

Early onset oral squamous cell carcinoma: Report of a case and Review of the literature

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Abstract

Recently increased frequency of early onset squamous cell carcinoma (EOSCC) in young patients has been detected. Classic risk factors such as smoking and alcohol consumption are not related to EOSCC. We report a case of EOSCC with no identifiable definite risk factor.

A 32-year-old man with complaint of severe radiating pain and an ulcerated mass, 1.5 X 2cm in size, was referred to oral medicine department of Mashhad dental faculty. The surface of the lesion was granular and indurated margins were evident. The patient was from a high socioeconomic group with no history of smoking or alcohol consumption, drug abuse or unusual sexual habit. The only probable risk factor was low content of fresh fruits and vegetables in dietary program. The diagnosis of squamous cell carcinoma was designated and confirmed by histopathologic examination. None of tested viruses (Human Papilloma Virus (HPV) 16, 18, Epstein Bar Virus (EBV), Cytomegalovirus (CMV), Human Herpes Virus (HSV)) were found by PCR. It seems that EOSCC has different clinical and demographic characteristics that necessitate further studies in different populations.

Key words: oral cancer, squamous cell carcinoma, young patient, case report

Introduction

Oral squamous cell carcinoma (OSCC) is the 8th most common malignancy which represents more than 90% of all head and neck cancers throughout the world (1, 2).

Usual risk factors are smoking and alcohol consumption and other possible etiological agents are viral infections, sexual practice, diet, anemia, drug abuse, immunosuppression and radiation (3-7).

Recently, increased frequency of early onset OSCC (EOSCC) in young patients with altered demographic features and risk factors such as reduced exposure to traditional risk factors, involvement of tongue and posterior oral region and association with different viruses (Human Papilloma Virus (HPV) 16, 18, Epstein Bar Virus (EBV), Cytomegalovirus (CMV), Human Herpes Virus (HSV)) has been described (2,8-10). There are several studies about increased incidence and different demographic, etiologic, clinical and histopathological features of EOSCC (3,6,7,9,11-14).

Here, we report one case of EOSCC of tongue in a young male with no identifiable definite risk factor.

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Fig 1



Case report

A 32-year-old man with complaint of severe radiating pain associated with a tongue ulcer (with three months duration) was referred to Oral Medicine Department of Mashhad Dental Faculty in Apr 2009.

In extraoral examination no abnormal findings such as asymmetry or lymphadenopathy was observed. In intraoral examination an ulcerated mass with 2×1.5 cm size, was observed on the right lateral border of tongue in anterior two thirds (Fig 1). The lesion was firm on palpation with a granular surface. Indurated margins especially in anterior aspect were notified. No local source of trauma was evident in the area. The patient reported a suddenly onset pain, before seeking medical care, leading to awareness of a small ulcer. The patient had considered the ulcer as aphtea and had not sought care. Medical history was not contributory and the patient was healthy and denied any tobacco, alcohol or drug abuse. In social history no high risk behavior (such as oral sex habits, homo or heterosexuality) was determined and he was

from a high socioeconomic group. Anemia was ruled out by hematological assessment and dietary analysis showed low consumption of fresh vegetables and fruit (less than 1 portion daily during 5 years ago). Provisional diagnosis of EOSCC was assumed and biopsy was performed. In histopathologic examination islands and strands of squamous epithelium was invading the lamina propria, malignant call showed changes such as cellular and nuclear pleomorphism, hyperchromatism, anormal mitosis, and keratin pearl formation.. A well differentiated squamous cell carcinoma was diagnosed (Fig 2). Due to possible viral etiology Polymerase Chain Reaction (PCR) was performed for detection of HPV 16, 18, HSV, EBV and CMV and the results were all negative.

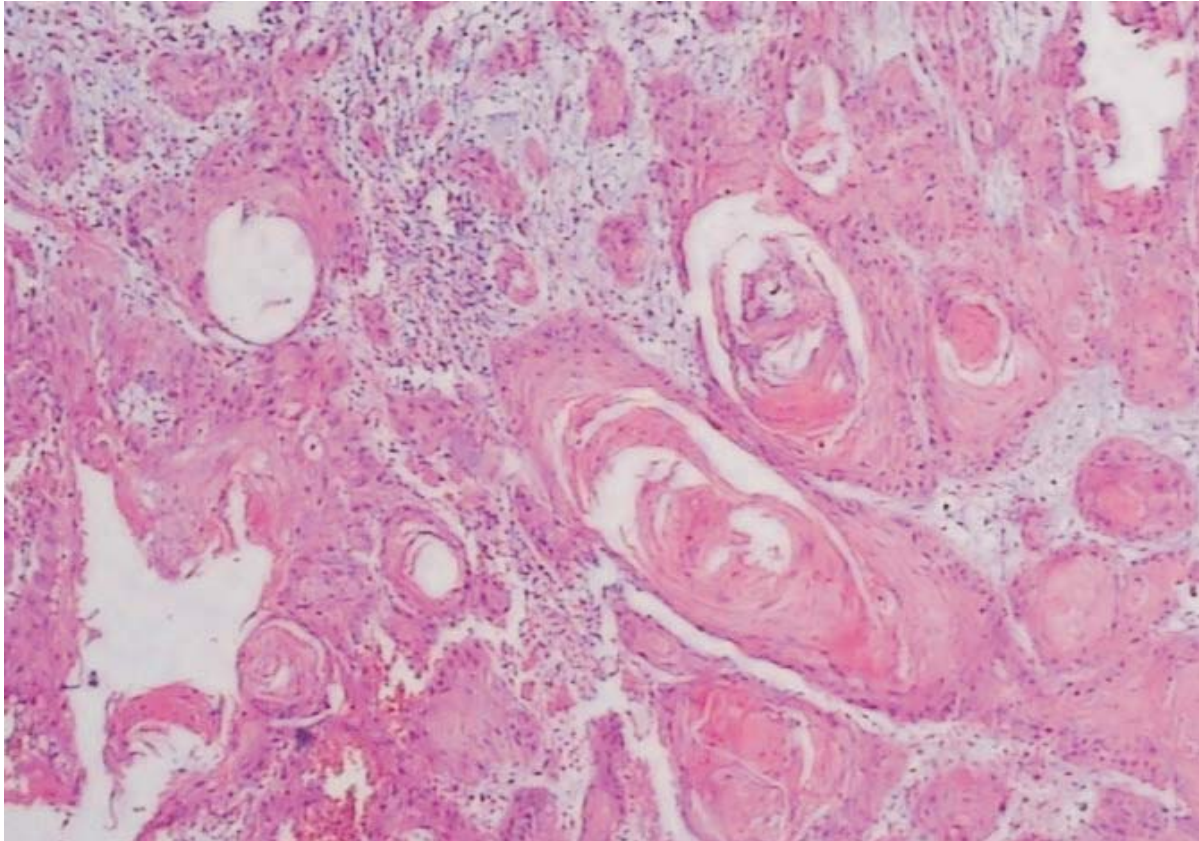
Patient was referred to oncologist. The treatment consisted of hemiglossectomy and unilateral radical neck dissection. After surgery, treatment was followed by radiation therapy given six weeks post operatively. Six months follow up did not show any recurrence or metastasis.

Discussion

OSCC classically affects patients older than 45 years old (12) but recently an increased incidence of OSCC in young patients (EOSCC) has been noted (3, 6, 11, 12). It seems that traditional risk factors (such as alcohol and tobacco) are of little significance in this age group of patients (1, 2, 6, 8). In our patient major risk factors were absent and less documented risk factors were investigated. The patient was approached

by hematologist for anemia and no evidence was revealed. Dietary analysis showed less than one daily portion vegetables and fresh fruit consumption by the patient. Nutritional deficiencies may predispose one to early carcinogenesis. Some studies confirmed that a diet rich in fresh fruits and vegetables gives protection against cancer (3,15). In addition iron deficient animals were more prone to tongue tumors (4, 6, and 9). In our patient, site of lesion was anterior two third of

Fig 2



tongue which is reported as the most common site of EOSCC followed by the floor of the mouth (4, 6, 13, 16, 17). In histopathological examination, the neoplasm was well differentiated (grade 1) similar to many studies that showed such a finding in EOSCC (20,21).

Fortunately in most studies, prognosis of EOSCC is better than OSCC of older adults (9,11), while some of the studies suggest more aggressive behavior for it (4,22). In our case, a good prognosis was anticipated due to well differentiated histopathologic profile.

No evidence of metastasis or recurrence was detected after six months follow up, although longer evaluation is desirable. The reason for the development of SCC of head and neck in young patients without typical risk factors remain unclear, but because of the worldwide reports of increasing numbers of young people developing this disease, it is of paramount importance that we continue effort for identifying a causative agent for development of EOSCC of the head and neck in younger populations.

There is one study in Brazilians which has revealed similar demographic patterns and risk factors profile in EOSCC and SCC on older adult. In this survey EOSCC was more common in male, smoker/drinker young patients, with floor of the mouth as the most common site of involvement. Half of lesions were moderately differentiated (12). These debates may be due to ethnic or life style differences.

In our patient pain was the first annoying symptom leading to self examination of the tongue by patient. Interestingly severe pain is a common symptom in EOSCC (6) where as SCC in older patients has an insidious symptomless behavior.

Conclusion

Many dentists simply do not consider OSCC in differential diagnosis of oral lesions in young patients because of this traditional belief that OSCC is a disease of old patients. This case along with similar reports highlights the importance of proper clinical examination and diagnosis, apart from traditional beliefs.

References

- 1 Siebers TJH, Marka MAW, Sloopweg PJ, Melchers WJG, Van cleef V, De Wilde PCM. No high-risk HPV detected in SCC of the oral tongue in the absolute absence of tobacco and alcohol-a case study of seven patients. *Oral Maxillofac Surg* 2008; 12:185-188.
- 2 Randhawa T, Shameena PM, Sudha S, Nair RG. Squamous cell carcinoma of tongue in 19-year-old female. *Indian J cancer* 2008; 45:128-130.
- 3 Llewellyn CD, Linkalter K, Bell J, Johnson NW, Warnakula-suriya S. An analysis of risk factors for oral cancer in young people: a case control study. *Oral Oncol* 2004; 40:304-313.
- 4 Wo chow CH, Tabrizi SN, Tiedemann K, Waters KD. Squamous cell carcinomas in children and young adults: a new wave of a very rare tumore? *J Pediatr Surg* 2007; 42:2035-2039.
- 5 Farshadpour F, Hordjik GJ, Koole R, Sloopweg PJ. Head and neck squamous cell carcinoma in non-smoking and non-drinking patients with multiple tumors: etiologic significance of P53 and Ki-67 in non-tumorous epithelium. *J oral pathol Med* 2008; 37:549-554.
- 6 O'Regan EM, Timon C, Sheils O, Codd M, O'Leary OO, Toner M. Squamous cell carcinoma of the head and neck in young Irish adults. *British j oral maxillofac surg* 2006; 44:203-206.
- 7 Alsharif MJ, Jiang WA, He S, Zhao Y, Shan Z, Chen X, Gingival squamous cell carcinoma in young patients: report of a case and review of the literature. *Oral Med Oral path Oral Surg Oral Radiol Oral Endod* 2009; 107:696-700.
- 8 Dahlstrom KR, Little JA, Zafero ME, Lung M, Wei Q, Sturgis EM. Squamous cell carcinoma of the head and neck in never smoker-never drinkers: A descriptive epidemiologic study. *Head & neck* 2008; 75-84.
- 9 Lingen MW. The changing face of head and neck cancer. *Oral Med Oral path Oral Surg Oral Radiol Oral Endod* 2008; 106(3):315-316
- 10 Gonzalez-losa R, Human papilloma virus 58 in a squamous cell carcinoma of the tongue. *Oral oncology* 2009; 45:72.
- 11 Goldenberg D, Brooksby C, Hollenbeak CS. Age as a determinant of outcomes for patients with oral cancer. *Oral Oncology* 2009;45:57-61.
- 12 Prado Ribiero AC, Santos Silva AR, Simonato LE, Pescinini Salzades LM, Sundefeld MLM., Soulbhia AMP. Clinical and histopathological analysis of oral squamous cell carcinoma in young people. A descriptive study in Brazilians. *British j Oral Maxillofac Surg* 2009; 47:95-98.
- 13-Schawartz SR, Yueh B, Mcdougall JK, Daling JR, Schawartz SM. Human papilloma virus infection and survival in oral squamous cell cancer: A population- based study. *Arch Otolaryngol Head Neck Surg* 2001; 125:1-9.
- 14 Poddighe PJ, Bulten J, Kerstens HM, Robben JC, Melchers Wj, Hanselaar AG. Human papilloma virus detection by insitu hybridization signal amplification based on biotinylated tyramine deposition. *Clin Mol Pathol* 1996; 99:340-344.
- 15 Amtha R,Zain R,Razal IA,Basuki B,Roeslan BO,Gautama W, Purwanto DJ. Dietary patterns and risk of oral cancer: A factor analysis study of a population in Jakarta, Indonesia. *Oral Oncol* 2009; 45:49-53.
- 16 Siriwardena BS, Tilakaratne A, Amaratunga EA, Tilakaratne WM. Demographic,

- aetiological and survival differences of oral squamous cell carcinoma in the young and the old in Srilanka. *Oral Oncol* 2006;42:831-6.
- 17 Scully C, Felix DH, Oral medicine-update for the dental practitioner orofacial pain. *Br Dent J* 2006; 200:74-83.
 - 18 Onizawa K, Nishihara K, Yamagata K, Yusa H, Yanagawa T, Yoshida H. Factors associated with diagnostic delay of oral squamous cell carcinoma. *Oral Oncol* 2003; 39:781-8.
 - 19 Andishe-tadbir A, Mehrabi D, Heydari ST. Epidemiology of squamous cell carcinoma of the oral cavity in Iran. *Craniofacial Surg* 2008;19(6):1699-1702.
 - 20 Sasaki T, Moles DR, Imai Y, Speight PM. Clinico pathological features of squamous cell carcinoma of the oral cavity in patients <40 years of age. *J Oral Pathol Med* 2005; 34:129-133.
 - 21 Iamaroon A, Pattanaporn K, Pongsiriwet S, et al. Analysis of 587 cases of oral squamous cell carcinoma in northern Thailand with a focus on young people. *Int J Oral Maxillofac Surg* 2004; 33:84-8.
 - 22 Mehenna P, Patel J, Bailey BMW. Mandibular SCC in a 10 year old child-A clinical variety. *British J Oral Maxillofac Surgery* 2009;47:148-150.