Annals of Otolaryngology Head and Neck Surgery
Case Report (ISSN 2835-7132)

Progression of Chronic Osteomyelitis of Jaw to Squamous Cell Carcinoma-A Rare Case Report

Deepa Kamath G, Aparajita Balsavar, Amith KP*, Gautam T, Siva Bharani KSN

College of Dental Sciences, Davangere, India

Citation: *Aparajita Balsavar, Amith KP, Deepa Kamath G, Gautam T, Siva Bharani KSN. Progression of Chronic Osteomyelitis of Jaw to Squamous Cell Carcinoma-A Rare Case Report. Annal of Otol Head and Neck Surg. 2023;2(2):1-3.*

Received Date: 20 April, 2023; **Accepted Date:** 22 April, 2023; **Published Date:** 22 April, 2023

***Corresponding author:** Amith KP, College of Dental Sciences, Davangere, India

ABSTRACT

Squamous cell carcinoma of the oral cavity is considered the 12th most common cancer in the world and accounts for up to one-third of all tobacco-related cancers in India.[1] Cancer of the gingivobuccal complex is especially common in Indians because of the frequency of smokeless tobacco use. Though the cancer is quite prevalent, it can be difficult to diagnose, it has a poor prognosis and is difficult to treat.

Oesteomyelitis is an inflammation of the cortex and marrow of the bone after a chronic infection.[2,3] However, its incidence in the head and neck region is rare, and the involvement of the jaws is rarer still.

Here we discuss a case of a patient with a lesion suspected to be chronic osteomyelitis of the mandible, which upon resection and histopathological examination was identified as a Squamous Cell Carcinoma of the Gingivobuccal Sulcus.

Keywords: Squamous Cell Carcinoma (SCC); Chronic Osteomyelitis; Cancer; Gingivobuccal Sulcus; Histopathology

INTRODUCTION

Oesteomyelitis is an inflammation of the oesteoarticular apparatus and medullary canal caused by bacterial infection and colonization. It leads to progressive destruction of the tissue. In fact, osteomyelitis of the jaws is now defined by the presence of exposed bone in the mouth as a consequence of destruction, which fails to heal even after appropriate intervention.[4] This is because the bacterial colonies are protected by a biological barrier, often a polysaccharide, which is hard to breach and resists the action of antibiotics. Steroids, bisphosphonates, chemotherapeutic agents are among the drugs associated with osteomyelitis along with any condition that can disrupt the blood supply and lead to necrosis.[4]

The lower gingivobuccal complex is comprised of buccal mucosa, gingivobuccal sulcus, lower gingiva and retromolar trigone. Cancers of this region are predisposed by the habit of keeping betel or tobacco quid against the mucosa, leading to chronic irritation over long periods of time. Repeated and long-term trauma due to teeth and dentures, as well as poor oral hygiene have also been implicated.[5] Some SCCs arise in apparently normal

mucosa, while clinically obvious premalignant lesions, especially erythroplakia and leukoplakia, precede others. The carcinoma is prone to invading local tissue, including the underlying soft tissue, muscles, bone and neurovascular structures.[1]

The treatment depends on the site and extent of the primary tumour, the extent of spread. Consideration is also warranted regarding the lymph node status, and whether the primary involves the buccal mucosa alone or also the alveolus and gingivobuccal sulcus. The treatment of choice is usually surgical excision. Radiation therapy may be added in combination, with or without chemotherapy.

CASE REPORT

A 76-year-old moderately built and well-nourished male patient presented with a discharge of pus from a sinus over the left side of the face since 5-6 years as well as hoarseness of voice since 15 days. He was a known case of diabetes mellitus and hypertension and was on medication for the same. He had a long-standing habit of smoking beedis and chewing tobacco.

He had undergone a left marginal mandibulectomy 5 years ago for similar complaints. Local extra-oral examination revealed mild to moderate facial asymmetry and flattening on the left side. Multiple scars, sinuses and tender skin infoldings were noted with white, frothy, purulent discharge. Draining sinuses ranging around 1.5-2mm sizes were noted over the post-auricular area behind the ear.

Intraorally, a sinus opening was identified in the alveolar area with slight pigmentation over the hard palate. The area corresponding to the left posterior alveolar ridge was tender on palpation, and the alveolar bony margin and ridges were not palpable.

Oesteomyelitis of the lower jaw was suspected and a series of investigations were recommended, including culture and sensitivity of the discharge, Contrast-Enhanced Computered Tomography (CE-CT) scan of the face and neck, and a digital OPG. The digital OPG revealed the left side of the body of the mandible, ramus, coranoid and condyloid processes to be absent corresponding to a marginal mandibulectomy. The remnants of the mandible showed a moth-eaten appearance.

CE-CT face and neck showed air pockets and bony fragments over the left angle of mandibular region. Thus, chronic osteomyelitis was presumed the final diagnosis and the remnant of the mandible was excised after debridement, extraction of teeth and under antibiotic cover.

However, final Histopathological examination showed the excised lesion to be a poorly differentiated Squamous cell carcinoma of the Gingivobuccal sulcus. The patient was subsequently followed up in the Oncology department for further radiation treatment.

DISCUSSION

Squamous cell carcinoma is a common malignant tumor but is rarely associated with chronic osteomyelitis. An analysis done by Li et al.[6] in 2015, identified eight cases of SCC after chronic osteomyelitis that were treated between 1974 and 2010. However, these cases involved long bones of the lower limbs. This can also likely be attributed in part to the fact that chronic osteomyelitis often involves the long bones, while the mandible, such as

in this case report, are relatively rare. Carcinomatous degeneration cannot be ruled out, even years after chronic osteomyelitis, especially in the presence of suggestive signs such as foul smelling fistulae and ulceration.

Oral SCC can be extremely aggressive and fast growing, involving the lower jaw and leading to destruction of the tissue, similar to severe bone infections. Thus, there is a possibility that an infection secondary to a destructive oral SCC was clinically identified as chronic osteomyelitis.

Another probable explanation may be the concurrent and independent development of both the infection and the oral SCC. In such a case, aggressive and immediate surgical management is paramount. Effective antibiotics must be initiated based on the culture and sensitivity reports, especially in a case like the one in question with a history of diabetes. Then, complete excision of the affected tissue with a safe margin must be performed, and the specimen sent to biopsy (the gold standard investigation, in this case) immediately.

If identified as SCC, neck dissection and further Radiotherapy and Chemotherapy can be planned as required.

Accurate reporting from the histopathology sample, along with a Contrast Enchanced Computered Tomography (CE-CT) scan and MRI can detect the bone marrow involvement, based on which a treatment protocol can be generated.

CONCLUSION

The conversion of chronic osteomyelitis to Squamous cell carcinoma is rare in existing literature, and even rarer in the bones of the head and jaw. While this unique case was identified after surgery, the question still remains if it was an infection of the mandible that progressed into a malignancy, or if it was an oral SCC that was identified after it had undergone secondary infection. Further studies and systematic analyses into this phenomenon can shed more light on its prevalence and pathophysiology, as well and help formulate a treatment protocol to ensure timely and effective management.

REFERENCES

1. Misra S, Chaturvedi A, Misra NC. Management of gingivobuccal complex cancer. Ann R Coll Surg Engl. 2008;90(7):546-53.
2. Yeoh SC, Macmahon S, Schifter M. Chronic suppurative osteomyelitis of the mandible: case report. Aust Dent J. 2005;50(3):200-3.
3. Fonseca RJ, Turvey TA, Betts NJ. Oral and Maxillofacial Surgery. 1st ed. Philadelphia: WB Saunders; 2000;485-90
4. Reid IR. Osteonecrosis of the jaw: who gets it, and why. Bone. 2009;44(1):4-10.
5. Singhvi HR, Malik A, Chaturvedi P. The role of chronic mucosal trauma in oral cancer: A Review of literature. Indian J Med Paediatr Oncol. 2017;38(1):44-50.
6. Li Q, Cui H, Dong J, He Y, Zhou D, Zhang P, Liu P. Squamous cell carcinoma resulting from chronic osteomyelitis: a retrospective study of 8 cases. Int J Clin Exp Pathol. 2015;8(9):10178-84.