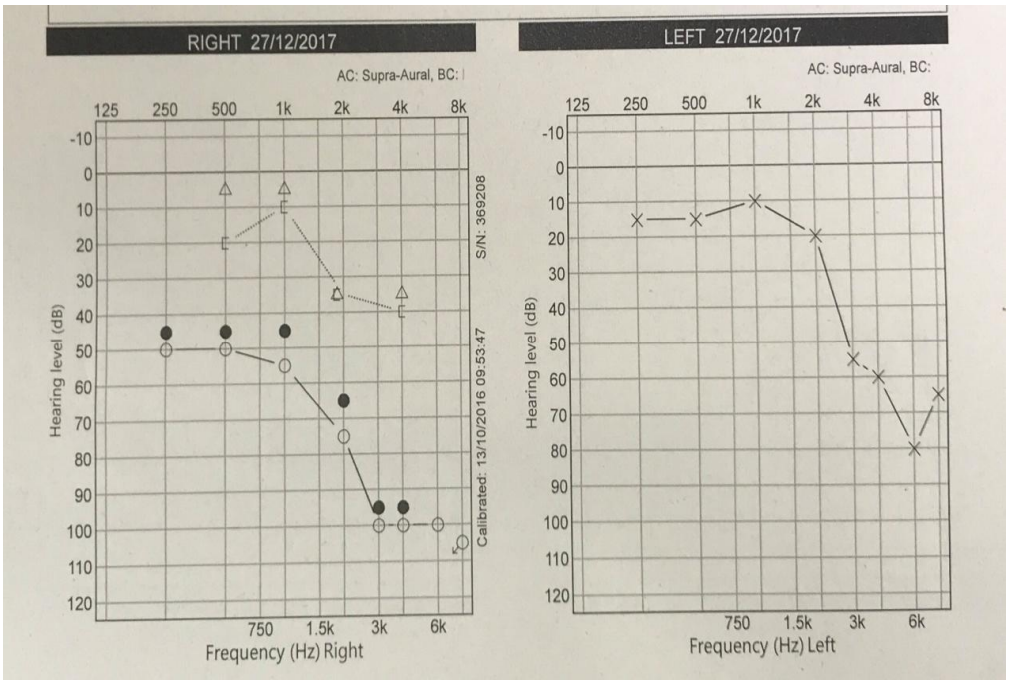

Fig. 3. Pure tone audiogram

The absence of otalgia and normal skin appearance made a furuncle or malignant otitis externa less likely as was for an osteoma since the mass was not hard. In the literature there is no acceptable international guidelines proposed or established to diagnose lymphoma of the ear canal.

For tumors of epithelial origin of the EAC, surgical treatment is the accepted line of management. In doing so, isolated tumors of the EAC, surgical excision biopsy should be an accepted line of treatment.

As seen in our case, patient had excisional biopsy of the lesion but also an incision biopsy of the subsequent neck lesion after being discussed at the multidisciplinary team meeting (MDT). Six cycles of chemotherapy using intrathecal methotrexate has proved effective. Delgado et al. [3] and Shuto et al. [5] reported the same management

of excisional biopsy with chemotherapy in their patients.

4. CONCLUSION

A malignant lymphoma of the EAC should be considered in patients with a painless, soft tissue mass in a non-discharging ear even when no lymphadenopathy or B symptoms (fever, night sweats and weight loss) according to the Ann Arbor classification are present. An urgent excisional biopsy with CT & PET imaging with discussion in a haematology MDT is advised. Excisional biopsy followed by chemotherapy may be the optimal treatment of this rare malignancy.

CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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