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Comprehensive analysis of parotid mass: A retrospective study of 369 cases

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ABSTRACT

Objective: To present the results of patients who underwent superficial or total parotidectomy because of parotid gland tumors in our tertiary care clinic.
Methods: The data of 362 patients who underwent parotid surgery from January 2008 to November 2015 were collected and analyzed in demographic, histopathological features, and complications.
Results: Three hundred sixty-nine cases (performed in 359 patients) were analyzed and we assessed complications of parotid surgery such as transient or permanent facial paralysis and Frey's syndrome. Pleomorphic adenomas and Warthin's tumors consisted 74% of all parotid gland tumors. These tumors were generally located in the superficial lobe and tail of the parotid gland (81%). Also, tumor size in the positive surgical margin group was larger than in the negative surgical margin group ($p = 0.012$).
Conclusions: Most of parotid gland tumors are benign. However, the frequency of malignancy increases in deep lobe of parotid gland. High grade malignant tumors have more tendency to have positive surgical margin during surgery, and facial paresis preoperatively.

1. Introduction

Parotid tumors constitute 2–3% of head and neck tumors, 0.6% of all neoplasms of the body, and 80% of salivary gland neoplasms [1]. Salivary gland tumors are quite rare but there are several histopathological types [2]. Most (80–85%) of parotid tumors are benign; the most common histologic type is pleomorphic adenoma, followed by Warthin's tumors [3]. Other rare benign tumors of the parotid gland are basal cell adenoma, canalicular adenoma, and lymphadenoma. Among the primary malignant tumors, the most common malign histologic type is mucoepidermoid carcinoma, followed by adenoid cystic carcinoma with second frequency [2–4].

A mass in the parotid region is the most common symptom, other symptoms include pain, facial asymmetry, tenderness, and cervical mass [5]. The possibility of malignancy should be considered in the presence of pain, facial palsy, and sudden-growing masses and lymph nodes [5,6].

Ultrasonography (USG) and magnetic resonance imaging (MRI) are the most important imaging modalities in the diagnosis and differential diagnosis of parotid gland masses. USG helps to make the distinction for solid or cystic and intraparotid or extraparotid location. MRI is very valuable for preoperative evaluation of tumor size, extent, and signal characteristics [6,7].

Fine-needle aspiration biopsy (FNAB) either with or without ultrasound guidance is a popular and useful biopsy method in

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the diagnosis of salivary gland tumors. FNAB is used for diagnosis and to distinguish benign from malignant tumors. In the literature, the specificity of FNA ranges from 56% to 100% and the sensitivity of FNA biopsy from 57% to 98% [8,9]. Incisional biopsy is contraindicated because of the risk of neoplastic implantation and recurrence of pleomorphic adenomas and malignant neoplasms [7].

As with treatment of all salivary gland tumors, surgery is the main treatment method for parotid gland tumors [1,4,7,10,11]. Nonetheless parotidectomy techniques till today were differently classified, the techniques of our clinic are grouped as; enucleation, partial superficial parotidectomy, superficial parotidectomy and total parotidectomy.

Some complications such as seroma, hematoma, first bite syndrome (FBS), temporary or permanent facial paralysis, Frey's syndrome, and salivary fistula can occur after parotidectomy [5,12,13]. These complications, particularly Frey's syndrome and facial dysfunction, are not life-threatening but important in terms of quality of life.

In this study, we aimed to present the clinical and pathologic features of patients who underwent parotidectomy between 2008 and 2015 in our tertiary center.

2. Method

The data of 359 patients with parotid masses who underwent parotid surgery in our clinic, which is considered a specialist referral center, between January 2008 to December 2015, were included in the study. The demographic data of patients, mass location, surgery, preoperative FNA biopsy, postoperative precise pathology, parotidectomy incision, preoperative and postoperative facial nerve function, surgical margin information, size of the tumor, multifocality, and recurrence data were recorded in an Excel database.

Mass location was defined clinically as superficial, deep, superficial and deep, parapharyngeally deep, and tail (Fig. 1a–d). Chronic inflammatory or autoimmune parotid growth was excluded from this study. All FNA biopsies in the

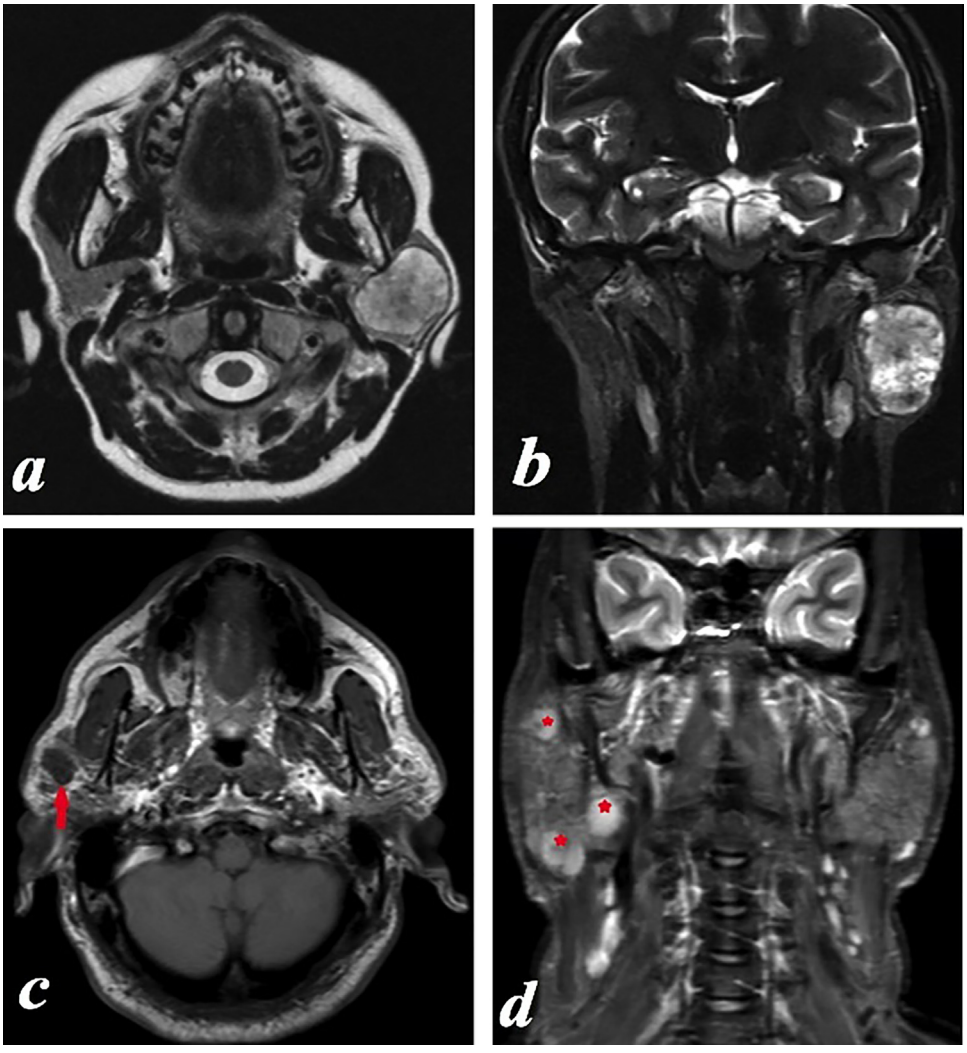

Fig. 1. Pleomorphic adenoma located in both superficial and deep lobe of left parotid gland. heterogenous hipointense on T1 weighted axial image (a) and hiperintense on T2 weighted coronal image (b) Multifocal salivary gland ductal carcinoma Isointense focus on T1 weighted axial MRI (red arrow) (c) Hyperintense foci of tumor (red stars) on T2 axial weighted MRI (d). (For interpretation of the references to color in this figure legend, the reader is referred to the web version of this article.)

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