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Warthin's tumour in oral and maxillofacial regions: an 18-year retrospective study of 1084 cases in an eastern-Chinese population

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Abstract. There is little information in the English-language literature regarding Warthin's tumour (WT) in the eastern-Chinese population. A large retrospective study (1084 primary tumours over a period of 18 years) was carried out to investigate the clinicopathological features (patients' gender, age and tumour location) of these tumours in this population. A total of 994 (91.7%) patients were male and 90 (8.3%) were female, with a male/female ratio of 11:1. The mean age was 56.48 years (range 20–89 years), with a peak incidence in the fifth to seventh decade (82.1%). The favorite primary site of the tumour was the parotid gland ($n = 1055$), followed by intra-/peri-parotid lymph nodes ($n = 13$), upper neck ($n = 10$), submandibular gland ($n = 4$) and upper lip ($n = 1$). Multifocal WTs arose in 9.5% (103 patients) of cases whereas bilateral multifocal WTs were found in 0.65% (seven patients). In 24 (2.2%) patients, WT were found to coexist with other different types of neoplasm synchronously. The most common subtype of metaplasia was the squamous metaplasia (166/250, 66.4%). The usual treatment measure is (bilateral) superficial parotidectomy and the patients should be followed long term, in view of possible metachronous WT, even after prolonged time intervals.

Key words: Warthin's tumour; salivary gland tumours; multifocal tumours; bilateral tumours; Eastern Chinese.

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Adenolymphoma or papillary cystadenoma lymphoma was first described in 1929 by Warthin[1], and has been known since then as Warthin's tumour (WT) when present in the parotid gland. WT is the second most frequent benign tumour of the salivary glands

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after pleomorphic adenoma, representing between 8.5% and 20% of the total[2–4]. Over 80% of the entities are located in the superficial lobe of the parotid gland[5]. Due to the typical morphological features of WT, which consist of oncocytic epithelium and lymphoid stroma, and to the frequent detection of WT in intra-/peri-parotid lymph nodes, it is believed that this lesion stems from ductal elements trapped and developing within the parotid lymph nodes, suggesting that the adenomatous cystic proliferation causes a secondary lymphoid reactive response in the stroma[6,7]. Clinically, it is regarded as a slow-growing tumour, fluctuant on palpation due to its cystic structure, and mainly occurring in older men with a history of smoking[7,8]. Furthermore, multifocal and/or bilateral WTs have been reported and malignant transformation of WT into carcinoma or, more rarely, malignant lymphoma have also been documented[7,9]. The treatment strategy for WT is surgical resection with tumour-free margins, except for malignant transformation cases[2,6–8].

To the best of our knowledge, there are few reports in the English-language literature on WT in the eastern-Chinese population. The aim of this study was to analyse the clinicopathological features (patients' gender, age and tumour location) of WT of the oral and maxillofacial region in the eastern-Chinese population over a period of 18 years.

Materials and methods

This study included patients with WT who, during the 18-year period between January 1993 and December 2010, underwent operations in the Department of Oral and Maxillofacial Surgery, Ninth People's Hospital, School of Medicine, Shanghai Jiao Tong University, in the east of China.

Hematoxylin–eosin-stained slides (and immunostained sections if necessary) of all cases were reviewed and reclassified by two pathologists based on the World Health Organization (WHO) Pathology and Genetics of Head and Neck Tumors (2005) criteria. The data were analysed for their distribution of patient's sex, age and anatomical location of presentation. Meanwhile, the relative treatment modality, recurrence and follow-up term were also investigated.

Results

We noted that 994 (91.7%) patients were male and 90 were (8.3%) female, and the male/female ratio was 11:1. The patients' age at their first clinical presentation ranged from 20 to 89 years (average age 56.48 years), with a peak incidence in the fifth to seventh decade (82.1%). Furthermore, of all 90 female patients, the mean age was 61.6 years (range 23–88 years), with a peak incidence in the sixth to seventh decades (66.7%) (Fig. 1).

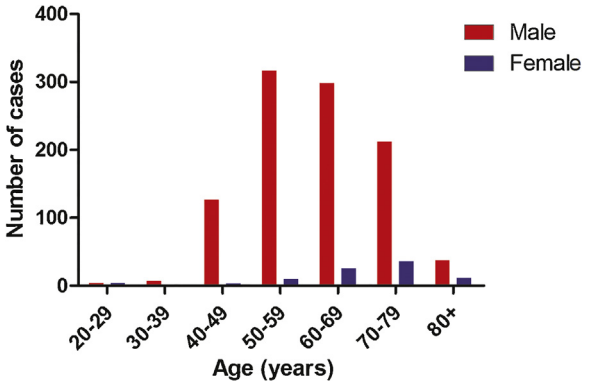

Fig. 1. Age distribution of 1084 Warthin's tumours.

The primary site of the tumour was the parotid gland (1055 patients), followed by intra-/peri-parotid lymph nodes (13 patients), upper-neck (10 patients), submandibular gland (four patients), upper-lip (one patient), and in one patient the tumour involved both the parotid gland and the submandibular gland (Table 1). The average diameter of tumours at clinical examination was 4 cm (range 2–10 cm). Meanwhile, the course of the disease was different, ranging from a few months to 20 years.

As shown in Table 2, multifocal WTs occurred in 9.5% (103 patients) of cases, whereas bilateral multifocal WTs only accounted for 0.65% (seven patients). Intriguingly, other histological types of neoplasm existed in 24 WT patients (2.2%). Among them, the pleomorphic adenoma was the most common benign tumour. Thirteen cases had synchronous malignancies of the head and neck, and nine cases of WT were discovered following selective neck dissection for other diseases. Squamous cell carcinoma was most common type for extra-parotideal lesions and the tongue was the most common location.

Regarding the relative amounts of lymphoid and epithelial components, several distinct subtypes of WT were distinguished by Seifert et al.[10]. As seen in Table 3, the total metaplasia proportion is 23.1% (250 in 1084 cases) in the present study. The subtype of metaplastic histopathological features was also itemized. We noted that squamous metaplasia is the most common metaplasia subtype, accounting for 66.4% (166 of 250 cases) (Table 4). Meanwhile, seven cases had epithelial dysplasia.

From the literature review (Table 5), mucoepidermoid carcinoma (MEC) was found to be the most common type of malignant transformation of WT. However, there was no malignant transformation case in our study. With regard to surgical treatment, only one patient was subjected to total parotidectomy (deep lobe tumour) with preservation of the facial nerve, and the remaining operations were partial parotidectomies with preservation of the facial nerve. During the follow-up, a second metachronous WT (MWT) developed with an average time interval of 5.2 years in 12 patients.

Discussion

In the present study, we analyzed the clinicopathological features of 1084 cases of WT in an eastern-Chinese population,

Table 1. Location of the 1084 Warthin's tumours.

Location	Number of cases (%)
Parotid gland	1055 (97.3%)
Superfacial lobe	987
Deep lobe	68
Intra-/peri-parotid lymph node	13 (1.2%)
Upper neck	10 (0.9%)
Lymph node	9
Soft tissue	1
Submandibular gland	4 (0.4%)
Parotid and submandibular gland	1 (0.1%)
Upper lip	1 (0.1%)

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