

Salivary Gland Malignancies



Cristina P. Rodriguez, MD^a, Upendra Parvathaneni, MBBS, FRANZCR^b,
Eduardo Méndez, MD, MS^{c,d}, Renato G. Martins, MD, MPH^{a,*}

KEYWORDS

• Salivary cancer • Therapy • Review • Management • Systemic

KEY POINTS

- Salivary gland cancers are morphologically and biologically diverse.
- Surgical resection with postoperative radiation is considered a treatment standard for localized disease.
- Systemic therapy can be considered for patients with unresectable or metastatic disease with the goal of palliation of symptoms.

INTRODUCTION

Primary salivary gland malignancies represent less than 5% of all new head and neck cancers, with approximately 3000 new cases diagnosed in the United States annually. These diverse cancers arise from the malignant transformation of the various myoepithelial, ductal, and acinic components of 3 paired major (parotid, submandibular, and sublingual) and minor salivary glands distributed throughout the upper aerodigestive tract. The World Health Organization classifies 24 subtypes¹ characterized by marked biological heterogeneity. For example, high-grade mucoepidermoid carcinomas, salivary duct carcinomas, malignant mixed tumors, and high-grade adenocarcinomas have the most aggressive clinical course, with frequent early spread to regional lymph nodes and distant sites. In contrast, adenoid cystic carcinomas generally display an indolent natural history with a propensity for local or distant recurrence even 10 to 15 years after initial treatment. Knowledge of these unique factors is essential in planning the nuances of therapy.

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^a Division of Medical Oncology, Department of Medicine, University of Washington, 825 Eastlake Avenue East, MS G4940, Seattle, WA 98109, USA; ^b Division of Radiation Oncology, Department of Medicine, University of Washington, 1959 Northeast Pacific Street, Box, Seattle, WA 98195, USA; ^c Department of Otolaryngology, Head and Neck Surgery, University of Washington, 1959 Northeast Pacific Street, Box 356515, Seattle, WA 98195, USA; ^d Clinical Research Division, Fred Hutchinson Cancer Research Center, 1959 Northeast Pacific Street, Box 356515, Seattle, WA 98195, USA

* Corresponding author.

E-mail addresses: rgmart@uw.edu; rgmart@u.washington.edu

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INITIAL EVALUATION

The clinical presentation of a salivary gland mass can reveal a great deal about its nature, with certain symptoms and physical findings associated with malignancy. Rapid growth and/or pain (either localized or referred to the temporomandibular joint or the ear), and paresthesias/hypesthesias caused by perineural spread are concerning signs for malignancy.^{2,3} Facial nerve dysfunction, firmness and fixation of a mass, the presence of trismus for tumors of the parapharyngeal space, and nodal involvement in the neck are findings that increase suspicion for a malignant process.⁴⁻⁶

Computed tomography (CT) and MRI are the two most common imaging modalities used to evaluate salivary gland lesions, with the latter being the method of choice for patients with palpable masses and a strong suspicion for malignancy.^{7,8} Contrast enhancement per se cannot distinguish benign versus malignant processes but it can be critical in delineating the extent of the lesion. Irregular margins; bony invasion; presence of metastatic lymph nodes; and perineural spread along cranial nerve VII (stylomastoid foramen), cranial nerve V-3 (foramen ovale), or V-2 (foramen rotundum) can all be concerning signs of malignancy.^{6,9} Necrosis can also characterize malignancy, particularly in primary squamous cell carcinomas of the salivary glands (likely caused by squamous metaplasia in patients with chronic inflammation). In addition, PET is now being studied for its utility in evaluating salivary gland tumors. Keyes and colleagues¹⁰ found high sensitivity (100%) but low specificity (30%) in predicting malignancy in a cohort of 26 patients with parotid masses.

Histologic confirmation can be acquired before a definitive surgical procedure and this can be useful in planning the type and extent of definitive therapy. Fine-needle aspiration biopsy (FNAB) is the most widely used method for obtaining diagnostic tissue because of its convenience as an office procedure and its associated high sensitivity and specificity.^{11,12} In clinical scenarios in which surgical resection of a growing lesion is planned regardless of the histology, patients may opt to forgo FNAB. With respect to obtaining tissue for surgical preplanning, clinicians should consider the risk of performing unnecessary surgery before knowing the diagnosis based on permanent section evaluation. A frozen section intraoperatively can be useful for a diagnosis but its value compared with FNAB is controversial because its accuracy depends on the experience of the on-call pathologist. Some studies have shown that intraoperative diagnoses can change after permanent section examination.^{13,14} Others have shown the sensitivity and specificity of frozen sections to be 77% and 100%.¹⁵ The risk of either test is in performing unnecessary surgery, like a radical resection or a cervical lymphadenectomy, if a diagnosis of an aggressive malignancy is erroneously reported. Thus, the ultimate scope of treatment should be reserved until permanent section analysis is performed.

SURGICAL MANAGEMENT

Surgical excision of a primary salivary gland malignancy can be curative for most cases when the tumor is small, low grade, and easily accessible. Parotid malignancies are most curable with surgery, followed by the submandibular and sublingual glands. Ultimately, prognosis depends on the gland of origin, histology, grade, and extent of disease (ie, American Joint Commission for Cancer stage). Bulkier tumors or those of aggressive histology/grade are best treated with surgery first, followed by adjuvant therapy.

Surgery of the Parotid Gland and Management of the Facial Nerve

Among parotid tumors, avoiding injury to the facial nerve is critical when tumors are not fixed to, or encasing, the nerve. Thus, surgery typically involves removing the

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