INTRODUCTION

Among all the head and neck cancers, squamous cell carcinoma (SCC) is the most common carcinoma (>90%). It commonly affects the elderly males during the fifth to eighth decades.[1] Oral SCC (OSCC) is the sixth most common malignant disease worldwide.[2] It rarely occurs in patients under 40 years (1–6%).[3] In older patients, the main risk factors include tobacco and alcohol abuse, which are strongly synergistic. The role of these factors in the young patient is dubious. The reason is that about 90% of adults start smoking in their adolescence[4] and many of these young patients have never smoked or drank alcoholic beverages. If they did, the duration of exposure to these agents would have been too short to induce malignant transformation.[3] The importance of this report lies in the rarity of SCC in a young patient (17-year-old). This report also underlines the etiological factors and differential diagnosis associated to such disease in this age range.

CASE REPORT

A 17-year-old female reported to the Department of Dentistry in Guru Gobind Singh Medical College and Hospital, Faridkot with a chief complaint of growth in the lower jaw [Figure 1]. Medical history of the patient revealed no relevant association with the lesion. The patient denied a history of smoking, ethanol consumption or any other harmful habits. The patient had noticed swelling and dull pain in the mandible 1 year ago and taken medicine from a private practitioner but with no relief. Hence, she was referred to a medical college. On clinical examination, an ulcerative lesion was noticed in the mandible extending from 35–46 crossing the midline. Lower anterior teeth showed Grade III mobility while premolars showed Grade II mobility. Bilateral enlarged submandibular lymph nodes (N2) were noted. The patient was advised orthopantomography and computed tomography (CT) scan [Figures 2 and 3]. CT scan revealed a lytic lesion involving alveolar ridge with erosion of labial and lingual cortices in the anterior region of mandible involving floor of mouth also. The incisional biopsy of the lesion showed dysplastic epithelium with epithelial cells showing distinct nuclear pleomorphism, presence of mitotic activity, including atypical mitotic figures and premature keratinization [Figure 4a]. The dysplastic epithelial islands were seen invading the connective tissue [Figure 4b]. On higher magnification the cells of tumor islands showed cellular and nuclear pleomorphism and nuclear hyperchromatism. The histopathological findings were suggestive of moderately differentiated (G2) SCC [Figure 4 c and d]. As the lesion was diagnosed to be at Stage IV, the patient was advised surgery and radiotherapy.

ABSTRACT

Oral squamous cell carcinoma is the most common “malignant neoplasm” of epithelial origin usually affecting individuals over 50 years of age. It is rare in patients aged <40 years old. This report describes a case of squamous cell carcinoma involving anterior mandibular alveolar region in a 17-year-old female patient, with no history of deleterious habits. This report focuses on etiological factors, diagnosis and prognosis related to the case.

Key words: Alcohol, carcinoma, tobacco
Unusual presentation of squamous cell carcinoma in young female patient

Kaur, et al.

DISCUSSION

SCC is not a frequent event in young patients. Only 1–6% of SCC cases occur in patients under the age of 40, the occurrence in children and adolescents being extremely rare. Characterization of young patients bearing head and neck SCC is arbitrary. Most authors consider young patients with SCC at par with those under the 40 years of age. Even though some other authors use reference ages under 20–30 years, Age average for younger patients registered in literature ranges from 30.8 to 34.2, with male predominance. However, in our case, the age of the patient was 17 years.

The most common site of occurrence of oral cancer in the group of patients under 40 years is tongue, similar to older patients. Clinical manifestation of SCC in young patients is not different from the older. Literature reports that many clinicians tend not to include SCC among differential diagnosis in young patients. In this case, as the site was lower anterior alveolar region, differential diagnoses of central giant cell granuloma, an early benign cemento-osseous lesion, a simple bone cyst, odontogenic cyst, odontogenic myxoma and focal osteoporotic bone marrow defect were included.

In young patients, a number of etiological factors have been associated with the development of disease. The risk factors (smoking and drinking) that are usually observed in elderly patients have not been verified in young patients. Despite some studies demonstrating that same etiological factors are present in both age ranges, the possibility of existence of a carcinogenic action of tobacco and alcohol in the young patient is low, owing to the fact that in this group, exposure time would be relatively short for establishment of cause-effect relationship. The other etiological factors for SCC in young patients include genetic predisposition, previous viral infection, feeding habits, immunodeficiency status, occupational exposure to the carcinogenic agent, socioeconomic condition and poor oral hygiene. In this case report, etiological factor seems to be low socioeconomic status and poor oral hygiene.

In the present case report, the patient was very young 17-year-old and did not report smoking and drinking habits. Past medical and family history are not significant. The most eluding factor of SCC in the patient seems to be the socioeconomic condition, poor oral hygiene and perhaps the existence of a premalignant lesion at the site followed by development of the neoplasm. Other suggested hypothesis include cytomegalovirus, Epstein–Barr virus and human papillomavirus infections. Standard recommended treatment for SCC (surgery, neck dissection, radiation and chemotherapy) depending upon stage and site should be followed. Literature reveals a certain debate regarding SCC prognosis in young patients. Some authors consider the lesion to be particularly aggressive in the young, thus having a worse prognosis when compared to that of older patients. Some studies have shown that young patients tend to present a greater locoregional recurrence rate and smaller survival rate, whereas others have a similar prognosis for both age ranges.

CONCLUSION

OSCC can occur even at a young age and must be considered in the differential diagnosis of the suspicious lesion even
in young patients. Since the lesion is not suspected to be malignant by the patient or the family physician, the patients usually report to the specialist very late. Hence, it is the need of the hour that awareness programs and early screening of these lesions be carried out so that timely treatment can be delivered with minimal effect on quality of life.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

REFERENCES

1. Randhawa T, Shameena P, Sudha S, Nair R. Squamous cell carcinoma of tongue in a 19-year-old female. Indian J Cancer 2008;45:128-30.
2. Chiang WF, Yen CY, Liu SY. Squamous cell carcinoma of the oral cavity in young patients. Chin J Oral Maxillofac Surg 2005;16:8-16.
3. Hirota SK, Migliari DA, Sugaya NN. Oral squamous cell carcinoma in a young patient – Case report and literature review. An Bras Dermatol 2006;81:251-4.
4. Kaminagakura E, Vartanian JG, da Silva SD, dos Santos CR, Kowalski LP. Case-control study on prognostic factors in oral squamous cell carcinoma in young patients. Head Neck 2010;32:1460-6.
5. Llewellyn CD, Johnson NW, Warnakulasuriya KA. Risk factors for squamous cell carcinoma of the oral cavity in young people – A comprehensive literature review. Oral Oncol 2001;37:401-18.
6. Burzynski NJ, Flynn MB, Faller NM, Ragsdale TL. Squamous cell carcinoma of the upper aerodigestive tract in patients 40 years of age and younger. Oral Surg Oral Med Oral Pathol 1992;74:404-8.
7. Torossian JM, Beziat JL, Philip T, Bejui FT. Squamous cell carcinoma of the tongue in a 13-year-old boy. J Oral Maxillofac Surg 2000;58:1407-10.
8. Friedlander PL, Schantz SP, Shaha AR, Yu G, Shah JP. Squamous cell carcinoma of the tongue in young patients: A matched-pair analysis. Head Neck 1998;20:363-8.
9. Sarkaria JN, Harari PM. Oral tongue cancer in young adults less than 40 years of age: Rationale for aggressive therapy. Head Neck 1994;16:107-11.
10. Oliver RJ, Dearing J, Hindle I. Oral cancer in young adults: Report of three cases and review of the literature. Br Dent J 2000;188:362-5.
11. Sankaranarayanan R, Mohideen MN, Nair MK, Padmanabhan TK. Aetiology of oral cancer in patients less than or equal to 30 years of age. Br J Cancer 1989;59:439-40.
12. Schantz SP, Byers RM, Goeppert H, Shallenberger RC, Beddingfield N. The implication of tobacco use in the young adult with head and neck cancer. Cancer 1988;62:1374-80.
13. Darling MR, Daley TD. Radiolucent lesion of the anterior mandible. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2005;99:529-31.
14. Gonzalez-Moles MA, Gutierrez J, Rodriguez MJ, Ruiz-Avila I, Rodriguez-Archiha A. Epstein-Barr virus latent membrane protein-1 (LMP-1) expression in oral squamous cell carcinoma. Laryngoscope 2002;112:482-7.
15. de Sanjose S, Muñoz N, Bosch FX, Reimann K, Pedersen NS, Orfila J, et al. Sexually transmitted agents and cervical neoplasia in Colombia and Spain. Int J Cancer 1994;56:358-63.