Clinics of Oncology

Case Report ISSN: 2640-1037 | Volume 3

Oral Squamous Cell Carcinoma in a Patient with Vitiligo: A Case Report

Eratam N and Kamburoglu K*

Department of Dentomaxillofacial Radiology, Faculty of Dentistry, Ankara University, Ankara, Turkey

***Corresponding author:**

Kıvanc Kamburoglu,
Department of Dentomaxillofacial Radiology,
Faculty of Dentistry,
Ankara University, Ankara, Turkey,
Tel: + 903122965632;
Fax: + 903122123954;
Email: dtkivo@yahoo.com;
kamburogluk@dentistry.ankara.edu.tr

Received: 02 Nov 2020
Accepted: 18 Nov 2020
Published: 24 Nov 2020

Citation:

Eratam N and Kamburoglu K, Oral Squamous Cell Carcinoma in a Patient with Vitiligo: A Case Report. Clinics of Oncology. 2020; 3(4): 1-4.

Keywords:

Oral squamous carcinoma; Vitiligo; Malignancy; Autoimmunity

1. Abstract

Oral Squamous Cell Carcinoma (OSCC) ranks among the deadliest types of cancer worldwide. There are more than half a million diagnosed cases of squamous-cell carcinoma of the head and neck worldwide each year. The effect of alcohol consumption alone and synergistically with tobacco are etiological factors well documented in the literature. Although the relationship between vitiligo and malignancies was not well-established, various cases of malignant tumours were reported in association with vitiligo. When a patient presents with intra-oral lesions, it is critical to obtain a detailed history and physical examination. Early detection of cancer is a key factor for improved prognosis and increased patient survival rate. Dentists should evaluate lesions that do not heal within two weeks of removal of etiological grounds or irritation factors in terms of malignancy.

2. Introduction

Oral Squamous Cell Carcinoma (OSCC) accounts for more than 95% of all head and neck cancers and ranks among the eight mortal types of cancer worldwide [1]. There are more than half a million diagnosed cases of squamous-cell carcinoma of the head and neck worldwide each year, primarily affecting the oropharynx, oral cavity, hypopharynx, and larynx [2, 3]. Its prevalence changes for various parts of the world. The Asian continent has the highest incidence and mortality rates of oral cavity and oropharynx cancers among all other countries [4, 5]. The development of oral carcinogenesis shows multifactorial etiology - endogenous (genetic) and exogenous (environmental and behavioral) factors [6]. Gene mutations and activation of proto-oncogenes (ras, myc, EGFR) or inhibition of tumor suppressor genes (TB53, pRb, p16) may also cause cancer development in the pharynx and oral cavity; however, no specific gene has been identified in OSCCs [7]. Recent studies have indicated that circular RNAs are involved in the tumorigenesis, progression, invasion and chemo-sensitivity of head and neck cancers and that some circular RNAs may serve as diagnostic and prognostic biomarkers [8]. Tobacco, alcohol use, poor oral hygiene, viral agents and chronic irritation are among the most important etiological factors [9]. Alcohol consumption is associated with oral cancer, with independent action and synergistically with tobacco [6, 10]. Tongue is considered as the most frequently affected site, followed by gingiva, buccal mucosa, floor of mouth, palate and lip, and occasionally found in retro-molar area or other oral sites [11, 12]. The lateral and ventral surfaces of the tongue and the floor of the mouth are the most common sites of oral SCC. This is based on the fact that the carcinogens within tobacco dissolve in the saliva and tend to accumulate in the gravity-dependent regions of the oral cavity, also called the oral mucous reservoir [13, 14]. Potentially Malignant Disorders (PMDs) transforming into OSCCs are leucoplakia, Proliferative Verrucous Leucoplakia (PVL), erythroleucoplakia, erythroplakia, Oral Sub-

mucous Fibrosis (OSMF) and Oral Lichen Planus (OLP) respectively [8]. Early detection of cancer is a key factor for improved prognosis and increased patient survival rate [15]. Diagnosis of oral squamous carcinomas can be challenging for dentists due to varying clinical manifestations and can be misdiagnosed as reactive or benign lesions [16, 17]. There are several published cased reports of OSCCs that mimics and misdiagnosed as denture related traumatic ulcer [17], Epstein-Barr-virus-related mucocutaneous ulceration [18] and peri-implantitis [19]. The clinical presentation of oral squamous cell carcinoma can range from a white plaque to an ulcerated lesion [20].

3. Case Report

A sixty-nine-year-old, male, completely edentulous patient was referred to our clinic for renewal of his total removable prosthesis. The patient reported no known medical problem and no medication use. He had history of tobacco use. He had multiple focal vitiligo patches in his peri-oral region. He was diagnosed as having vitiligo but no specific treatment had been administered. He did not remember the exact duration of his facial vitiligo lesion. Intraoral examination revealed locally ulcerated, nodular lesion that is 1 cm x 0.8 cm x 0.5 cm in size, 0.2 cm raised from the mucosal surface, in the retromolar region. The patient reported that the lesion has been presented for four years with no pain (Figure 1). The hard tissue structures of the facial area were examined with panoramic radiography and no change was detected (Figure 2). There was no significant regional lymphadenopathy. Incisional biopsy was performed and histopathological examination of the specimen revealed dysplastic oral mucosal epithelium and a malignant epithelial tumour that invaded the underlying connective tissue. This tumour lesion with verrucous proliferations towards the oral cavity was originating from the surface mucosal epithelium. Within the epithelium in tumour-related areas elevated and atypical mitosis, dyskeratotic cells and a few giant tumour cells were also observed. Although the tumour showed infiltration into the superficial muscle tissue in the form of small cell groups and tumour islands, no tumours were observed in deeper tissues. The lamina propria comprised of inflammatory cell infiltration rich in dense lymphocytes aggregations. Based on clinical, radiographic, and histopathological examinations, the case was diagnosed as Squamous Cell Carcinoma (SCC). In the lateral surgical margins, the tumour continuity was observed. The patient was referred to Department of Otolaryngology for further treatments.

Figure 1: The patient had multiple focal vitiligo patches in his perioral region. Intraoral examination revealed locally ulcerated, nodular lesion that is 1cm x 0.8 cm x 0.5 cm in size, 0.2 cm raised from the mucosal surface in the retro molar region. The patient reported that the lesion has been presented for four years with no pain.

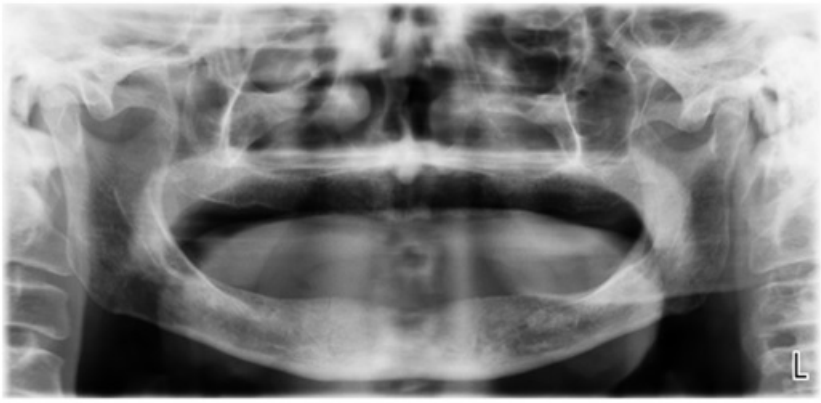

Figure 2: Panoramic radiography of the patient with oral squamous cell carcinoma

4. Discussion

The present report describes a case of oral squamous carcinoma with perioral multiple focal vitiligo patches. Vitiligo is an acquired chronic disorder that cause skin depigmentation with around 1% global prevalence, affecting people of all ages, skin types and genders [21]. The exact aetiology of vitiligo remains obscure, but autoimmunity has been strongly implicated in the development of disease as approximately 30% of vitiligo patients are affected with at least one additional autoimmune disorder [22]. As the immune system affects oncogenesis greatly [23, 24], it raises interest to gauge how the abnormalities in immune system in vitiligo patients influences cancer development [25]. Although the relationship between vitiligo and malignancies was not well-established, various cases of malignant tumours were reported along with vitiligo, including melanoma, squamous cell carcinoma, basal cell carcinoma, breast cancer, bladder cancer, colorectal cancer, leukaemia and Hodgkin's disease [26-35]. A nationwide population-based study reported evidence on the increased risks of certain cancer in vitiligo patients [25].

A literature review did not disclose cases of oral squamous cell carcinoma associated with vitiligo yet there existed several reports where squamous cell carcinoma patient with vitiligo were reported [28, 37, 38]. Melanin is known to protect the skin against harmful effects of ultraviolet radiation. Hence, vitiligo patients pose higher risk of developing such malignancies. However; reported cases of skin cancer in chronically light exposed vitiligo patches were found to be rare [28, 38]. A systematic review and metaanalysis [39], suggested that people with vitiligo are not at increased risk of skin cancer. They stated that it was important to acknowledge studies that assessed the association between melanoma and vitiligo might be discussable since vitiligo occurring during melanoma or treatment of melanoma is very difficult to differentiate from vitiligo itself. Wu et al [40], observed an inverse relationship between risk of vitiligo and skin cancers in the RALY-EIF252-ASIP-AHCY-ITCH, IRF4, TYR, and MC1R genes. Today, it is not known whether the coexistence of vitiligo and various malignant tumours is a coincidence or whether there are common etiologic factors. Therefore, future research is essential by conducting a population-based longitudinal study [38].

5. Conclusion

When a patient presents with intra-oral lesions, it is critical to obtain a detailed history and perform a thorough physical examination. Obtaining a history of nicotine/tobacco and alcohol use, dental history, trauma or injury is crucial [3]. Early detection of Oral Squamous Cell Carcinoma (OSCC) is challenging for dentists as the clinical features vary. Therefore, dentists should evaluate lesions that do not heal within two weeks of removal of etiological grounds or irritation factors in terms of malignancy [40]. OSCC prevention is based on the identification in early stages, and a definitive diagnosis can only be made after a biopsy and histopathological examination is conducted [41]. The morbidity and mortality rates associated with this malignant pathology significantly improve with early diagnosis [42, 43].

References

1. Peng QS, Cheng YN, Zhang WB, Fan H, Mao QH, Xu P. circRNA_0000140 suppresses oral squamous cell carcinoma growth and metastasis by targeting miR-31 to inhibit Hippo signaling pathway. Cell Death Dis. 2020; 11(2): 112.
2. Wikner J, Gröbe A, Pantel K, Riethdorf S. Squamous cell carcinoma of the oral cavity and circulating tumour cells. World J Clin Oncol. 2014; 5(2): 114-24.
3. Patel P, Dave H, Desai R, Cesar LA, Yagnik PJ. Squamous Cell Carcinoma of Left Buccal Alveolar Ridge. Cureus. 2019; 11(7): e5271.
4. Bugshan A, Farooq I. Oral squamous cell carcinoma: metastasis, potentially associated malignant disorders, etiology and recent advancements in diagnosis. F1000Res. 2020; 9: 229.
5. Al-Jaber A, Al-Nasser L, El-Metwally A. Epidemiology of oral cancer in Arab countries. Saudi Med J. 2016; 37(3): 249-55.
6. Vargas-Ferreira F, Nedel F, Etges A, Gomes APN, Furuse C, Tarquinio SBC. Etiologic factors associated with oral squamous cell carcinoma in non-smokers and non-alcoholic drinkers: a brief approach. Brazilian Dental Journal. 2012; 23(5): 586-90.
7. Guo Y, Yang J, Huang Q, Hsueh C, Zheng J, Wu C, et al. Circular RNAs and their roles in head and neck cancers. Mol Cancer. 2019; 18(1): 44.
8. Bugshan A, Farooq I. Oral squamous cell carcinoma: metastasis, potentially associated malignant disorders, etiology and recent advancements in diagnosis. F1000Research. 2020; 2(9): 229
9. Kumar M, Nanavati R, Modi TG, Dobariya C. Oral cancer: Etiology and risk factors: A review. J Can Res Ther. 2016; 12: 458-63.
10. Boing F, Antunes JLF. Socioeconomic conditions and head and neck cancer: a systematic literature review. Cien Saude Colet. 2011; 16: 615-21.
11. Chen F, Cao Y, Huang J, Yan L, Lin L, Liu F, et al. A novel prognostic index for oral squamous cell carcinoma patients with surgically treated. Oncotarget. 2017; 8: 55525-33.
12. Yan L, Chen F, Liu F, Qiu Y, Wang J, Wu J, et al. Differences in modifiable factors of oral squamous cell carcinoma in the upper and lower of oral fissure. Oncotarget. 2017; 8(43): 75094-101.
13. Chen JK, Katz RV, Krutchkoff DJ. Intraoral squamous cell carcinoma: epidemiologic patterns in connecticut from 1935 to 1985. Cancer. 1990; 66: 1288-96.
14. Patel P, Dave H, Desai R, Cesar LA, Yagnik PJ. Squamous Cell Carcinoma of Left Buccal Alveolar Ridge. Cureus. 2019;11(7): e5271.
15. Hadzic S, Gojkov-Vukelic M, Pasic E, Dervisevic A. Importance of Early Detection of Potentially Malignant Lesions in the Prevention of Oral Cancer. Mater Sociomed. 2017; 29(2): 129-33.
16. Minhas S, Sajjad A, Kashif M, Taj F, Waddani HA, Khurshid Z. Oral

Ulcers Presentation in Systemic Diseases: An Update. Open Access Maced J Med Sci. 2019; 7(19): 3341-7.

17. Valente VB, Takamiya AS, Ferreira LL, Felipini RC, Biasoli ÉR, Miyahara GI, et al. Oral squamous cell carcinoma misdiagnosed as a denture-related traumatic ulcer: A clinical report. The Journal of Prosthetic Dentistry. 2016; 115(3): 259-62.
18. Aldridge T, Paraneetharan Brennan PA, Ilankovan V. Epstein-Barr-virus-related mucocutaneous ulceration that mimics oral squamous cell carcinoma: the importance of recognising this new condition. British Journal of Oral and Maxillofacial Surgery. 2017; 55(4): 418-9.
19. Chainani-Wu N, Chang C, Sim C, Wu TC, Cox D, Sirjani D, et al. Oral Squamous Cell Carcinoma Mimicking Peri-Implantitis. Clinical Advances in Periodontics. 2016; 6(2): 83-8.
20. Yoon TY, Bhattacharyya I, Katz J, Towle HJ and Islam MN. Squamous cell carcinoma of the gingiva presenting as localized periodontal disease. Quintessence Int. 2007; 38(2): 97-102.
21. Ban L, Labbouz S, Grindlay D, Batchelor JM, Ratib S. Risk of skin cancer in people with vitiligo: a systematic review and meta-analysis. Br J Dermatol. 2018; 179(4): 971-2.
22. Laddha NC, Dwivedi M, Gani AR, Mansuri MS, Begum R. Tumor necrosis factor B (TNFB) genetic variants and its increased expression are associated with vitiligo susceptibility. PLoS One. 2013; 8(11): e81736.
23. Adoue D. Autoimmune diseases and cancer in elderly. Rev. Med. Interne. 2008; 29: S286-8.
24. Franks AL and Slansky JE. Multiple associations between a broad spectrum of autoimmune diseases, chronic inflammatory diseases and cancer. Anticancer. Res. 2012; 32: 1119-36.
25. Li CY, Dai YX, Chen YJ, et al. Cancer Risks in Vitiligo Patients: A Nationwide Population-Based Study in Taiwan. Int J Environ Res Public Health. 2018;15(9): 1847.
26. Albert DM. Melanoma vitiligo, and uveitis. Ophthalmology. 2010; 117: 643-4.
27. Cunha D, Pacheco FA, Cardoso J. Vitiligo: A good prognostic factor in melanoma? Dermatol. Online J. 2009; 15: 19336032.
28. Seo SL, Kim IH. Squamous cell carcinoma in a patient with generalized vitiligo. J. Am. Acad. Dermatol. 2001; 45: S227-9.
29. Arnon O, Mamelak AJ, Goldberg LH. Basal cell carcinoma arising in a patient with vitiligo. J. Drugs Dermatol. 2008; 7: 1075-6.
30. Barutca S, Kadikoylu G, Meydan N, Bolaman Z, Gokcen A, Bal F. Two autoimmune diseases: Hashimoto's thyroiditis and vitiligo accompanying breast cancer; A coincidence? J. BUON. 2003; 8: 177-9.
31. Weitzen R, Pfeffer R, Mandel M. Benign lesions in cancer patients: Case 3. Vitiligo after radiotherapy for breast cancer in a woman with depigmentation disorder. J. Clin. Oncol. 2005; 23: 644.
32. Banerjee AK, Hudd C, Mee AD. Squamous cell carcinoma of the bladder presenting as vitiligo. Br. J. Urol. 1989; 63: 323.
33. Rahner N, Hoefler G, Hogenauer C, Lackner C, Steinke V, Sengteller M, et al. Compound heterozygosity for two MSH6 mutations in a patient with early onset colorectal cancer, vitiligo and systemic lupus erythematosus. Am. J. Med. Genet. A. 2008; 146: 1314-9.
34. Newman MD, Milgraum S. Leukemia cutis masquerading as vitiligo. Cutis. 2008; 81: 163-5.
35. Pajonk F, Weissenberger C, Witucki G, Henke M. Vitiligo at the sites of irradiation in a patient with Hodgkin's disease. Strahlenther. Onkol. 2002; 178: 159-62.
36. Oh DY, Jung KE, Koo DW, Lee JS. Image Gallery: Squamous cell carcinoma on an untreated vitiligo lesion. Br J Dermatol. 2018; 179(1): e2.
37. Gangopadhyay A, Das JK, Agarwal AK. Squamous cell carcinoma in a patient with vitiligo of photo-covered skin. Indian J Dermatol. 2014; 59: 193-4.
38. Ban L, Labbouz S, Grindlay D, Batchelor JM, Ratib S. Risk of skin cancer in people with vitiligo: a systematic review and meta-analysis. Br J Dermatol. 2018; 179(4): 971-2.
39. Wu W, Amos CI, Lee JE, Wei Q, Sarin KY, Han J. Inverse Relationship between Vitiligo-Related Genes and Skin Cancer Risk. J Invest Dermatol. 2018; 138(9): 2072-5.
40. Olmez D, Akkaya N, Dural S. Squamous cell carcinoma confused with denture-related traumatic ulcer: A Case Report. 2018.
41. Daroit NB, Salgueiro AP, Maito FLDM, Visioli F, Rados PV. The use of cytopathology to identify disturbances in oral squamous cell carcinoma at early stage: A case report. Diagnostic Cytopathology. 2018.
42. Rhodus NL, Kerr AR, Patel K. Oral cancer: leukoplakia and squamous cell carcinoma. Dent Clin North Am. 2005; 49(1): 143-65.
43. Sujir N, Ahmed J, Pai K, Denny C, Shenoy N. Challenges in Early Diagnosis of Oral Cancer: Cases Series. Acta Stomatol Croat. 2019; 53(2): 174-80.