Available online at www.sciencedirect.com

SciVerse ScienceDirect

Annals of Diagnostic Pathology 16 (2012) 416–421

Annals of DIAGNOSTIC PATHOLOGY

Lymphoepithelial carcinoma of the parotid gland arising in an intraglandular lymph node: report of a rare case mimicking metastasis

Sarika Gupta, MD[a], Kwok Seng Loh, MBBS[b], Fredrik Petersson, MD, PhD[a,*]

[a]Department of Pathology, National University Health System, Singapore 119074, Singapore
[b]Department of Otolaryngology, Head and Neck Surgery, National University Health System, Singapore 119074, Singapore

Abstract We present a case (female patient aged 40 years) with a primary Epstein-Barr virus–associated lymphoepithelial carcinoma of the parotid gland that was confined to an intraparotid lymph node. This appearance of the tumor simulated a metastasis that was excluded by exhaustive radiologic and clinicopathologic investigations.

Keywords: Undifferentiated carcinoma; Lymphoepithelial carcinoma; Metastasis; Parotid; Epstein-Barr virus

1. Introduction

Lymphoepithelial carcinoma (LEC) is an uncommon primary malignant tumor of the salivary glands accounting for 0.4% [1] of all malignant salivary gland tumors. It displays identical histologic features to nonkeratinizing undifferentiated carcinoma of the nasopharynx (NP); that is, it is typified by sheets and nests of large malignant cells with large vesicular nuclei and prominent nucleoli. The tumor cells are intimately admixed with a reactive lymphoplasmacytic component and show absence of gland formation, intracellular mucin, and keratinization and a near 100% association with Epstein-Barr virus (EBV) in endemic areas [2-4]. Lymphoepithelial carcinoma is distinctly more common in certain ethnic groups such as in Inuits in Greenland, Alaska, Canada, and among southeastern Chinese [1]. The parotid gland is most frequently affected (80%) followed by the submandibular glands and rarely involves minor salivary glands of the oral cavity, oropharynx, and hypopharynx. A limited number of previous cases of ectopic, extraosseous salivary gland carcinomas have been reported [5-10]. However, we are not aware of any previous reported LEC that arose within and was confined to an intraparotid lymph. We herein present the clinicopathologic features of one such case that mimicked a metastasis.

2. Materials and methods

The tissue was fixed in formalin and embedded in paraffin, and 4-μm-thin sections were cut and stained with hematoxylin and eosin. Immunohistochemistry using the primary antibodies listed in Table 1 was performed using the Roche Ventana BenchMark XT autostainer (Ventana Medical Systems, Tucson, AZ) and Ventana Ultra View Universal DAB Detection kit (Ventana Medical Systems), with appropriate positive controls.

In situ hybridization for EBV-encoded small RNAs (EBERs) was performed with Leica BondMax autostainer using Leica Bond Polymer Detection kit (Leica Microsystem GmbH, Wetzlar, Germany).

3. Case report

A 40-year-old previously healthy Chinese woman with no family history of nasopharyngeal carcinoma (NPC) presented with a left-sided, slowly enlarging, painless, nontender mass in the parotid region of 1-year duration. She has no other significant symptoms such as pain, epistaxis, blood stained saliva, nasal obstruction, tinnitus, hearing loss, or cranial nerve palsies. Physical examination of the left parotid gland revealed a firm, movable mass measuring 2 cm in maximum dimension. No facial nerve paralysis was present. Examination of the nasal and oral cavity did not reveal any lesions. There were no mass in the NP, and the mucosa was

* Corresponding author. Tel.: +65 97714890; fax: +65 67780671.
E-mail address: fredrikpetersson@live.se (F. Petersson).

1092-9134/$ – see front matter © 2012 Elsevier Inc. All rights reserved.
doi:10.1016/j.anndiagpath.2011.03.007

Table 1
Antigens/ clones/dilutions and retrieval methods used in the immunohistochemical study

Antigen	Clone	Dilution	Antigen Retrieval	Supplier
AE1/3	AE1/3	1:300	Protease 2-8′	DAKO
S100	Polyclonal	1:2000	No retrieval	DAKO
CD20	L26	1:1500	CC1-Mild (39′)	DAKO
CD3P	Polyclonal	1:100	CC1-Mild (39′)	DAKO
CD21	IF8	1:50	Protease 1-8′	DAKO
Bcl2	124	1:50	CC1-Standard (69′)	DAKO
CD23	MHM6	1:50	CC1-Extended (99′)	DAKO
CD68	KP-1	1:1500	CC1-Mild (39′)	DAKO
Ki-67	MIB 1	1:50	CC1-Mild (39′)	DAKO
EBER		RTU	Enzyme 1-15′	Leica Microsystems

All IHC markers were performed using Roche Ventana BenchMark XT autostainer and with Ventana Ultra View Universal DAB Detection kit; EBER, indicates Epstein Barr virus-encoded RNA probe; CC1, cell conditioning solution pH6; M/W, microwave; RTU, ready to use.

completely smooth. The tympanic membranes were normal. A computed tomography scan detected a well-defined homogenous nodule measuring 2.1 × 1.8 cm in the superficial lobe of the left parotid gland. No enlarged cervical or other lymph nodes in the head and neck region were evident. The patient underwent fine-needle aspiration (FNA) cytology, which only showed reactive lymphoid cells. Based on the clinical findings and investigations, the diagnosis was that of a left parotid nodule, possibly due to an enlarged parotid lymph node. However, the differential diagnosis included a parotid tumor, and the patient was advised to undergo superficial parotidectomy. She elected to wait a further 2 months but finally agreed, and a left superficial parotidectomy was performed. Intraoperatively, the procedure was uneventful. There was an encapsulated parotid nodule in the superficial aspect of the parotid gland measuring 2 cm. The facial nerve was completely identified and preserved and was noted to be well away from the parotid nodule. No other nodules were noted.

Postoperatively (after the histopathologic examination), a metastasis from the NP or any other head and neck sites was excluded by magnetic resonance imaging (MRI) of the head and neck region. On MRI, the NP was not thickened and symmetrical. The neck did not show any enlarged lymph nodes. The EBV serology showed IgA-VCA of 1:640 and IgA-Ea of 1:40. Also, the endoscopic examination of the upper aerodigestive tract was repeated. This was normal. Two sets of bilateral biopsies from the NP failed to reveal any carcinoma. One of these procedures was performed under general anesthesia, which allowed for sampling of the deep NP.

4. Results

On review, the FNA revealed a predominance of reactive lymphoid cells including germinal center cells. However, a few aggregates of cohesive, enlarged, slightly spindly cells with prominent nucleoli intimately admixed with lymphoid

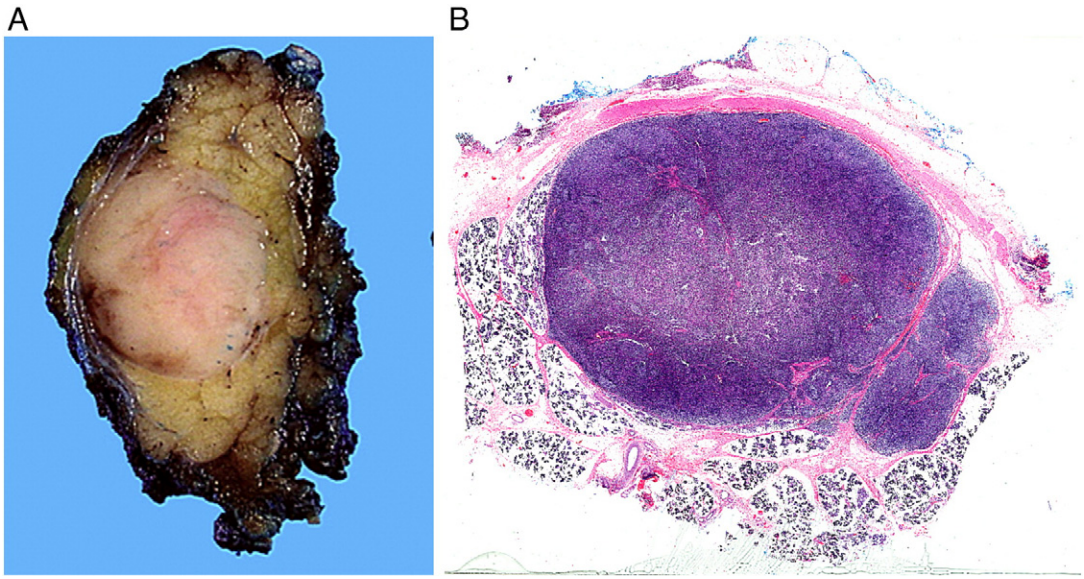

Fig. 1. Photomicrographs of the gross surgical specimen (A) and whole-mounted hematoxylin and eosin–stained section (B) showing a well-circumscribed encapsulated tumor.