

## Case Report

### WELL DIFFERENTIATED SQUAMOUS CELL CARCINOMA OF RETROMOLAR AREA WITH EARLY INVASION TO ADJACENT BONE –A CASE REPORT

Dr. Navjot Aujla<sup>1</sup>, Dr. Sanjay Talnia<sup>2</sup>, Dr. Saurav Bhargava<sup>3</sup>, Dr. Sandeep Singh Sihmar<sup>4</sup>

1. Oral & Maxillofacial Surgeon, Ambala, Haryana, India.

2. Assistant Professor in Department of Dentistry, Adesh Medical College & Hospital, Sahabhad, Kurukshetra, Haryana, India.

3. Senior Resident, Department of Oral & Maxillofacial Surgery, GTB hospital, New Delhi, India.

4. Darshan Dental & Oral Cancer diagnostic and Treatment Center, Bhiwani, Haryana, India.

#### Abstract:

Retromolar area has so much importance due to their spatial relationships with the surrounding structures and cancer of this area can spread to nearby muscles, adipose spaces, and other anatomic structures, such as the soft palate, tonsillar fossa, parapharyngeal space, and the floor of the mouth. Use of multiplanar computed tomography reconstructions to evaluate normal retromolar trigone anatomy and the main pathways of spread for tumours. The primary treatment of retromolar trigone carcinoma is radiotherapy and the surgical salvage. A 58 year old female patient was reported to Darshan Dental & Oral cancer center with complaints of oral ulcer since 6 months. Clinical examination revealed that an ulcer at right alveolar ridge without localized lymphadenopathy. Radiographs revealed minor bone loss at the particular area. Histologically she was diagnosed with well differentiated squamous cell carcinoma. The patient was advised for the surgical excision with radio-chemo therapy. The patient was under regular follow up.

Keywords: Carcinoma, Radiotherapy, Retromolar, Tomography.

#### Address for correspondence:

Dr. Navjot Aujla, Oral & Maxillofacial Surgeon, Ambala, Haryana, India.

Email: [darshanfdn@gmail.com](mailto:darshanfdn@gmail.com)

#### How to cite this article:

Navjot A et al. Well Differentiated Squamous Cell Carcinoma of Retromolar Area With Early Invasion To Adjacent Bone –A Case Report. Int J Head Neck Pathol.2022; 5(1):56-61.

Received: 04-05-2022; Accepted: 14-06-2022; Web Published: 23-06-2022

## **Introduction:**

The Retromolar Trigone (RMT) is a small triangular subsite of the oral cavity. It is the portion of mucosa that lies behind the 3<sup>rd</sup> molar tooth covering the anterior ramus of the mandible. The base of the triangle is posterior to the last inferior molar tooth; the apex is in continuity with the tuberosity of the maxilla behind the last upper molar tooth. It is bounded laterally by the gingival buccal sulcus and medially by the anterior tonsillar pillar. Most of the cancerous lesions involving the RMT are squamous cell carcinomas but sometimes minor salivary gland tumors are diagnosed. Because of its continuity with the oral cavity mucosa and its close relation to the mandible, spreading to adjacent structures can easily occur.<sup>1</sup>

Neoplasms of retromolar trigone have important peculiarities due to their spatial relationships with the surrounding structures. Tumours that involve this area can extend to nearby muscles, adipose spaces, and other anatomic structures, such as the soft palate, the tonsillar fossa, the parapharyngeal space, and the floor of the mouth. In spite of a relatively quick diagnosis, the real extent of these tumours is typically underestimated at clinical examination.<sup>2</sup> Mandibular involvement in these cases occurs mainly due to direct infiltration of the mandible by tumour. Main route of entry into mandible is reported to be through alveolar crest and lingual cortex if the tumour is located medial to mandible. The inferior alveolar nerve canal is also most important route of infiltration, because of that so many mandibles are

sacrificed without histological evidence of mandibular invasion.<sup>3</sup> The use of multiplanar computed tomography reconstructions to evaluate normal retromolar trigone anatomy and the main pathways of spread for tumours that arise in this area.<sup>2</sup> Given the surgical salvage and radiation therapy can be used with curative intent for small retromolar trigone carcinomas (T1-T2 lesions). For advanced stages without bone invasion, consideration for concurrent chemotherapy and radiation therapy might increase previous historical locoregional and survival rate.<sup>1</sup>

## **Case report:**

A 58-year-old female patient reported to Darshan Dental & Oral cancer center on with complaints of an ulcer at right lower posterior jaw region. Patient not having any history of smoking and diabetes . On clinical examination a singular, ulcerative, whitish pink in color, size 15m.mX 5m.m, firm in consistency, with irregular borders was identified on right alveolar ridge with extending till tonsil right RMT (Figure 1).



Figure-1: Clinical picture showing ulceroproliferative lesion on right alveolar ridge.

Orthopantomograph revealed a small radiolucency involving 47 and 48 area with infected root stumps of 38. (Figure-2)



Figure-2 OPG showing partial edentulous mandible with minor radiolucency along the right alveolar ridge.

CECT neck reported minor bone loss present measuring 5mm x 6mm x 2mm in the right alveolar region. No evidence of calcification or necrosis of lymph node (Figure-3)

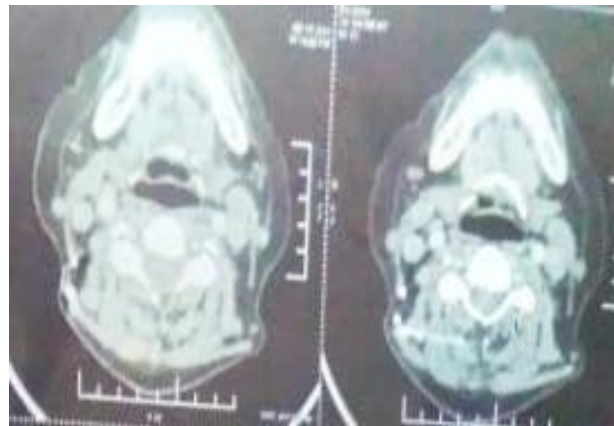


Figure-3 CT-scan image showing the radiolucency on both side of alveolar ridge.

Histopathology showed parakeratinized stratified squamous epithelium with features of severe epithelial dysplasia. The underlying connective tissue showed malignant epithelial islands and sheets with multiple keratin pearl production. Moderate amount inflammatory cell infiltrate was also noted (Figure 3). Histopathological features were suggestive of well differentiated squamous cell carcinoma (Figure-4)

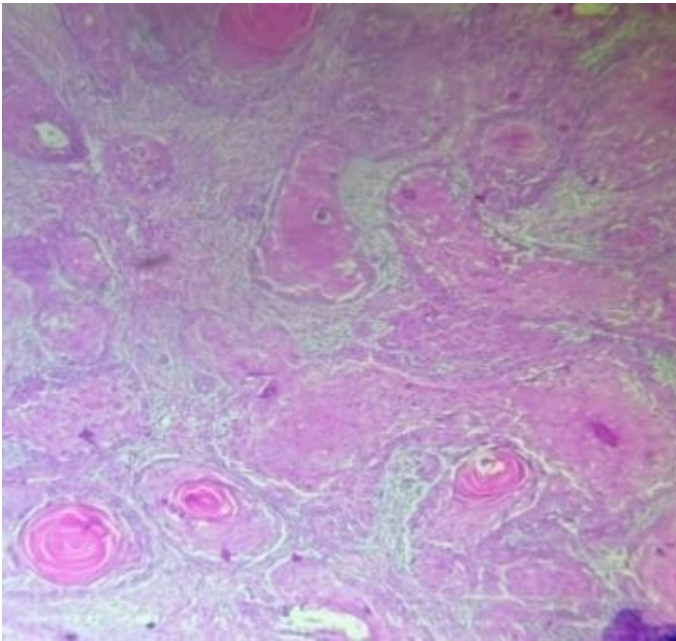


Figure-4: Photomicrograph showing multiple keratin pearls.

After review, the patient was advised for complete excision and referred to a higher center for chemotherapy and radiotherapy.

#### **Discussion:**

Ayed T et al did a retrospective study on 46 patients with squamous cell carcinoma of the retromolar trigone, treated primarily with radiotherapy between 1973 to 2002. The median follow-up was 43 months overall and 78 months for living patients. The 5-year overall survival and cause-specific survival rates were 47% and 78%, respectively.

Favorable prognostic factors for cause-specific survival were a lower tumor stage and a lower nodal stage. The 5-year local control rate was 49% after radiotherapy and 67% after surgery.<sup>1</sup>

Panday M et al conducted a prospective study on 25 patients, undergone mandibular resection and have mandibular invasion. They found that mandibular involvement was infiltrative in 14(56%) and erosive in 11(44%). It was also seen cortical involvement in 5(20%), marrow in 15(60%) and 5(20%) had spread through the inferior alveolar canal. They also found 96% lesions were located within 1 cm of the mandible.<sup>3</sup>

Between September 2000 and May 2001, a prospective open labeled study was carried out to assess the mandibular invasion in patients with oral squamous cell carcinoma located within 2 cm of the mandible. All patients were underwent an orthopantomogram (OPG), and computed tomography to detect the bone invasion. A total of 25 out of 51 patients suspected to have clinical or radiological suspicion of mandibular invasion and undergoing hemi or segmental mandibulectomy.<sup>3</sup>

William M et al conducted a study on 99 patients between June 1966 and August 2003, they were treated with radiotherapy alone (35 patients) or radiotherapy combined with surgery (64 patients). Follow-up ranged from 0.2 to 23.8 years (median, 3.3 yrs.). All living patients had follow-up for at least 1 year. The 5-year local–regional control rates after definitive radiotherapy versus surgery and radiotherapy were as follows: Stages I–III, 51% and 87%; Stage IV, 42% and 62%; and overall, 48% and 71%, respectively. The 5-year cause-specific survival rates after definitive radiotherapy compared with surgery and radiotherapy were as follows:

Stages I–III, 56% and 83%; Stage IV, 50% and 61%; and overall, 52% and 69%, respectively. Multivariate analyses revealed that the likelihood of cure was better with surgery and radiotherapy compared with definitive radiotherapy. They concluded that patients treated with surgery and radiotherapy had a better outcome than those treated with radiotherapy alone.<sup>4</sup>

Nishi H et al retrospectively analyzed the outcome and prognosis of 45 patients with SCC of the retromolar trigone, those underwent treatment between July 1992 and March 2011. Mean age was 62.4 years. Clinical stages were: stage I (n = 4, 8.9%); stage II (n = 10, 22.2%); stage III (n = 5, 11.1%); and stage IVa (n = 26, 57.8%). Surgical resection was performed in all patients and 6 patients also received postoperative radiotherapy. Reconstructive surgery using free flaps was performed in 38 patients; postoperative complications occurred in 5 of these patients. The 3-year local control rate was 80%, and the 3-year overall survival rates for stage I, II, III, and IV disease were 100%, 80%, 40%, and 49.2%, respectively. Cause of death was the original disease in 23 cases and other diseases in 2 cases. The most common cause of death from the original disease was cervical lymph node metastasis. They concluded that the presence of cervical lymph node metastasis was a negative prognostic factor. Marginal mandibulectomy may be selected for patients without distinct bone-marrow infiltration.<sup>5</sup>

Hao S.H et al discussed a study in which 50% patients with RMT squamous cell carcinoma were

treated with surgery and/or radiation or chemoradiation therapy between July 1993 to June 2004 at Chang Gung Memorial Hospital, Taiwan. Patients were followed up for 3 to 106 months (mean, 36 months). This study analyzed that masticator space involvement, neck recurrence, and cervical metastasis were poor prognosticators of survival by order. The maxilla bone was more involved by RMT cancer than the mandible. Patients with masticator space involvement had a 5-year actual survival rate of 22.5% and the mean survival time was only 37.8 months. They concluded RMT squamous cell carcinomas are more aggressive. Deep infiltration of the masticator space and invasion of the maxilla and mandible worsen the prognosis.<sup>6</sup>

Faisal M et al discussed a retrospective study in which 62 patients treated in Head and Neck Oncology unit of Shaukat Khanum Memorial Cancer Hospital and Research Centre, Lahore, Pakistan from 2004 to 2014. All are histopathological proven squamous cell carcinoma of retromolar trigone (RMT) treated with radical intent. They concluded that retromolar trigone involvement poses many vital structures at risk of involvement. Late presentation results in involvement of masticator space compromising both mouth opening and surgical outcomes. Surgery and radiotherapy have shown comparable results in disease control. Bone invasion has shown poor outcome in terms of loco-regional control and overall survival.<sup>7</sup>

## Conclusion:

We present a case of squamous cell carcinoma involving the retromolar trigone along with its clinical and radiographic findings.

## Acknowledgement –

We thank Prof. Dr. Karthikeyan Ramalingam, Associate Dean, Saveetha Dental College for his valuable inputs.

## Financial support and sponsorship - Nil

## Conflicts of interest - Authors declare no competing interest.

## References:

1. Ayad T, Gelinas M et al: Retromolar Trigone Carcinoma Treated by Primary Radiation Therapy: An Alternative to the Primary Surgical Approach, Arch Otolaryngol Head Neck Surg. 2005;131:576-582.

2. Silvio Mazziotti, Ignazio Pandolfo, Tommaso D'Angelo, Achille Mileto, Carmela Visalli, Santi Racchiusa, Alfredo Blandino, Giorgio Ascenti, Diagnostic Approach to Retromolar Trigone Cancer by Multiplanar Computed Tomography Reconstructions, Canadian Association of Radiologists Journal, Volume 65, Issue 4, 2014, Pages 335-344, ISSN 0846-5371, <https://doi.org/10.1016/j.carj.2014.04.001>.

3. Pandey M, Rao LP, Das SR, Mathews A, Chacko EM, Naik BR. Patterns of mandibular invasion in oral squamous cell carcinoma of the mandibular

region. World J Surg Oncol. 2007 Jan 30;5:12. doi: 10.1186/1477-7819-5-12. PMID: 17263872; PMCID: PMC1803788.

4. Mendenhall WM, Morris CG, Amdur RJ, Werning JW, Villaret DB. Retromolar trigone squamous cell carcinoma treated with radiotherapy alone or combined with surgery. Cancer. 2005 Jun 1;103(11):2320-5. doi: 10.1002/cncr.21038. PMID: 15825160.

5. Nishi H, Shinozaki T, Tomioka T, Maruo T, Hayashi R. Squamous cell carcinoma of the retromolar trigone: Treatment outcomes. Auris Nasus Larynx. 2018 Apr;45(2):337-342. doi: 10.1016/j.anl.2017.05.011. Epub 2017 Jun 16. PMID: 28624429.

6. Hao SP, Tsang NM, Chang KP, Chen CK, Huang SS. Treatment of squamous cell carcinoma of the retromolar trigone. Laryngoscope. 2006 Jun;116(6):916-20. doi: 10.1097/01.mlg.0000214900.07495.39. PMID: 16735888.

7. Faisal M, Abbas T et al: Treatment Outcomes of rare Retromolar Trigone Squamous Cell carcinoma using combined Modalities, Cureus.2017 May;9(5):e1203.

This work is licensed under the Creative Commons Attribution-Non Commercial 4.0 International License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc/4.0/> or send a letter to Creative Commons, PO Box 1866, Mountain View, CA 94042, USA.