A rare cytological diagnosis of primary non-Hodgkin lymphoma of the parotid gland

ABSTRACT
Primary lymphoma of the parotid gland is relatively rare and constitutes about 4-5% of extranodal lymphomas. The majority of them is non-Hodgkin lymphoma (NHL) and is B cell in nature. We report a case of primary diffuse large B-cell lymphoma (DLBCL) of the parotid gland in an elderly male. The case was diagnosed on fine needle aspiration cytology (FNAC) of the right parotid gland as high grade B-cell NHL and confirmed on histopathology as DLBCL. In correlation with the clinicoradiological findings, the case was diagnosed as primary parotid DLBCL. The case highlights the role of FNAC as a timely and useful diagnostic tool.

Key words: Cytology; lymphoma; parotid

Introduction
Primary lymphoma of the parotid gland is an uncommon entity. Predominantly (84-97%) parotid lymphomas are non-Hodgkin lymphomas (NHL) and most of them are of B-cell origin.[1,2] There may be coexisting lymphadenopathy of the cervical region.[3] However, to categorize them as a primary from the parotid, the first clinical manifestation should arise in the parotid gland.[4] We report a case of primary NHL of the parotid gland in a 61-year-old male that was diagnosed on fine needle aspiration cytology (FNAC).
needle aspiration cytology (FNAC) with further histological confirmation.

Case Report

A 61-year-old male presented with a painless swelling in the right parotid region for the last 1 year and right sided cervical swelling for the last 3 months. On examination, a mass of 5 cm × 5 cm was identified in the parotid region. It was nontender, fixed, and firm-to-hard in consistency. In addition, the patient had an enlarged right sided level V cervical lymph node. There was no clinical evidence of Sjögren’s syndrome.

Hematological investigations were within normal limits (Hemoglobin — 11.8 gm/dL, total leukocyte count — 6000/cumm and a differential count of 66% neutrophils, 28% lymphocytes, 4% eosinophils and 2% monocytes, platelet count — 1.6 lakhs/cumm). His erythrocyte sedimentation rate was elevated with 58 mm at the end of the first hour. Contrast-enhanced computed tomography (CECT) revealed a lobulated mass of 7 cm × 5 cm × 2.5 cm arising from the deep lobe of the parotid.

FNAC was advised from both the parotid swelling and the enlarged right sided level V cervical lymph node. Aspiration from the parotid yielded blood-mixed aspirate. Smears were moderately cellular and comprised of large atypical lymphoid cells with high N:C ratio, irregular nuclear contour, vesicular chromatin, and prominent nucleoli and scanty agranular cytoplasm. Many atypical mitoses were seen. The background showed lymphoglandular bodies along with normal-appearing salivary gland acini and ducts [Figure 1a]. A diagnosis of high grade NHL was offered. Subsequently, immunocytochemistry (ICC) was performed on the Papanicolaou-stained smears without destaining. These cells were positive for leukocyte common antigen (LCA), cluster of differentiation (CD) 20 (inset) and negative for CD3 and Cytokeratin. In view of the ICC findings, a diagnosis of high grade NHL favoring diffuse large B-Cell lymphoma (DLBCL) was offered.

FNAC from the cervical lymph node showed similar cytomorphology [Figure 1b]. In view of the above findings, a diagnosis of high grade B-cell NHL favoring DLBCL involving the right parotid gland with secondary involvement of the level V cervical lymph node was made. A bone marrow examination revealed a normal study.

Excision biopsy of the cervical lymph node revealed diffuse effacement of the architecture with sheets of atypical lymphoid cells with vesicular chromatin and scanty cytoplasm. Mitotic count was 4/10 hpf with many atypical mitoses. Immunohistochemistry (IHC) revealed LCA and CD20 positivity of the tumor cells. The tumor cells were negative with CD3. Based on the above histological and IHC findings, a diagnosis of DLBCL was made. The Ki67 labeling index was 80-85%.

Correlating with the clinical history and radiological findings, final diagnosis of a primary DLBCL of the right parotid gland with secondary involvement of level V cervical lymph node was made. The patient was staged at Ann Arbor stage II. The patient was treated with six cycles of Rituximab-Cyclophosphamide-Hydroxydoxorubicin-Oncovin-Prednisolone (R-CHOP) chemotherapy. The patient is on maintenance therapy with Rituximab and is doing well.

Discussion

Malignant lymphoma of the parotid gland is relatively rare and constitutes about 4-5% of extranodal lymphomas, and 1-4% of all parotid tumors.[1,2]

The median age of presentation is 55-65 years with female preponderance.[2] It presents as a unilateral, painless, progressive swelling in the parotid region.[1] Facial nerve paresis and associated cervical lymphadenopathy may be a feature as well.[3] In the present case, the level V cervical lymph node was secondarily involved. They may be associated with autoimmune diseases such as Sjögren’s syndrome.[1] In the present case, patient had no clinical evidence of Sjögren’s syndrome.

The lymphoma may originate from the intraparotid lymph nodes or from the parenchyma (mucosa-associated lymphoid tissue [MALT]) or both. In view of this, Scotland and Newcastle Lymphoma Group recommended the term “lymphoma primarily affecting the parotid gland” to refer to lymphoma affecting the parotid region.[5] The differentials of MALT lymphoma are lymphoepithelial sialadenitis (LESA).
The cytology of LESA reveals a mixture of acinar cells, epithelial, and myoepithelial cells admixed with polymorphous lymphoid cell population. Oncocytes can be encountered. Demonstration of clonal lymphoid population by IHC or flowcytometry differentiates it from MALT lymphoma. Warthin’s tumor is considered a benign primary parotid gland neoplasm that is composed of a mixture of oncocytic cells, basal cells, and stroma that contains numerous lymphocytes usually arranged in papillary and cystic structures. Lymphomas lack the oncocytic cells. By contrast, the diagnosis of non-MALT high grade lymphomas is usually straightforward, as they have overt cytological atypia.

The criteria for primary parotid lymphoma, as suggested by Hyman and Wolff, include the first clinical manifestation in the parotid gland, histologically involving the parotid gland parenchyma and malignant nature of the lymphoid infiltrate. In the present case, the parotid swelling developed earlier than the cervical lymph node and the parenchyma was infiltrated by malignant lymphoid cells, meeting all the criteria as suggested by Hyman and Wolff for primary lymphoma of the parotid.

Lymphoma of the salivary gland is highly chemo-radiosensitive and, therefore, a timely diagnosis is important. Moreover, surgical management of parotid lymphoma patients carries a high risk of morbidity due to infiltrative nature of the neoplasm. The role of FNAC thus becomes important in such a setting for an early definitive diagnosis.

Conclusion

Primary malignant lymphoma of the parotid gland is rare. Cytological diagnosis by means of FNAC is a useful diagnostic tool. However, histological confirmation should be sought for a definitive diagnosis.

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Conflicts of interest
There are no conflicts of interest.

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