



Primary Lymphoepithelial Carcinoma of the Parotid Gland: A Rare Case

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The primary lymphoepithelial carcinomas account only 0.4% of all salivary gland malignancies and most of them occur in parotid glands. This disease correlates with activities of Epstein-Barr virus and the microscopic pathological presentations mimic the finding of nasopharyngeal carcinoma. Thus, the metastatic lymphadenopathy of parotid nodes from pharyngeal carcinomas should be considered first, especially in the higher prevalent area such as arctic area or South-east Asia. After exclusion of a metastatic disease, the diagnosis of primary lymphoepithelial carcinoma can be made. Magnetic resonance imaging is the examination of choice if a parotid malignancy is suspected. Surgical excision of malignancy with postoperative radiotherapy is considered as the better treatment strategy. We present a medical history of the 26-year-old woman who was diagnosed with primary lymphoepithelial carcinoma of the parotid gland and showed no evidence of recurrence after this treatment strategy.

Key words: Lymphoepithelial carcinoma, parotid gland, nasopharyngeal carcinoma

INTRODUCTION

In all of the parotid gland malignancies, mucoepidermoid carcinoma is the most common type, accounting for 40% of all cases¹ and followed with adenoid cystic carcinomas. Primary undifferentiated carcinoma of nasopharyngeal type including lymphoepithelial carcinoma, small cell undifferentiated carcinoma, and large cell undifferentiated carcinoma is rarely found in salivary gland malignancies.² Lymphoepithelial carcinoma (LEC) consists only 0.4% of major salivary malignant neoplasms. Due to possible parotid nodal metastasis from neighboring pharyngeal malignancy, the upper aerodigestive tract should be well evaluated first especially nasopharynx and oropharynx, before initiating any treatment modality.

CASE REPORT

A 26-year-old woman came to our clinic for checking the left infraauricular mass, which enlarged rapidly in recent 3 months. It made her left cheek asymmetric from the other side.

She had no past history about head and neck cancers, salivary gland problems, autoimmune diseases or facial trauma. She also denied hearing disability, ear fullness, epistaxis, or nasal stuffiness recently. By physical examination, a round, fixed and painless tumor, with approximately 4 cm in diameter over her left infraauricular region was noted. Her facial skin was smooth without numbness or weakness. There was no other palpable neck mass. Fiber optic nasopharyngoscopy revealed smooth nasopharyngeal mucosa and symmetric tonsils.

Image surveillance was arranged under the suspicion of parotid cancer. Head and neck magnetic resonance imaging (MRI) showed a T2-hyperintensed tumor in the superficial lobe of the left parotid gland, about 3.9 cm × 3.5 cm × 2.7 cm in size, with invasion to the deep lobe [Figure 1a and b]. Several enlarged lymph nodes were noted in the left parotid gland and the left neck Level II. The largest one was 1.5 cm in size. After excluding the possible distal metastasis, we performed total parotidectomy of the left parotid gland and selective neck dissection of the left neck Level II. The frozen section reported malignancy during the surgery. Severe adhesion between the facial nerve and the tumor was noted. We separated them apart carefully.

After the surgery, temporarily Grade II (the House-Brackmann score) paralysis of a left buccal branch of the facial nerve was noted, and it recovered gradually. The pathology featured irregular sheets of tumor cells with prominent nucleoli embedded in the lymphoid stroma, compatible with undifferentiated lymphoepithelial carcinoma [Figure 2a and b]. *In situ* hybridization for Epstein-Barr (EB) virus encoded RNA-1 is positive in nuclei of neoplastic

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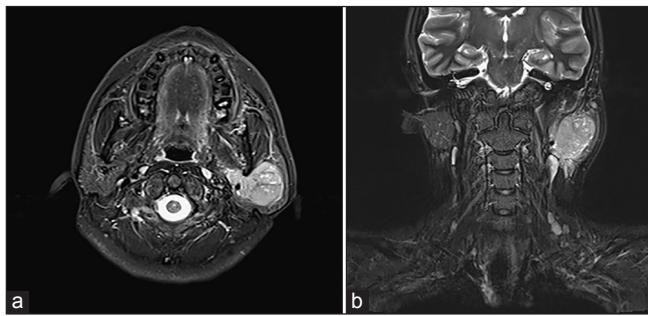


Figure 1a: (a and b) Axial view (a) and coronal view (b) of a T2-weighted head and magnetic resonance imaging series showed an enhancing mass lesion measured about 3.9 cm × 3.5 cm × 2.7 cm in diameter in the left parotid gland, with deep lobe involvement

cells [Figure 2c]. There was no nodal metastasis detected. Furthermore, the cell type was similar to the undifferentiated carcinoma of the nasopharynx. The nasopharynx was rechecked, and no atypical presentation was noted. Positive serum EB virus (EBV) antibody (viral capsid antigen IgA/IgG) was proved postoperatively.

The final diagnosis of primary undifferentiated lymphoepithelial carcinoma of the left parotid gland, pT2N0M0, Stage II was made. The patient was referred for postoperative adjuvant radiotherapy over the primary site and the neck region because of positive deep lobe invasion. The intensity-modulated radiation therapy (64 Gy in 32 fractions) was performed. After these therapeutic modalities, there was no evidence of locoregional recurrence for more than 18 months and her nasopharyngeal mucosa still presented normally.

Informed consent permission was obtained from the patient herself for reviewing and publishing the medical history of this case.

DISCUSSION

Metastatic cervical lymphadenopathy is usually found if having undifferentiated carcinoma of the nasopharynx (nasopharyngeal carcinomas [NPCs]), especially in South-east Asia. Sometimes metastatic parotid nodes can also be found as an initial presentation of NPC, and may get misdiagnosis as a primary parotid neoplasm. Likewise, it might have same symptoms and signs including a faciocervical lump, local tenderness, numbness or neural paralysis which similar to presentations of primary parotid tumors. Thus many examinations for excluding metastatic lesion were required.

Undifferentiated carcinoma of the head and neck region is not unusual, but primary lesions in the salivary glands are rare. LEC is one of the three subtypes of undifferentiated carcinoma. It is dominant in the female gender and mostly occurs in

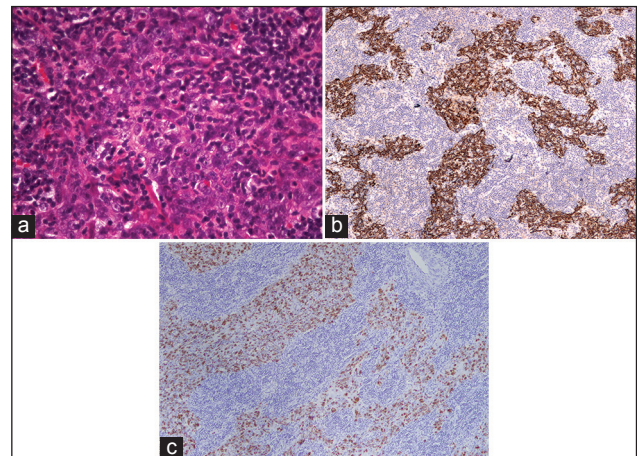


Figure 2: (a-c) Microscopic presentation of the specimen under a ×400 view showed irregular sheets of tumor cells with prominent nucleoli (a) and positive staining of cytokeratin AE1/AE3 (b) in lymphoid stroma compatible with undifferentiated lymphoepithelial carcinoma. *In situ* hybridization for Epstein-Barr virus-encoded RNA-1 showed positive (c, ×100)

parotid glands (82%).²⁻⁴ A median age of LEC around 45 years old was revealed, which is similar to NPCs.² However, NPCs are male-predominant diseases that differ from LECs. EB viral activity is also correlated to the disease in endemic ancients including Eskimos and Chinese in South-east Asia.^{5,6} The current theory is that when the EBV incorporates into the DNA of certain susceptible populations, it has a predilection for tumorigenesis.⁷

In histopathological presentations, tumor cells have large, round, vesicular nuclei, and positive on immunostaining for cytokeratin AE1/AE3, and infiltrate with lymphoid cells in the lymphoid stroma. It is similar to the undifferentiated type of NPC. Thus, difficulty can be made for distinguishing undifferentiated nasopharyngeal or oropharyngeal carcinomas with parotid nodal metastasis from primary parotid LECs at the first glance. Nasopharyngoscopy should be performed for checking the whole pharynx. MRI is the examination of choice for clinical staging and ruling out primary pharyngeal lesions. F-18 fluorodeoxyglucose-positron emission tomography scan can also help for detecting pharyngeal uptake and distal metastasis.⁸

LECs of the parotid glands are sensitive to radiotherapy. However, the surgery is sometimes regarded as the treatment of choice if applicable. Moreover, concurrent cervical nodal metastasis can be found in 10-40% of all cases.⁹ Tang *et al.* and Abdulla and Mian both recommended the therapeutic strategy of surgical excision with selective neck dissection in N-positive status patients and then followed with postoperative radiotherapy for benefiting local control rate.^{7,10} Twenty percentage of the patients developed locoregional recurrence and 20% of cases found distant

metastases in the lung, liver, bone, and brain in the followed period of 3 years.⁹ Nevertheless, early-staged patients own a good prognosis after an adequate treatment. Myers *et al.* reported estimated 2-, 5- and 10-year survival at 91%, 66%, and 29%, respectively for LECs of salivary glands.⁴ Wang *et al.* demonstrated a retrospective case series of Taiwanese with LEC, which showed 5-year overall survival rate at 85.6%.² However, further studies may be required for precise prediction.

CONCLUSION

The primary LECs of the parotid glands are rare and require serial examinations for excluding metastatic lymphadenopathy, especially nasopharynx originated. Surgical excision with or without selective neck dissection and followed with adjuvant radiotherapy may be adequate for increasing the local control rate.

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