Case Report

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An aggressively recurring gingival tumor: A case report

Abstract:
Spindle cell carcinoma (SpCC), also known as Lane tumor, is a poorly differentiated squamous cell carcinoma (SCC), characterized by spindle-shaped cells in histopathology, can manifest in the oral cavity. Major etiologies of SpCC are alcohol abuse, inadequate oral hygiene, prior exposure to radiation in the tumor area, and most significantly, tobacco use in various forms like cigarettes, cigars, pipes, and smokeless tobacco. In this case report we describe an aggressive spindle cell tumor and specifically emphasize on the diagnostic dilemma caused during the process.

Key-words: Gingival overgrowth, spindle cell carcinoma, neoplasm, enlargement

Introduction:

Gingival enlargement or overgrowth, a prevalent manifestation of gingival disease, entails a noticeable increase in gingival size. Gingival hyperplasia may manifest independently or as a component of a syndrome. Complications linked with excessive gingival growth encompass the retention of primary teeth, delayed emergence of permanent teeth, heightened spacing between teeth, tooth misalignment, challenges in plaque management, impaired chewing, speech difficulties, aesthetic concerns, and malocclusion.[1]

Effective management hinges on accurately pinpointing the underlying cause of this enlargement.Moreover, in instances where gingival enlargement serves as the initial indication of serious systemic illnesses, a precise diagnosis could be lifesaving or, at the very least, prompt early intervention, enhancing the patient's quality of life.

Enlargements can be categorized according to their underlying etiologic factor, which may include inflammation, drug-related factors, systemic conditions or diseases, neoplastic growth, or pseudo-enlargements.[1]

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Spindle cell neoplasm, characterized by spindle-shaped cells, originates within the oral cavity from epithelial, mesenchymal, or odontogenic elements.The distinctive spindle cell appearance of neoplastic cells in SpCC arises from epithelial-mesenchymal transition.[3] The common area of occurrence is lip, tongue and alveolar ridge. SpCC is associated with cigarette smoking, alcohol consumption and radiation exposure.[4]

In this article, we describe a case of SpCC involving the maxillary anterior with an unusual violent clinical illustration causing diagnostic dilemma.

Case Report:

A 21 year old male patient reported to the department of Periodontology, TeerthankerMahaveer Dental College &Reseach Centre having a chief complain of gingival

[1]GANGULY JAYATI, [2]MEHROTRA SHALABH
[3]WALIAPOOJA, [4]RADHUSIMRAN,
[1-4]Department of Periodontology, Teerthanker Mahaveer Dental College and Research Centre, Moradabad

Address for Correspondence: Dr. Jayati Ganguly
Department of Periodontology, Teerthanker Mahaveer Dental College and Research Centre, Moradabad
Email: jayatiganguly96@gmail.com

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overgrowth at upper front region since 1 month. Patient also complained of difficulty in speech and mastication. Patient gave a history of extraction, due to periapical lesion, a month ago. Within 15 days of extraction he noticed gingival overgrowth in the edentulous area which was excised by a private practician. The patient reported to us after the recurrence of gingival overgrowth (fig-1).

Fig 1- pre-operative picture depicting gingival overgrowth

On intra-oral examination, the gingival overgrowth was found to be firm and fibrotic in consistency, 9*8 square mm in size, pedunculated, pale pink in color. No associated symptoms were present.

On radiographic examination, bony involvement was found which approached the nasal floor (fig-2).

Fig 2- pre-operative CBCT

Excisional biopsy was planned. Local anesthetic agent was administered to the patient. Maintaining all aseptic condition, the growth was excised using diode LASER. The sample was sent for histopathologicalexamination. Periodontal pack was placed and patient was recalled after 15 days for re-evaluation.

Fig 3 – excision of the overgrowth

Biopsy report revealed a parakearatinized stratified squamous surface epithelium overlying fibrovascular connective tissue stroma and the connective tissue shows numerous endothelial blood vessels of varying sizes containing RBCs, proliferative fibroblasts, numerous capillaries of varying sizes arranged in lobular fashion. On the basis of the above histological features Non-lobular capillary hemangioma was diagnosed.

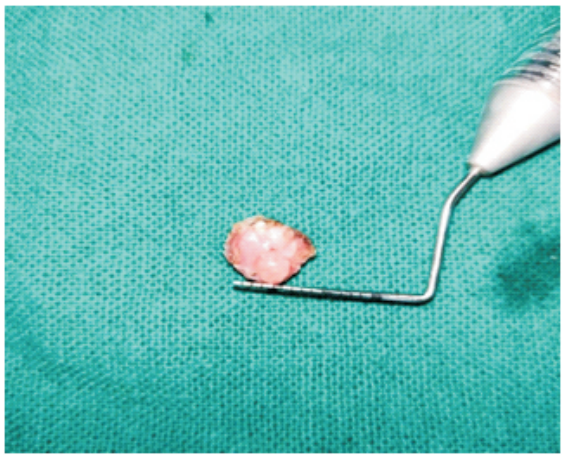

Fig 4 – excised tissue

On his recall visit an aggressive overgrowth was seen on the buccal and palatal surface (fig-5).

Fig 5 – recurrence of gingival overgrowth after 15 days

As a cauliflower shaped overgrowth was visualized on the palatal surface the patient was sent for contrast enhanced MRI. The CEMRI report revealed a T2W hyper-intense lesion measuring approx. 51*34*28 cubic mm causing necrosis of maxillary alveolus in midline and right paramidline location, mild superior displacement of right inferior turbinates and extension into incisive canal and maxillary. Oval shaped enlarged lymph nodes, approx. 10mm in short axis in right level II, were seen along bilateral jugular chain and submandibular, submental location. The above characterestics suggested a neoplastic etiology.

Patient was then referred to a Cancer Hospital for further investigation. The biopsy report revealed malignant SpCC with a zone showingfribro-connective tissue containing pleomorphic, oval to spindle, tumor cells enriched with unilayeredmucin and acute inflammatory cells between them. Large areas of necrosis were also present.

Discussion:

SpCC encompass a wide array of both cancerous and non cancerous lesions.

While spindle cell neoplasms are frequently found in other parts of the body, they are seldom seen, less than 1%, in the oral chamber.[2,5] Kettle and Krompecker proposed the idea that these could adopt the morphological traits of mesenchymal cells. After thorough examination, Saphir and Vass determined that the majority of these advanced processes display spindle-shaped features.[6]

Minckler et al and Martin et al determined fibre forming cells whereas, Leifer et al exhibited epithelial cells as the origin of these disease condition. Battifora observed epithelial cells transforming directly into mesenchymal cells. Furthermore, the discovery of junctional complexes between faster growing cells, sometimes with pericellular basal lamina and cytoplasmic intermediate filament skeins, has been validated.[10]

The lesion tends to appear anywhere between 29 to 93 years. There's a slight tendency for males to be affected. Typical initial symptoms include edema, soreness, and open wound that does not heal. Additionally, the majority of patients have a background of previous radiation therapy. Under the microscope, SpCC typically displays a two directional evolution pathway, featuring both pavement-like and fibroblast-like cell components. Nevertheless, some tumors exhibit less pronounced malignancy and may predominantly resemble atypical granulation tissue or fibromatosis.[10]

SpCC is generally regarded as aggressive due to its tendency for metastasis, with a reported incidence of 36%, and a relatively low 2-year longevity statistics of 55% in cases affecting the mouth.

This case presents a diagnostic dilemma as it was initially diagnosed to be non-lobular capillary hemangioma and CECT revealed absence of lymph node involvement. Consecutive histologic and radiographic investigation revealed peripheral ossifying fibroma, epitheloid mesenchymaltumour and malignant spindle cell tumor with cervical lymphadenopathy in CEMRI. Due to variable presentation and diagnosis, several excisions were attempted by different dental practitioner leading to the delay of accurate and timely treatment of the malignant growth.

Conclusion:

SpCC, is classified as a rare and highly malignant subtype of SCC,primarily found in the cranial alimentary tract. Soft-tissue SpCC are relatively uncommon in the bucco-pharyngeal cavity, comprising less than 1% of all benign growth in this region.[3] A careful diagnosis should be made by every dental practitioner before proceeding with the treatment. All practitioners should be aware about the various cancerous lesions of the oral cavity and should undergo thorough history taking and investigation before attempting any surgical intervention.

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