Malignant Transformation in a Parotid Warthin’s Tumor: Clinical Features and Histopathological Examination

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Abstract

Warthin’s tumor is a salivary gland tumor consisting of epithelial and lymphoid components. The majority of Warthin’s tumors are benign and malignant transformation is extremely rare. We report a case of malignant transformation of a Warthin’s tumor of the right parotid gland. The patient had a right parotid tumor and underwent tumor excision. Histopathology after surgery showed malignant transformation of Warthin’s tumor. On examination, we found a cervical lymph node group VB and Fine Needle Aspiration (FNA) showed metastasis. We decided to perform a total parotidectomy and modified radical right neck dissection for the patient. Then the patient underwent adjuvant radiotherapy. Close follow-up was carried out and 3 months after surgery there was no evidence of recurrence or metastatic neoplasm. Therefore, if there is a parotid tumor which is suspected malignant, we should thoroughly investigate the cervical lymph nodes and consider prophylactic neck dissection although we do not find the susceptible nodes.

BACKGROUND

Warthin’s tumor (adenolymphoma) was first described by Aldred Warthin in 1929. Warthin’s tumor accounts for about 5-10% of all parotid tumors and it is the second most common benign tumor of the salivary glands. Warthin’s tumor is more common in men with the average age range from 60 to 70 years. It is also related to smoking. The tumor normally has no symptoms and begins as a slow growing nodular, indolent mass that is firm or fluctuant at palpation and about 10% of the cases appear on both sides [1-5].

A sudden increase in tumor size may be associated with inflammation or malignant transformation [1,2]. The malignant transformation of Warthin’s tumor is extremely rare and occurs in about 0.3% of cases. The transformation of the lymphoid component to a malignant lymphoma appears to occur more frequently than an epithelial malignant transformation, which is extremely rare [3,4]. Pathogenesis of malignant transformation of Warthin’s tumor is unknown [6]. Until 2008, only 32 cases of epidermoid carcinoma have been reported to arise in Warthin’s tumor [3]. There were 4 cases of squamous cell carcinoma as a malignant component have been listed by Therkildsen et al. [7]. P J Yaranal and Umashankar reported a case of squamous cell carcinoma which arose in a Warthin’s tumour of the right parotid gland in 2013 [8]. Fabiana Allevi and Federico Bigioli reported a case of squamous cell carcinoma arising in Warthin’s tumor in 2014 [9]. The epithelial component evolving into adenocarcinoma, mucopidermoid carcinoma, squamous cell carcinoma, oncocytic carcinoma and Merkel cell carcinoma have been documented [6,10-16].

CASE REPORT

A 63-year-old man had a painless mass of about 0.5cm in size located in the right auricular region. It had been present for the past year, but grew rapidly during the last two months. In those two months, the mass grew to approximately 7cm. Fine Needle Aspiration (FNA) was performed and the smears showed the epithelial cells with atypical nuclei. The patient then underwent tumor excision. Histopathology after surgery showed malignant transformation of Warthin’s tumor, the malignancy showing adenosquamous and squamous carcinoma features, margins negative.

The patient was transferred to Ho Chi Minh City Oncology Hospital. At the examination, we found only the right auricular region with mild edema, paralysis of the marginal mandibular branch and other organs not unusual.

The Doppler ultrasonography showed the right parotid was partially removed. The inferior pole in the deep partial of the superficial lobe had two mass about 9mm in size, located in the right auricular region. It had been present for the past year, but grew rapidly during the last two months. In those two months, the mass grew to approximately 7cm. Fine Needle Aspiration (FNA) was performed and the smears showed the epithelial cells with atypical nuclei. The patient then underwent tumor excision. Histopathology after surgery showed malignant transformation of Warthin’s tumor, the malignancy showing adenosquamous and squamous carcinoma features, margins negative.

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The Doppler ultrasonography showed the right parotid was partially removed. The inferior pole in the deep partial of the superficial lobe had two mass about 9mm in size. The cervical lymph node group Vb was hypoechoic about 10mm in size, angiogenesis in the navel and margin. FNA resulted in lymph node metastatic carcinoma (Figure 1).

On histo pathological examination of parotid gland tumor, the tumor shows one part of characteristic Warthin tumor, which is composed of bilayered oncocytic epithelium and dense lymphocytes background (Figure 2). The continuous area of malignant change was observed (Figure 3). The other part of malignancy exhibits malignant squamous cells and adenosquamous feature with small duct lumens (Figure 4).
Atypical mitoses are shown in figures (Figure 4).

We performed a total parotidectomy and modified radical right neck dissection for the patient. After surgery, the patient had paresis of the right facial nerve (Figure 5). Postoperative histology showed squamous cell carcinoma/adenocarcinoma grad 2, malignant transformation of Warthin's tumor and one cervical lymph node (group VB) metastatic with squamous cell carcinoma and adenocarcinoma features. The patient subsequently underwent adjuvant radiotherapy with Intensity Modulated Radiation Therapy technique. The doses were 60 Gy in 2 Gy fractions. Close follow-up was carried out and 6 months after surgery there was no evidence of local recurrence or metastatic neoplasm (Figure 5).

**DISCUSSION**

The diagnosis of the malignant transformation of Warthin's tumor to carcinoma is based on the following criteria [8-10]:

1. Presence of a pre-existing benign Warthin's tumor;
2. Presence of transitional zones from benign oncocytic to malignant epithelium;
3. Presence of an infiltrating growth in the surrounding lymphoid tissue;
4. Exclusion of metastasis to lymphoid stroma from an extra-salivary primary carcinoma.
Carcinomas arising in Warthin’s tumor are rare. Nagao et al. studied two cases of mucocystic carcinoma arising in Warthin’s tumor of the parotid gland [6]. Gunduz et al., reported cases of squamous cell carcinoma arising in Warthin’s tumor [7]. Fornelli et al., reported two cases of Merkel cell carcinoma of the parotid gland associated with Warthin’s tumor [12]. Seifert described bilateral mucocystic carcinomas arising in bilateral pre-existing Warthin’s tumor of the parotid gland [2]. In reported cases, one third showed metastasized regional lymph nodes and one case metastasized by blood to the lung and liver [9,14,17].

Clinically, our patient had a mass which enlarged rapidly within two months. The tumor size is 14 times greater than the original (7cm vs 0.5cm). This is the major factor to consider for malignancy.

Malignant diagnosis requires evidence of stromal invasion, local invasion or lymph node metastasis [6,9]. Our patient was diagnosed by local invasion on histopathology and cervical lymph node metastasis by FNA. Therefore, we suggest that the physicians should thoroughly investigate the cervical lymph nodes when the patient had a malignant Warthin’s tumor and consider prophylactic neck.

**CONCLUSION**

The malignant transformation of Warthin’s tumor is rare. Diagnosis is based on histopathology and immunohistochemistry. In clinical observations, we should be suspicious of patients with previous Warthin’s tumor, recent fast-growing tumors, and evidence of cervical lymph node metastasis with FNA.

**REFERENCES**

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