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Case Report

Dentistry Section

Giant Cell Fibroma of the Tongue: A Rare Entity

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ABSTRACT

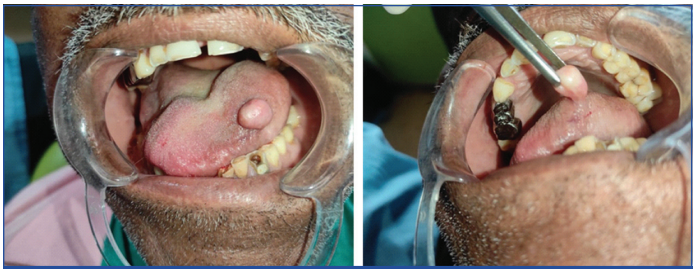
Giant cell fibroma is a rare entity classified as a benign tumour of the oral cavity, accounting for 2% to 5% of all oral benign fibrous growths. It can occur at various sites in the oral cavity, such as the tongue, palate, lip, and buccal mucosa, with the gingiva being the most common site. As the growth is self-limiting, it has been concluded that its recurrence is negligible. The aetiology of the growth has not been clearly known, but the fibrous proliferation suggests that chronic irritation or trauma to the tissue can give rise to such lesions. The growth is generally described as a dome-shaped nodule, either sessile or pedunculated, with an average diameter of 1cm. Usually, the lesion is asymptomatic unless it becomes secondarily infected. The present article presents the diagnosis and surgical management of a giant cell fibroma localised to the lateral border of the left-side of the tongue, corresponding to the occlusal surface of the molar teeth. Hereby, the author presents a case of a 58-year-old-male patient reported to the Department of Oral and Maxillofacial Surgery (OMFS) with a chief complaint of a growth on the left lateral border of the anterior region of the tongue for 2 to 3 years. On intraoral clinical examination, a dome-shaped, pedunculated mass measuring 1cm in diameter was observed. The lesion was asymptomatic and self-limiting. A provisional diagnosis of irritational fibroma was made. After a thorough history taking and clinical examination, surgical excision through an intraoral approach under local anaesthesia was performed to remove the lesion. The histopathological reports confirmed the diagnosis as giant cell fibroma. Rigorous clinical and histopathological examination has proven to be significant in making a precise diagnosis and planning accurate treatment for the uneventful elimination of lesions like giant cell fibroma. It is also essential to differentiate it from other pathologies to prevent complications.

Keywords: Excision, Irritational fibroma, Pedunculated, Self-limiting

CASE REPORT

A 58-year-old male patient presented to the Department of Oral and Maxillofacial Surgery with an intraoral growth on the lateral left aspect of the anterior two-thirds of the tongue. The mass has remained the same size since, it first appeared in the oral cavity, indicating self-limitation. The patient has a medical history of hypertension for 5 to 7 years and has been taking medication for it. Additionally, the patient is on antiplatelet medication and had hip surgery two years ago.

During the clinical examination, no extraoral swelling was observed on either side, and the lymph nodes were non palpable. Intraorally, generalised attrition of the teeth was observed, along with a missing tooth in the region of 37. A dome-shaped pedunculated [Table/Fig-1] growth measuring approximately 1×0.8 cm, firm in consistency, was present on the lateral aspect of the left-side of the tongue for 2 to 3 years. The lesion was not fixed to deeper tissues, and its apex was mobile [Table/Fig-2].



[Table/Fig-1]: Clinical appearance of the lesion prior to surgery.
[Table/Fig-2]: Clinical appearance of the lesion prior to surgery showing its attachment to the tongue. (Images from left to right)

Based on the patient's history and the intraoral findings of generalised attrition, a provisional diagnosis of irritational fibroma was made, likely due to continuous stimuli from the sharp attritted teeth. Differential diagnosis included neurofibroma, Giant Cell Fibroma (GCF), lipoma, and squamous papilloma.

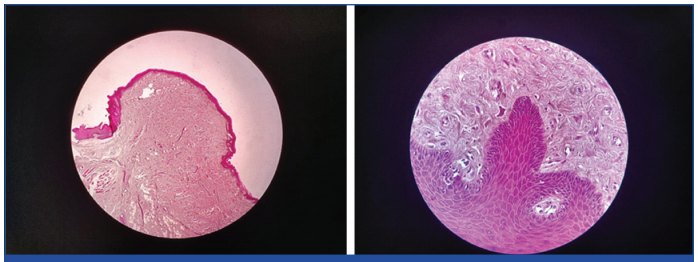
Surgical excision of the lesion was planned under local anaesthesia. After inducing anaesthesia without adrenaline, the lesion was excised [Table/Fig-3], and the resulting defect was closed using silk sutures [Table/Fig-4]. Prior to closure, thorough irrigation with betadine and saline solution was performed. The excised specimen was sent for histopathological examination (Haematoxylin and Eosin stain {H&E}).

[Table/Fig-3]: The excised lesion.
[Table/Fig-4]: Primary closure was performed with the silk sutures. (Images from left to right)

The histopathological examination report indicated parakeratinised epithelium supported by fibrocellular connective tissue stroma [Table/Fig-5,6]. The connective tissue exhibited thick bundles of collagen interspersed with stellate cells displaying dendritic processes and vesicular nuclei [Table/Fig-6]. Several multicellular fibroblasts were noted juxtaepithelially. Endothelial-lined blood vessels with red blood cells were also observed. The histopathological diagnosis was giant cell fibroma. The patient was advised to follow-up to evaluate the biopsy site, but unfortunately, the patient did not return to the hospital for the scheduled follow-up.

DISCUSSION

Fibrous hyperplastic lesions are commonly encountered at various sites in the oral cavity. These lesions are simply an overgrowth of



[Table/Fig-5]: Showing parakeratinised epithelium supported by fibrocellular connective tissue stroma (H&E 10X).
[Table/Fig-6]: Showing thick bundles of collagen interspersed with stellate cells showing dendritic processes in connective tissue (H&E 40X). (Images from left to right)

tissues that react in response to a continuous stimuli. Until the 1970s, GCF was considered a type of fibrous hyperplasia, simple fibroma, or fibroepithelial polyps. Later, based on clinical and histopathological examination, GCF was recognised as a specific entity [1]. In 1974, Weather DR and Callihan MD described the giant cells of GCF as large, stellate-shaped, mononuclear, and multinucleated giant cells [2]. Investigations over the years have pointed in the direction that GCF is simply a variant of focal fibrous hyperplasia or irritational fibroma, which is also known as a reactive connective tissue lesion of the oral cavity [3].

Giant cell fibroma is a localised, benign fibrous mass that clinically mimics any other fibroepithelial growth. Its diagnosis from other lesions is based on its peculiar histopathology [4]. Microscopically, a giant cell fibroma is an unencapsulated mass of loose fibrous connective tissue that contains numerous characteristic large, plump, spindle-shaped, and stellate fibroblasts, some of which are multinucleated. These cells are easily observed in the peripheral areas of the lesion [5].

The most accepted postulation for the origin of GCF is as a response to trauma or recurrent chronic inflammation [6]. The degree of trauma contributing to the development of such fibrous lesions varies in intensity, ranging from a lesser degree of trauma to a much greater degree of trauma and other dental injuries [7]. Lesions that show similar clinical appearances to GCF, such as irritation fibromas, pyogenic granuloma, peripheral giant cell granuloma, and peripheral ossifying fibroma, are also reported to develop in response to local irritants like plaque microorganisms, etc. [8], and iatrogenic factors such as overhanging restorations and their margins, etc., [9].

GCF is characterised by functional changes in fibroblastic cells, while other cells take over the synthesis of collagen [10-12]. In the present case, the causative factor can be chronic irritation produced due to constant biting on the lateral left aspect of the tongue by the maxillary and mandibular molar teeth on the corresponding side. The patient's tongue was placed in the space created by the missing 37 (According to Federation Dentaire Internationale tooth numbering system) tooth, which was extracted due to caries years ago. This tongue placement also caused occlusal interference during mastication and speech.

The age of occurrence of GCF has been reported to vary widely [13-15]. The majority of cases occur within the first three decades of life [13]. The present article presents a case of an older male individual in 5th decade. There is no sex predilection for the occurrence of GCF, although some authors have reported a slight female predilection [2]. Clinically, GCF is asymptomatic and appears as a pedunculated or sessile fibrous lesion with a colour similar to that of normal mucosa. It measures 0.5-1 cm and has a pebbly or a smooth surface. The surface may become ulcerated due to acute trauma or secondary infection. GCF is most commonly found on the gingiva, followed by the tongue and buccal mucosa [16]. In the presented case, the tongue is the site where GCF occurred.

Treatment options include excision of the lesion since giant cell fibromas do not typically regress spontaneously and are commonly self-limiting in size [17]. In children, electrosurgery or laser excision is preferred [18]. It is important to completely remove the lesion and eliminate the causative factors to prevent recurrence. Recurrence of GCF is extremely rare unless the lesion is incompletely excised and the irritating factors persist. Only a few cases of recurrence have been reported, mainly due to incomplete excision [6].

In present case, the lesion was completely excised under local anaesthesia. Sterilisation and disinfection protocols were followed to prevent infection at the operated site and ensure uneventful healing. The patient was advised to replace the teeth in the oral cavity, which were causing trauma to the tongue during mastication.

CONCLUSION(S)

The GCF can occur in individuals who are predisposed to chronic irritation in the oral cavity. While there are distinct histopathological features for identifying and diagnosing GCF, its clinical features resemble those of various other fibrous lesions. Therefore, accurately identifying and diagnosing GCF requires a higher degree of certainty, along with the necessary investigative work-up. This will also help eliminate the possibility of other similarly appearing lesions and guide precisely in providing the appropriate treatment required to eliminate GCF in the oral cavity.

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