Primary Squamous Cell Carcinoma of the Submandibular Salivary Gland: A Rare Entity

Rohith V. Gaikwad · S. V. Kumaraswamy ·
R. Keerthi

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Abstract Salivary gland tumors make up about 3% of all neoplasms of the head and neck. Salivary gland tumors vary widely in histopathological appearance, thus it prompted the development of a revised histopathological classification of tumours. Malignant tumors can arise in the major salivary glands or numerous minor salivary glands lining the mucosa of the upper aerodigestive tract. This case highlights one of the rare variants of primary squamous carcinoma of the sub mandibular salivary gland and the management of submandibular salivary gland malignancies.

Introduction

Salivary gland tumors are rare and make up about 3% of all neoplasms of the head and neck. The most commonly affected are the parotid, followed by the submandibular glands, then the minor salivary glands of the palate, and finally the sublingual gland which is rarely affected. Salivary gland tumors vary widely in histopathological appearance, which prompted the development of a revised histopathological classification of tumors [1]. Malignant tumors can arise in the major salivary glands or numerous minor salivary glands lining the mucosa of the upper aerodigestive tract. The distribution [1, 2] of benign and malignant tumors in major and minor salivary glands is shown in Table 1. Here we present a rare case of squamous

carcinoma arising from the submandibular gland and discuss the treatment approach for submandibular salivary gland malignancies.

Case Report

A 54-year-old man presented to the Maxillofacial surgery department of V. S. Dental College and Hospital with an 8 month history of a hard asymptomatic mass in the right submandibular area. His only complaint being, persistence of the swelling with a gradual increase in size. Past history revealed pan chewing for about 12 years, which he had quit for the past 6 months. A clinical examination revealed a well defined ovoid swelling in right submandibular region measuring approximately 5×4 cm, it was firm on palpation, non tender, and the overlying skin was uninvolved (see Fig. 1). No other palpable nodes were present in the neck.

Intraorally he had a complete set of dentition in a fairly good condition. Submucous fibrous bands were noted bilaterally in the buccal mucosa and multiple site biopsies from the region of the submucous fibrous bands were negative for malignancy.

The CT scan (Fig. 2) showed a well defined mass in the sub mandibular region not eroding the mandible and no significant cervical adenopathy. A FNAC of the mass was done and was reported as squamous cell carcinoma. Since there was no obvious primary in the oral cavity the possibility of this being a metastatic mass was contemplated and a pan endoscopic examination performed. Once confirmed that no other obvious primaries existed, an excision of the right submandibular salivary gland with an ipsilateral SONO and periosteal stripping was performed since there was no evidence of bone erosion on the CT scan. The

R. V. Gaikwad (✉)
Tata Memorial Hospital, Mumbai, India
e-mail: gaikwadrohith@gmail.com

R. V. Gaikwad · S. V. Kumaraswamy · R. Keerthi
V.S. Dental College & Hospital, Bangalore, India

Table 1 Distribution of salivary gland tumors

Site	Benign % (Indian series)	Malignant % (Indian series)
Submandibular	50 (18)	50 (15)
Parotid	80 (60)	20 (61)
Minor glands	20 (22)	80 (23)

Fig. 1 Pre op. photograph

histopathology report of the specimen suggested that the features were consistent with moderately differentiated squamous cell carcinoma arising from the salivary gland per se and special stains ruled out the possibility of mucoepidermoid carcinoma, the neck nodes were free of metastasis. Post operatively the patient was subjected to radiotherapy of 60 GY in 30 divided fractions. The patient reported for regular follow up appointments with no significant complaints. About 4 months post operatively he reported with a non healing wound with discharge and minimal pain in the surgical site. The wound was explored and later healed uneventfully. A month and a half later the patient again presented with pain and discharge from the

same region and a swelling of about 2×2 cm in the neck below the incision line. The swelling was firm and tender on palpation. A FNAC of the node was performed and was reported as metastatic node. A neck dissection was then performed. Histopathology report was positive for level IV nodes. The patient is on regular follow up.

Discussion

The identification and aggressive treatment of the malignancies arising from the sub mandibular salivary gland cannot be underestimated. Most often these malignancies do not produce any major symptom except for the swelling [3, 4], hence the patients present at an advanced stage as was our experience too. The most common malignancy arising in the submandibular salivary gland is adenoid cystic carcinoma [4, 5]. Squamous cell carcinomas arising from sub mandibular gland are an extremely rare entity, about 4% and are thought to arise from the epithelium incorporated into the gland during its development or due to dysplastic changes due to radiation. Distant metastasis to the submandibular salivary gland has been noted and reported [5] and needs to be ruled out. Thus, in such a scenario the value of a pan endoscopic examination and also a pre operative PET scan when facilities are available cannot be underestimated. The treatment for malignancies of the submandibular salivary gland would comprise mainly of a thorough surgical resection of the gland, a possible reverse marginal mandibulectomy if the gland is adherent to the mandible and segmental mandibular resection if bone erosion is present and a thorough cervical lymph node clearance. Adjunctive radiotherapy or chemotherapy is recommended [6, 7]. Data demonstrates the efficacy of postoperative RT in improving survival and local control for patients with carcinomas of the major salivary glands. The cause for treatment failure and death is

Fig. 2 Pre op CT

most often metastatic disease as was the case with our patient [8, 9]. The clinical stage at presentation has been noted to be a significant factor predicting survival whereas undifferentiated histology, male sex and skin invasion all contributed to poor outcome [7, 8, 10]. We would thus like to highlight this point in our report that the clinical stage of the disease at presentation along with an appropriate and thorough surgical resection and post operative adjuvant therapy would prove to be most beneficial and improve the prognosis in patients with squamous carcinomas of the submandibular gland.

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