Recurrent epulis granulomatosa: A second look

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Abstract

Epulis granulomatosa is a benign tumor-like proliferation arising from a poorly healing extraction socket, a complication as a result of bony spicules or tooth fragments within the socket. The remnants act as inciting agents to precipitate an inflammatory reaction to the fibrovascular connective tissue core replacing the defect previously occupied by the tooth. Recurrence of such lesions is rare as excision eliminate the stimulus for inflammation suggesting an indefinite underlying pathology. The following is a case report of recurrent epulis granulomatosa in a 64-year-old patient, detailing the clinical features, diagnosis, and management with emphasis on the differential diagnosis, both clinical and histopathological.

Introduction

Epulis granulomatosa is a benign hyperplastic tissue presenting as an overgrowth arising from a recently extracted tooth socket. Following a tooth extraction, healthy healing of the socket ensues by regeneration of hard and soft tissues followed by replacement of the space by fibrovascular connective tissue. One inadvertent complication following extraction can lead to hyperplastic overgrowth arising from the poorly healing extraction socket.1,2 The behavior of such lesions, tumor-like appearances, and rapid rate of growth of the lesion alarm both patients and dentists to consider a variety of malignant tumors. The following is a case report detailing the steps in diagnosis and management of such conditions.

Case Report

A 64-year-old male presented to the private dental clinic with the complaint of growth in the lower front region of the jaw. Patient recalls a similar growth arising from the extraction socket following 2 weeks after extraction of lower central incisor and the growth was excised. The present growth had occurred in the same site 11/2 after excision [Figure 1]. On examination, the lymph nodes were not palpable, and the lesion was seen as a solitary well-defined nodular growth of size size 1.5 cm × 1.5 cm in the region of 31 which was erythematous and smooth surfaced. The lesion was sessile, firm in consistency, non-tender, non-pulsatile, and no blanching was observed on palpation. There was severe bleeding when the lesion was probed. Intraoral periapical radiograph showed no bone involvement.

A provisional diagnosis of pyogenic granuloma or fibroma was made. Oral prophylaxis was done prior to surgical management. Curettage was done at the adjacent dentulous area to remove

Figure 1: Hemorrhagic growth arising from extraction socket 31
the contributing irritating factors. 32 showed poor prognosis and was extracted. The lesion was completely excised from the edentulous ridge with a sharp dissection from the buccal and lingual flaps. Electrocoagulation was done to arrest the bleeding. To promote hemostasis, and stop further oozing of blood, anchor suture was placed using 3-0 black silk suture. Betadine irrigation was done, and non eugenol pack was placed. Patient showed no recurrence following 3 months after excision [Figure 2].

The histologic picture showed parakeratinized stratified squamous epithelial lining with pseudoepitheliomatous hyperplasia in some areas. The underlying connective tissue was dense fibrous with numerous blood vessels and dense population of inflammatory cells [Figure 3]. Correlating with the clinical features the final diagnosis of epulis granulomatosa was given.

Discussion

Healing of extraction socket is usually uneventful when surrounding soft and hard tissues are minimally traumatized. There is regeneration of epithelial and connective tissue with replacement of the space by a fibrovascular tissue. The fibrovascular tissue can be described as a temporary or interim solution to filling of large defects and comprises of proliferating fibroblasts and new blood vessels in a sea of extracellular matrix. Initially, the extraction socket is filled with the blood clot which is organized by the defense cells, neutrophils, and the phagocytic macrophages. The function of macrophages is the removal of necrotic debris and exudate accumulated within the socket. One of the complications of a traumatic extraction is dry socket due to the expulsion of the clot from the socket. Another complication that can occur is when sharp bony spicules of the extraction wall, non-vital bone or even tooth structure can act as inciting agents inhibiting healing and favoring more of an inflammatory reaction.

The initial stages of healing are hampered and the cellular component comprising now mixed inflammatory cell population ensues altering the healing tissue to a hyperplastic granulation tissue. With time and the persistence of the precipitating agents the tissue progresses to grow, comprise more of macrophages and budding blood vessels with a more mature fibrous stroma. Most authors consider these lesions a type of pyogenic granuloma, a hemorrhagic gingival mass occurring in poorly healing bony socket.

Clinically, given the appearance of hemorrhagic mass, for a short duration, a differential diagnosis of giant cell granuloma, hemangioma, pulse or vegetable granuloma can be considered. Although Giant cell granuloma, clinically, shows a tumor like proliferation, histologically, the lesion exhibits a reparative connective tissue with the presence of giant cells which are absent in epulis granulomatosa. Hemangioma is another lesion that can mimic epulis granulomatosa, on inspection clinically. The absence of pulsations or bruits on palpation and presence of inflammatory cells histologically rule out hemangioma. Pulse or vegetable granuloma occur due to lodgment of vegetable or starch moiety within the socket. These then induce a foreign body reaction which lead to the formation of large growth and can histologically appear similar to any granulation tissue. In such a case, special stain periodic acid-Schiff (PAS), should be done to detect the presence or absence of carbohydrate. In our case, the specimen was negative for PAS thus ruling out pulse granuloma.

Epulis granulomatosa is called as epulis hemangiomatosa describing its significance of numerous blood vessel formations in such lesions. The lesion shows the presence of numerous newly formed small diameter blood vessels similar to hemangiomas. The pattern is seen throughout the lesion which is the reason for exuberant clinical growth. Such a response to inciting agents, such as bony spicules or tooth fragments, by the formation of a benign granulation tissue in an attempt to heal or repair the site does underscore the lesion to a mere inflammatory reaction. Lesions of such caliber were also incidentally seen as an oral finding in patients diagnosed with Klippel-Trenaunay syndrome attributing to the dense fibrous tissue or tendency of

Figure 2: Post-surgical follow-up - following 3 months after excision

Figure 3: Histological section of the lesion showing numerous blood vessels and inflammatory cells
malforming vessels suggesting a deeper pathology.\(^7\) In our case, the patient showed a recurrence of growth in the same site even after complete excision on the first presentation. The patient also complained of irritation in the ventral surface of the tongue. Intra oral examination revealed dilated vessels on the ventral surface of the tongue. These features, lingual varicosity, and recurrence, although not being conclusive, suggest an underlying vascular pathology which were significant findings in our case.

Careful inspection of the extraction socket for remnants of bone or tooth structure, even fragments of cementum can prevent an inflammatory reaction.\(^8\) The walls of the extraction socket also have to be examined for any sharp margins or bony spicules which have to be removed. The socket floor has to be curettaged when a granuloma is suspected.

**Conclusion**

Post-operative inspection of an extracted site should be done with utmost care to prevent any untoward inflammatory reaction. The reason for lingual varicosity in this patient is unknown. It is still under investigation. It may be related to epulis granulomatosa or just a co- incidental finding that is related to some other pathology.

**References**
