

De-novo squamous cell carcinoma of an edentulous ridge

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ABSTRACT

Squamous cell carcinoma is the most common malignancy affecting the oral cavity which is usually associated with habit of smoking and smokeless tobacco. It occurs more frequently in males, usually in the 5th–6th decade of life. The current case is presented in an elderly female with no habit history and the diagnosis was based on the clinical and histopathological examination. Hence, we emphasize that patients with ulcers without any habit history should not be overlooked, and biopsy is deemed necessary for such cases.

Key words: Carcinoma, edentulous ridge, malignant

INTRODUCTION

Oral ulcerative lesions are common findings; although often of similar clinical appearance, their etiologies can range from immunological, traumatic and neoplastic to the oral manifestations of systemic and dermatologic disease. Clinically, almost all the oral cancers, barring their early forms have characteristic presentation in the form of a persistent ulcer with indurated margin. This clinical appearance is characteristic, as also for squamous cell carcinoma.

Squamous cell carcinoma is defined as “a malignant epithelial neoplasm exhibiting squamous differentiation as characterized by the formation of keratin pearls and/ or presence of intercellular bridges” (Pindborg *et al.* 1977). It is the most common neoplasm of the oral cavity. The main cause of oral cancer has been attributed to the use of tobacco in its various forms, especially when associated with the use of alcohol.^[1]

CASE REPORT

A 60-year-old female reported with the chief complaint of a painful non-healing ulcer in the lower anterior region of the jaw since the last one year. There had been a gradual increase in the size of the ulcer over the past 1 year. Patient’s past medical history revealed that the patient was taking medication for arthritis since the last one year and had undergone an eye surgery one month back. The patient had no habits and was on a soft diet since last one year.

General physical examination revealed that the patient was moderately built and nourished. All the vital signs were within normal limits. Extraoral examination revealed a symmetrical face with a concave profile and no extraoral swelling. None of the lymph nodes were palpable. Intraoral examination revealed edentulous maxillary and mandibular ridges. There was 3 × 3 cm, oval-shaped, single ulcer present on the mandibular ridge in the canine–premolar region. The ulcer had irregular margins and undermined edges. The base and border were firm on palpation. The floor of the ulcer was erythematous, with presence of bleeding points [Figure 2]. It was tender on palpation and bleeding was present on slightest provocation.

Based on the clinical findings, a provisional diagnosis of squamous cell carcinoma was made. A differential diagnosis of inflammatory hyperplasia, necrotizing sialometaplasia,

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tuberculous ulcer and histoplasmosis was also given.

Intraoral periapical radiograph of the 33 and 34 regions, hematological investigations and incisional biopsy were the investigations advised. The intraoral radiograph revealed a bony erosion in the canine–premolar region. The patient tested positive for the Mantoux test.

Histopathology

The sections studied showed predominantly ulcerated, atrophic epithelium invading into the underlying connective tissue [Figure 1]. The dysplastic epithelial cells were arranged in islands of varying size. Numerous keratin pearls [Figures 2 and 3] and increased number of mitotic figures with cellular and nuclear pleomorphism and hyperchromatism were also seen. Minimal chronic inflammatory cells were seen in the intervening stroma between the tumor islands. Areas of necrosis were also present.

DISCUSSION

Significant variation has been noted in the incidence of oral cancer, with high rates reported in the Indian subcontinent and parts of Asia. In India, cancer of the oral cavity is one of the five leading sites of cancer in either gender. More than 90% of the oral cancers occur in patients over the age of 45, with a male predilection. The incidence increase steadily with age until 65, when the rates level off.^[1]

The epidemiology of squamous cell carcinoma of head and neck (SCCHN) is complex due to the multigenic nature of the disease and the number of potential environmental agents to which individuals may have been exposed. The major etiological agents that have been implicated are the use of tobacco and alcohol abuse. Other risk factors include nutrition, occupation, viral infection and poor dentition. These risk factors do not, however, adequately explain $5 \pm 10\%$ of SCCHN cases.^[2-5] They can develop from precancerous lesions, such as leukoplakia and erythroplakia, or apparently normal epithelium.^[1,3]

The most common clinical presentation is either an ulcer or an ulceroproliferative growth. Classically, a carcinomatous ulcer has an irregular papillary surface, elevated borders and a hard base on palpation. The lesions are almost always chronic and have indurated margins. The lateral border, the ventral surface of the tongue and the lips are the most commonly affected sites, followed by the floor of the mouth, the gingival, the alveolar mucosa and the palate.^[1,6]

Histopathologically, SCC is divided into three grades depending on the degree to which the tumor resembles the parent tissue and produces keratin. They are categorized

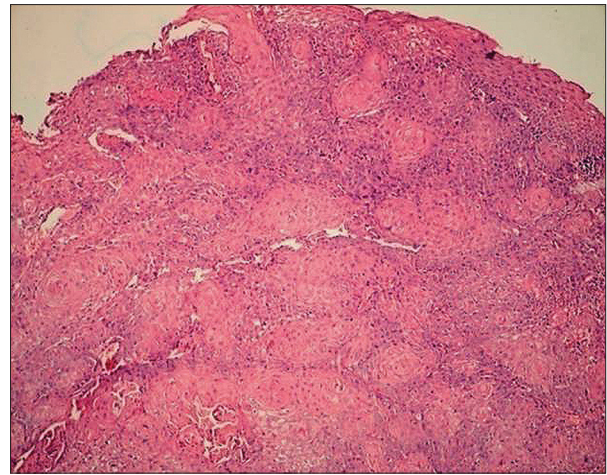


Figure 1: Photomicrograph showing ulcerated, atrophic epithelium invading into the underlying connective tissue (H and E, Scanner view)

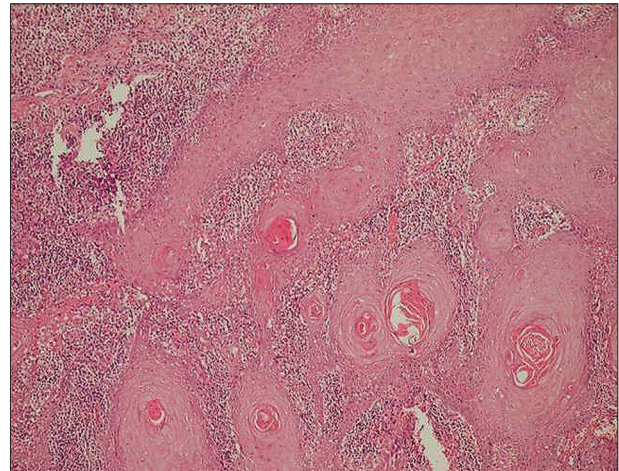


Figure 2: Photomicrograph showing tumor islands with keratin pearl formation (H and E, ×10)

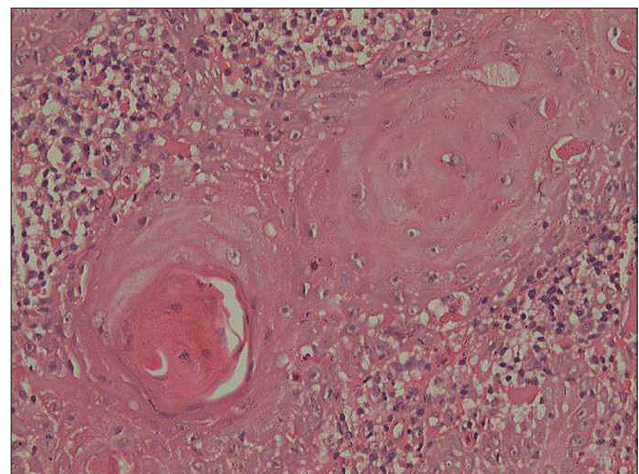


Figure 3: Photomicrograph showing keratin pearls and individual cell keratinization with surrounding fibrous stroma. (H and E, ×40)

as well-differentiated, moderately differentiated and the poorly differentiated. A well-differentiated tumor is mature enough to closely resemble its tissue of origin, grows at a

slightly slower pace and metastasizes later in its course. On the contrary, one which shows much cellular and nuclear pleomorphism, i.e. which is immature and bears no resemblance to the tissue of origin is designated as poorly differentiated. The tumor that lies between these two extremes is labeled as moderately differentiated.^[6,7]

“The Field Cancerization theory” was proposed by Slaughter in 1953, and hypothesized that the entire epithelium of the upper aerodigestive tract has an increased risk for development of premalignant lesions as seen prior to SCC. This is due to multiple genetic abnormalities in the whole tissue region. It has been questioned whether multiple lesions develop independently from each other or from migrated malignant or progenitor cells. There is more evidence that field cancerization is due to multiple independent events than just migration of genetically altered cells.^[8]

Treatment of the intraoral SCC is guided by the clinical stage of the disease and consists of radical excision, radiation therapy or a combination. Usually larger lesions require combined therapy.

CONCLUSION

Squamous cell carcinoma is the most common malignancy affecting the oral cavity. It occurs more frequently in males, usually in the 5th–6th decade of life. The current case

presented in an elderly female and the diagnosis was based on the clinical and histopathological examination.

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