

Case Report: Lymphoepithelial Carcinoma of the Parotid Gland with EBV Association

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ABSTRACT

Primary Lymphoepithelial Carcinoma (LEC) of the salivary gland is a rarely encountered malignant tumour by Otorhinolaryngology surgeons especially in Malaysia. It accounts for an estimated 0.4% of all malignant tumours of head and neck with a racial predilection towards Eskimos, people of Southern Coastal of China and Japanese. Histologically it exhibits a poorly differentiated neoplasm and a strong association with Epstein-Barr virus that could be similar to an undifferentiated nasopharyngeal carcinoma (NPC). The parotid gland is the most common location a Primary LEC of the salivary gland develops, with patients mostly presenting with a painless parotid swelling and cervical lymphadenopathy. Herein, the authors report a rare case of Primary LEC of the parotid in an unfortunate Malay female. In this case report we further highlight the pathological and radiological features including management of Primary LEC of the parotid as this tumour should be considered in all patients presenting with a painless parotid mass to an Otorhinolaryngology clinic.

Keywords

Lymphoepithelial carcinoma, Salivary gland, Parotid gland

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INTRODUCTION

Lymphoepithelial Carcinomas (LEC) are malignant epithelial tumours characterized by extensive lymphoid infiltration in the stroma. It could arise either as primary LEC or as secondary metastatic Nasopharyngeal Carcinoma (NPC). The later needs to be ruled out as histologically primary LEC and undifferentiated NPC are similar and both are associated as an Epstein-Barr virus (EBV) related malignancy.

Epidemiologically, it has a racial predilection towards Eskimos, people in the southern coastal region of China, and Japanese, making it rarely encountered and reported in Malaysia and especially in the local Malay community.¹ Herein, we report a rare case of primary LEC of the parotid in an unfortunate young Malay female. Our aim is to highlight the pathological and radiological features including its management, so that surgeons would be aware of primary LEC of parotid as a differential diagnosis in a patient presenting with a parotid mass.

CASE REPORT

A 38 years-old Malay female was referred from a private hospital due to financial constrains with complain of a painless left preauricular swelling for 6 months. She described the onset as insidious and had been progressively increasing in size. From a symptomatology perspective, she denied any facial asymmetry, otalgia, trismus or abnormal discharge from Stenson's duct. She also denied any constitutional symptoms nor family history of malignancy. She did not smoke and had no known allergies.

She appeared pink with stable vital signs. On physical examination there was a well-demarcated left parotid swelling measuring 3cm x 3cm which was also firm, non-tender with normal overlying skin. She did not have any palpable cervical lymph nodes. Facial nerve examination was unremarkable. Flexible nasopharyngolaryngoscopy examination was also unremarkable. An initial fine needle aspiration cytology (FNAC) report from the referring hospital revealed only atypical cell. Fortunately for us, a

positron emission tomography-computed tomography (PET-CT) had also been done prior referral which revealed a focally intense Fluorodeoxyglucose (FDG) hypermetabolism of a left parotid mass measuring 2.8x 1.3x 2.2cm with a standardised uptake value maximum (SUVmax) of 8.49 which had heterogenous FDG uptake and ill-defined margins on computer tomography (CT) (Figure 1).



Figure 1. Axial view of PET-CT showing focally intense FDG hypermetabolism in the left parotid mass (white circle) measuring 2.8x1.3x2.2cm with SUVmax of 8.49

A focal FDG uptake was also noted at the left level IIA cervical lymph node measuring 1.1x 1cm with a SUVmax of 4.99. There was no demonstration of distant metastasis and only physiological FDG uptake at the nasopharynx thus suggesting that the patient has a left parotid cancer with regional lymph node metastasis. Our initial working diagnosis were to rule out common parotid malignancies such as mucoepidermoid carcinoma, adenoid cystic carcinoma or adenocarcinoma. A second FNAC was performed with the hopes of a better diagnostic yield but unfortunately it also revealed only atypical cells.

A left superficial parotidectomy was carried out and the specimen was sent for frozen section. Frozen section indicated the presence of malignant cells, consistent with a poorly differentiated carcinoma with positive tumour cells at the deep margin. Hence, a total parotidectomy with facial nerve preservation was performed along with a left supraomohyoid neck dissection. On further microscopic evaluation, the tumour had superficial and deep lobe involvement and was composed of sheets of malignant epithelial cells interspersed by abundant

lymphocytic infiltration (Figure 2). These epithelial cells exhibited moderate to marked nuclear pleomorphism. The tumour fortunately did not have any lymphovascular permeation. Immunohistochemical expression of EBV latent membrane 1(LMP1) showed moderate to weak positivity (Figure 3) with tumour cells also being immunoreactive for cytokeratin AE1/AE3 (Figure 4). Histological evaluation of the lymph nodes from the neck dissection did not reveal any malignant cells with the suspicious lymph node at the level IIA from PET-CT being reported as reactive lymph node. Based on these findings, a diagnosis of primary LEC of the left parotid gland with no locoregional or distant metastasis was made with a staging of T2N0M0.

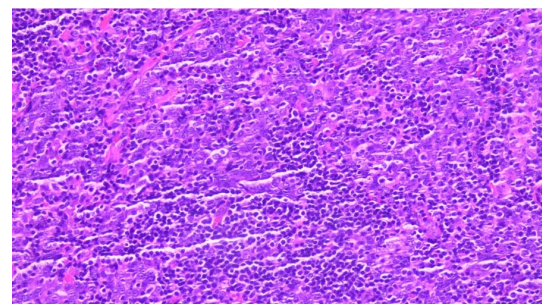


Figure 2. x 400 magnification: Sheets of malignant epithelial cells interspersed by abundant lymphocytic infiltrates. (Staining- hematoxylin & eosin)

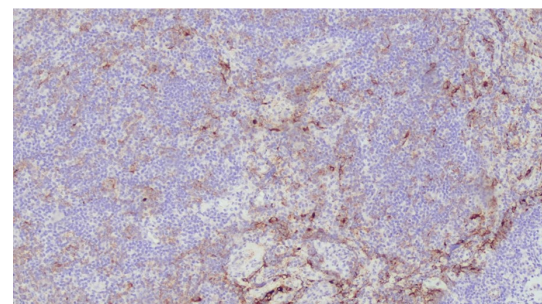


Figure 3. x 200 magnification : EBV LMP1 immunohistochemistry positive malignant epithelial cells

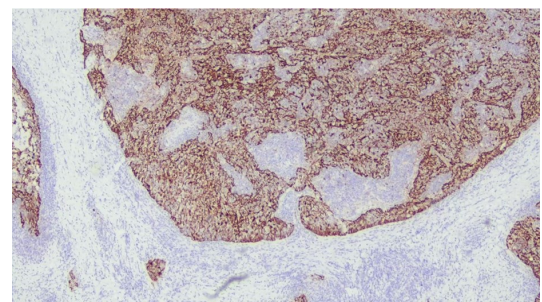


Figure 4. x100 magnification: Cytokeratin AE1/AE3 immunohistochemistry positive malignant epithelial cells

Post-operatively she recovered well with preserved facial nerve function. The patient was then referred for postoperative radiotherapy and a total of 60Gy in 33 fractions were delivered to the site of the left parotid. At the one year follow up, the patient remained free of disease.

DISCUSSION

LEC of the salivary gland is a disease that does not commonly occur in Malaysia especially in the Malay community making it rarely encountered here. This has caused the recognition and the treatment to be challenging. Salivary gland neoplasm comprises less than 3% of all head and neck tumours while LEC of salivary glands accounts for an estimated 0.4% of all malignant salivary gland tumour. This tumour affects the parotid gland in 80% of cases with the most common presentation being an insidious growing parotid mass as in this patient. 40% may have cervical lymph node metastasis while 20% may develop distant metastasis involving lung, liver, bone and brain.¹ In general, females are more affected than men with an average age of diagnosis at 40 years old.²

A FNAC would usually be the initial gold standard workup for diagnosis but this can be inconclusive at times due to improper sampling as occurred in this case.³ While sensitivity and specificity may be improved with core needle biopsy, there is always a risk of tumour seeding, injury to facial nerve and hematoma.⁴ Frozen Section on the other hand has been reported to have a 98.5% sensitivity and a 99% specificity while allowing the patient to receive all surgical procedures in a single operation as in our patient, compared to if an incision biopsy were to be done.⁵

While clinical presentation may be benign looking, radiological imaging may improve presurgical evaluation. A contrasted computer tomography (CT) would show LECs as solitary, solid, and poorly defined homogenous isodense to slightly low-density mass with cystic degeneration and calcification, and marked enhancement.⁶ A heterogenous FDG uptake and a combined ill-defined margin of the lesion on PET-CT, as

was also reported in this patient would usually direct towards a malignant parotid lesion with an accuracy of 85.6%.⁷ A PET-CT would also reveal is the presence of any concurrent distant metastasis.

LEC of the salivary gland may be a primary or a secondary tumour. According to WHO histology classification, LEC of the salivary gland is a subtype of undifferentiated carcinoma with lymphoid stroma. It can be histologically difficult to differentiate them from lymphoepithelial carcinoma of the nasopharynx. This makes it crucially important to examine the nasopharynx before diagnosing primary LEC of salivary gland via flexible nasopharyngoscopy and radiological assessment of the nasopharynx.⁸ A typical histopathology finding for LEC shows characteristic lymphoepithelioma with irregular, syncytial islands of epithelial tumour cells separated by an abundant lymphoid stroma. The tumour cell nuclei would be large, vesicular, and contained prominent nuclei.⁹

The standard management and treatment for LEC includes excision of the gland with clear surgical margins and neck dissection in patients with clinically and radiologically positive neck nodes followed by postoperative radiotherapy.¹⁰ It has been reported that with a combined surgical excision with postoperative radiotherapy, the 2-, 5- and 10-years survival rate to be 91%, 66% and 21% respectively.¹¹

In conclusion, when being faced with a patient with a parotid swelling, physicians should think of LECs as one of the differential diagnoses even though it is rare and not frequently encountered especially in a non-endemic region such as Malaysia. FNAC may not be representative of the actual diagnosis while frozen section could be a viable method to determine the histology and the type of surgical procedure to proceed with. Contrast CT scan and PET-CT would help improve preoperative diagnosis to differentiate between benign and malignant tumour and for surgical planning. Histopathology is the only avenue to confirm the diagnosis while complete surgical excision with postoperative radiotherapy is a treatment of choice as the tumour is radiosensitive.

CONFLICT OF INTEREST

The authors have no conflict of interest to declare

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