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ATYPICAL SITES OF OCCURRENCE OF ORAL SQUAMOUS CELL CARCINOMA IN ORAL CAVITY: A CASE SERIES

Case Series

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Conflict of Interest: None
Grant Support & Financial Support: None

ABSTRACT

Background: Oral squamous cell carcinoma (OSCC) often presents in recognized sites such as the tongue and buccal mucosa; however, its manifestation in less common anatomical areas can complicate diagnosis and treatment. This case series explores OSCC in atypical locations to illustrate diagnostic challenges and emphasize the importance of broad clinical vigilance.

Case Details: Three cases are reported highlighting unusual presentations of OSCC. The first involves a 78-year-old male with a non-healing ulcer of the right mandibular alveolus diagnosed as moderately differentiated OSCC. The second case details a 51-year-old female presenting with growths on her alveolus and palate, identified as well differentiated OSCC. The third case describes a 52-year-old patient with a non-healing ulcer in the retro-molar trigone, diagnosed as moderately differentiated OSCC. These cases underscore the variable presentations of OSCC and the need for comprehensive evaluation in atypical sites.

Conclusion: The identification of OSCC in non-traditional locations underscores the need for clinicians to maintain an expansive differential diagnosis when evaluating oral lesions. Awareness and education on the variability of OSCC presentations are crucial for timely and accurate diagnosis, which can significantly influence treatment outcomes.

Keywords: Alveolus, Oral squamous cell carcinoma, Palate, Retro-molar trigone, Well-differentiated carcinoma.

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INTRODUCTION

Oral squamous cell carcinoma (OSCC) is recognized as the most common malignancy within the oral cavity, predominantly manifesting in the tongue and buccal mucosa. However, its occurrence in less typical intra-oral sites such as the alveolar ridge, palate, and retro molar area, although rare, presents significant diagnostic challenges (1, 2, 3). Beyond these locales, OSCC can also arise in the oropharynx, where Human Papilloma Virus is a known etiological factor (4). Similarly, major and minor salivary glands are infrequently sites of OSCC development, except in instances following radiotherapy (5). Remarkably, OSCC has been documented in the esophagus, demonstrating the potential for these malignancies to appear anatomically adjacent to traditional oral sites (6). Even more atypically, OSCC can manifest in extra-oral locations including the vermillion border of the lip, the paranasal sinuses, nasal cavity, nasopharynx, hypopharynx, and even within the osseous structures of the maxilla and mandible. Such presentations are often accompanied by symptoms such as nasal bleeding, sinusitis, and nasal passage obstruction, particularly when affecting the nasal cavity or paranasal sinuses (7, 8). Although primarily other pathologies like lymphomas predominate in the nasopharynx and hypopharynx, OSCC's presence, albeit rare, has been recorded (9). When occurring in the jaw bones, OSCC might present as a swollen mass or result in mobile teeth, further complicating the diagnostic landscape (9).

The rarity and unusual presentation of OSCC in these locations often lead to diagnostic confusion and delays. When histological examination is conducted in these unconventional sites, the interpretation challenges are amplified due to similarities with other conditions typically found in these regions (10, 11). This overlap in histological appearance underscores the importance of heightened awareness and meticulous diagnostic approaches to effectively identify and treat such atypical cases of OSCC. The objective of documenting and discussing these atypical cases is to enhance the understanding of OSCC's diverse manifestations and to underscore the importance of considering OSCC in differential diagnoses, even in less common locations. This awareness is vital for timely and accurate diagnosis, which is crucial for optimizing patient outcomes in cases of OSCC. Through detailed examination and reporting of such cases, the medical community can be better equipped to manage this complex and variable disease, ultimately contributing to improved therapeutic strategies and patient care. Ethical approval was taken from ethical committee of sharif medical & dental college Lahore with reference number SMDC/SMRC/234-22 dated 23-02-2022.

CASE DESCRIPTION

A 78-year-old male was referred to the clinic presenting with a persistent, non-healing ulcer on the right mandibular alveolus, noted for several months prior to his visit. The physical examination revealed a large ulcerating, fungating tumor extending from the superior alveolar margin. Diagnostic evaluations included imaging and biopsy; the resected tissue measured 7x4x3 cm with the tumor itself at 4x3x2 cm, involving a total of five teeth. Histopathological analysis characterized the lesion as moderately differentiated squamous cell carcinoma with a depth of invasion of 2 cm, absence of lymphovascular or perineural invasion, and involvement of the anterior soft tissue and lingual margins. Regional buccal lymph nodes were minimally involved (1/12). Based on these findings, a pathological stage of pT4 was determined. The treatment strategy for this patient involved surgical resection followed by a hemi-maxillectomy and selective neck dissection, aiming to manage the extensive local disease. Postoperatively, the patient was referred for radiotherapy to address any residual microscopic disease and enhance local control. Following the completion of radiotherapy and adequate wound healing, an obturator was placed to aid in oral function and aesthetics, significantly improving the patient's quality of life.

Figure 1: Pre-operative Oral Squamous cell carcinoma of the alveolus

The second case involved a 51-year-old female who presented with a growth on her alveolus and palate, which was a recurrence of previously treated oral squamous cell carcinoma. She had undergone surgery on her right maxilla in the past. The current presentation included two tissue fragments, 3x1 cm and 1x1 cm, showing well-differentiated squamous cell carcinoma upon histopathological examination. The tumor displayed clusters of malignant polygonal cells with vesicular nuclei and abundant eosinophilic cytoplasm, keratin pearls, and individual cell keratinization, surrounded by a dense mixed inflammatory cell infiltrate. The management for this recurrence included surgical excision of the mass, followed by maxillectomy and selective neck dissection. Post-surgical intervention, the patient underwent radiotherapy to decrease the risk of further recurrence. An obturator was also placed post-wound healing to restore oral function and contribute to the aesthetic restoration, facilitating a better postoperative recovery and functionality.

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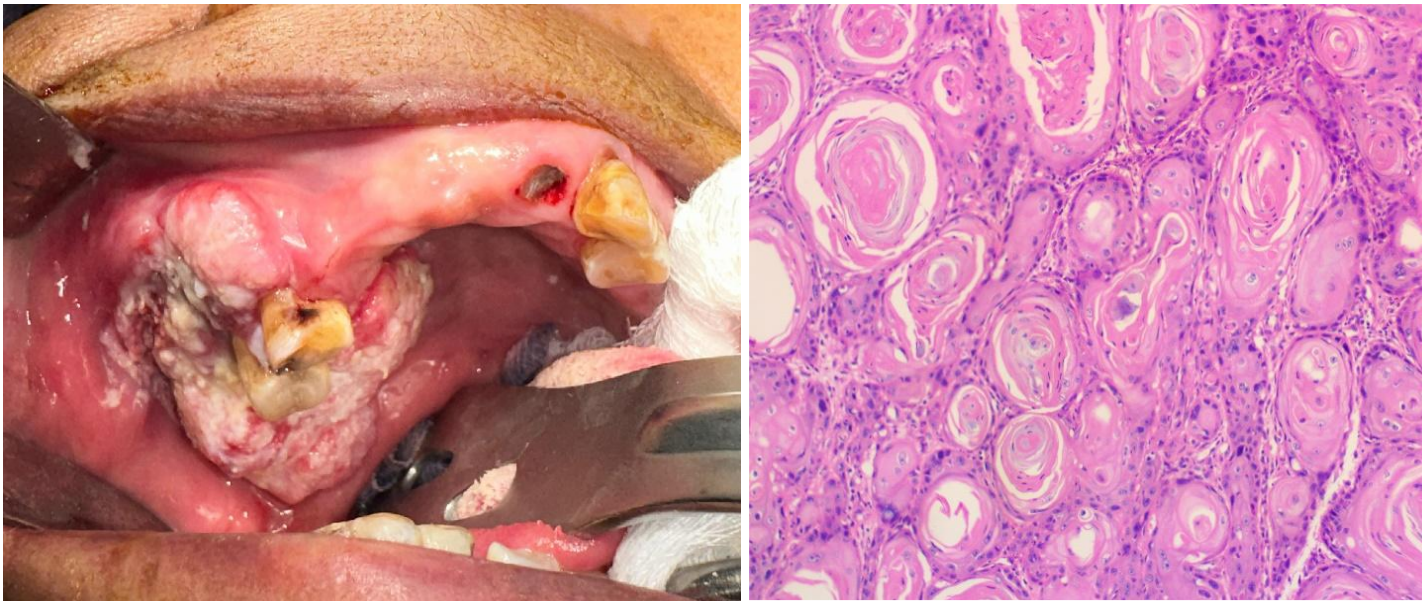

Figure 2: Well differentiated Oral Squamous Cell Carcinoma of the alveolus and Palate
a. pre-operative presentation **b. histopathological presentation**

In the third case, a 52-year-old male was examined for a non-healing ulcer in the retro-molar area, present for approximately 1.5 months. Diagnostic assessment revealed a 2 cm lesion with inverted margins, and no palpable lymph nodes. Biopsy of the tissue fragments, each measuring 0.5x0.3 cm, indicated moderately differentiated squamous cell carcinoma. The histopathology showed a malignant epithelial neoplasm originating from the stratified squamous epithelium, characterized by nests of large squamoid cells with pleomorphic nuclei, high nuclear to cytoplasmic ratio, and abnormal mitosis, with prominent individual cell keratinization and occasional keratin pearls. Treatment involved surgical excision of the mass and marginal resection of the mandible and maxilla, followed by radiotherapy to ensure comprehensive management of the disease. This approach was aimed at achieving clear margins and minimizing the likelihood of recurrence, thereby improving the prognosis and survival of the patient. Each of these cases underscores the complexities and nuances of diagnosing and managing atypical presentations of oral squamous cell carcinoma. Through meticulous diagnostic workup and tailored therapeutic strategies, these cases contribute valuable insights into the clinical management of OSCC, highlighting the need for vigilance in cases presenting with atypical features.

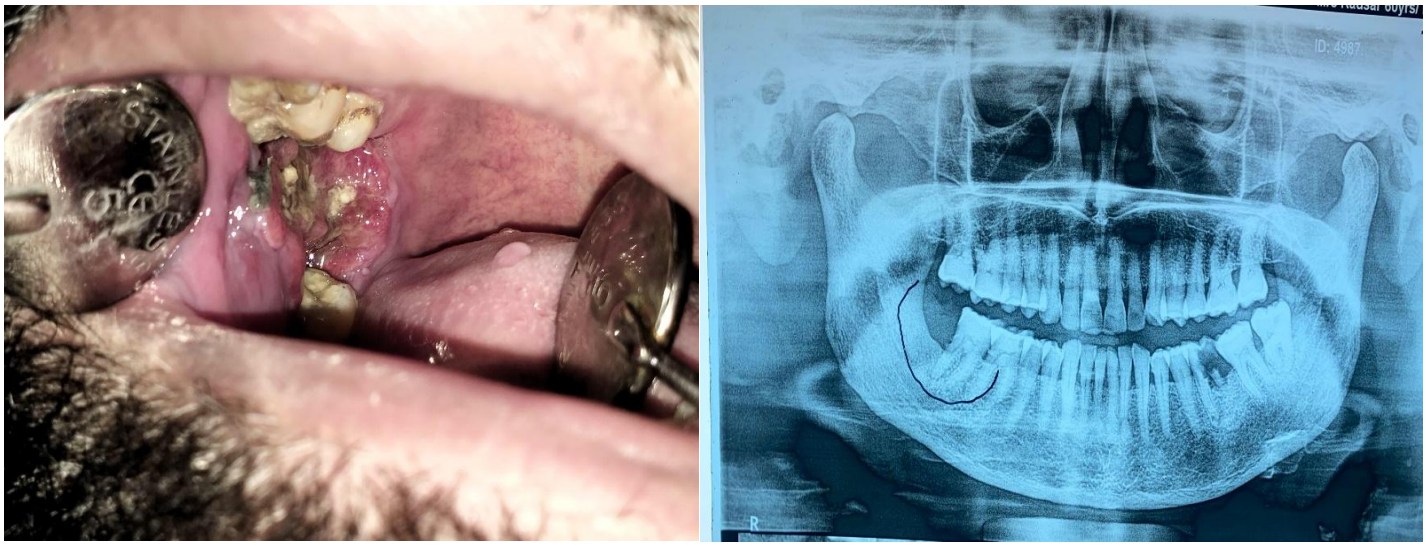

Figure 4: Moderately differentiated Squamous cell carcinoma of the retro-molar area
4a. pre-operative clinical presentation **4b. Orthopantomogram**

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DISCUSSION

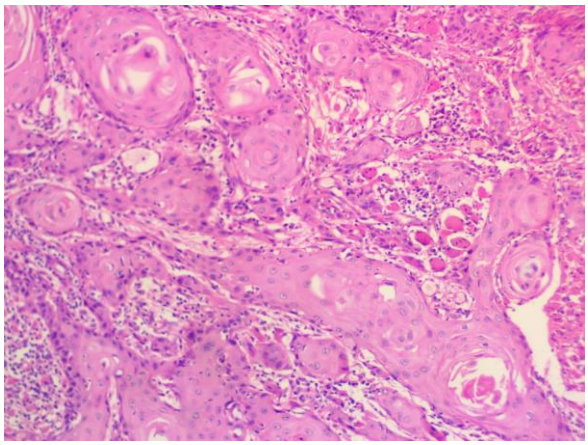

Figure 3: Moderately differentiated OSCC of the retro-molar area

Oral squamous cell carcinoma (OSCC) is increasingly prevalent worldwide and ranks as the 11th most common cancer (5, 12). The majority of these carcinomas are associated with smoking or tobacco chewing, known risk factors that facilitate the transition from pre-malignant to malignant lesions (13, 14). The cases presented here highlight OSCC's propensity to develop in less typical locations within the oral cavity, such as the alveolus and retro-molar area, areas not commonly associated with high-frequency OSCC manifestations. The current cases draw parallels with similar instances in existing literature. For example, the case of a 48-year-old female diagnosed with OSCC of the mandibular alveolus presented with desquamative changes and mobility of the involved teeth, closely resembling the clinical scenario of the first case described in this series (15). Similarly, a reported case of a 58-year-old female with OSCC in the retro-molar area complements our third case, underscoring the critical need for awareness of possible OSCC presentations in this rare location (17). These comparisons not only validate the clinical observations and management strategies employed in our cases but also reinforce the variability and complexity of OSCC presentations, emphasizing the importance of a comprehensive diagnostic approach.

Additionally, the cases involving palatal OSCC, including a 68-year-old female experiencing a burning sensation and a 38-year-old female with systemic lupus erythematosus, illustrate the disease's diverse clinical presentations and the potential influence of systemic conditions on oral health (18, 19). These reports underscore the need for clinicians to maintain a high degree of suspicion for OSCC in patients presenting with non-specific symptoms like burning or discomfort in the palate, especially those with underlying systemic diseases. The key learning outcomes from these cases include the recognition of OSCC in atypical sites, the importance of considering a broad differential diagnosis in the presence of non-healing oral lesions, and the necessity for aggressive and comprehensive management strategies. These insights are crucial for improving diagnostic accuracy and treatment outcomes in OSCC. The strengths of the current discussion are its emphasis on atypical presentations and the comprehensive review of similar cases, which enhance understanding and awareness. However, limitations include the potential for selection bias in the cases chosen for discussion and the generalizability of findings from individual case reports to broader patient populations. The novel presentations and management of OSCC in these cases contribute significantly to the existing literature, offering valuable insights for clinical practice and future research. This discussion not only sheds light on the complexities of diagnosing OSCC but also highlights the importance of interdisciplinary collaboration in the management of this challenging and diverse malignancy.

CONCLUSION

The presentation of oral squamous cell carcinoma (OSCC) at atypical sites, as highlighted in these cases, underlines the necessity for clinicians to possess a deep and current understanding of both literature and ongoing research within their field. Such knowledge is crucial for improving early detection and timely management of OSCC, where typical diagnostic cues might be absent. These cases emphasize the importance of vigilance and a comprehensive evaluative approach in clinical practice to mitigate the risks associated with delayed diagnosis. Ultimately, these insights encourage ongoing education and adaptability among healthcare professionals, ensuring that advancements in research translate into improved patient care and outcomes.

Author	Contribution
Nauman Rauf Khan	Data collection, concept and design, final approval.
Rizwana Sultan	Concept and design, manuscript writing.
Muhammad Zahid Hashir	Manuscript writing.
Farwa Shabir Bhatti	Concept and design, manuscript writing.
Huma Azhar	Data collection, manuscript writing.
Maria Jabbar	Data collection, manuscript writing.
Hira Butt	Data collection, concept and design, manuscript writing, critical revision, supervision, and final approval.

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