

Vegetable Granuloma – A Case Report

Jinisha Madathil¹, Divya K Devaraj²

ABSTRACT

Introduction: Vegetable granuloma or pulse granuloma results from the implantation of food particles of plant or vegetable origin and is usually seen in periapical or in sulcus areas. Many authors have postulated that food particles which are getting implanted will rapidly get digested, or may sometimes partly get altered by host responses resulting in vegetable granuloma or pulse granuloma. The cellulose part of plant food being indigestible may persist in the form of hyaline material, whereas the starch matter gets digested. This cellulose moiety invokes chronic granulomatous response.

Case report: 30-year-old female patient was referred from a private hospital for a swelling in relation to right side of cheek which they had noticed accidentally on a radiograph which had taken during extraction of her tooth. Intraoral examination was negative for swelling, and on palpation a bony hard swelling of size 0.5cm × 0.5cm in relation to anterior border of ramus can be located. Radiograph showed a mixed radiopaque radiolucent lesion with predominant radiopacity of 1cm × 1cm near to external oblique ridge. Histopathology showed the presence of concentric lamellated amorphous eosinophilic structure surrounded by fibro cellular connective tissue capsule.

Conclusion: A pulse granuloma is nothing but a reaction of the foreign body to any vegetable which is characterized by a collection of the hyaline; pulse granuloma is a well described entity with distinct histopathology. Occurrence of pulse granuloma can be well documented if extensive sampling is done.

Keywords: Vegetable Granuloma

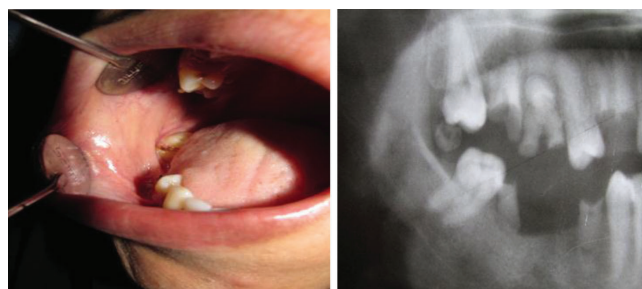
INTRODUCTION

Foreign bodies and foreign body reactions are commonly encountered in the oral cavity. Materials which evoke such reactions are commonly exogenous materials such as dental amalgam which is metallic in nature. Suture materials and vegetable matter are the non-metallic materials that are normally encountered.¹ Pulse granuloma is the term used most often for the tissue reactions involving vegetable matter and it illustrates a granulomatous response. The terminology of oral pulse granuloma is used for the oral cavity lesions. Several terminologies are used to describe this entity which include chronic mandibular periostitis, giant cell hyaline angiopathy, pulse granuloma, oral vegetable granuloma, hyaline ring granuloma, food-induced granuloma, and oral pulse or hyaline ring granuloma.²

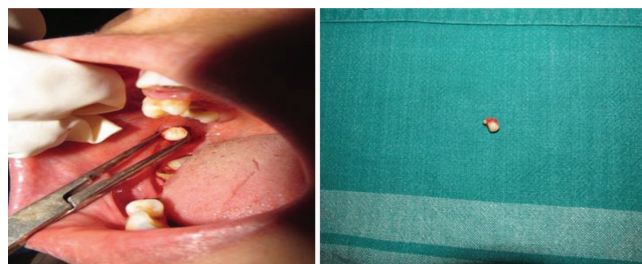
CASE REPORT

30-year-old female patient was referred from a private hospital for a swelling in relation to right side of cheek which they had noticed accidentally on a radiograph which had taken

during extraction of her tooth. She was unaware of the same as it was asymptomatic. Intraoral examination was negative for swelling, and on palpation a bony hard swelling of size 0.5cm × 0.5cm in relation to anterior border of ramus can be located. (fig 1) The mucosa over the swelling was normal. Radiograph showed a mixed radiopaque radiolucent lesion with predominant radiopacity of 1cm × 1cm near to external oblique ridge. (fig2) Provisional diagnosis of soft tissue



Intra operative pictures



Histopathology

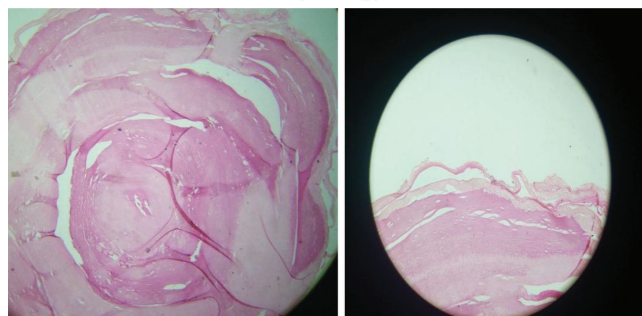


Figure 1-6:

¹Senior resident, Government Dental College, Kozhikode, Department of Oral Medicine and Radiology, ²Assistant Professor, Department of Oral Medicine and Radiology, Government Dental College, Thrissur, India

Corresponding author: Dr Jinisha Madathil, Senior Resident, Department of Oral Medicine and Radiology, Government Dental College, Kozhikode, India

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calcification was considered with a differential diagnosis of calcified lymph node and calcified lipoma. Excisional biopsy was done. (Fig 3, 4) Histopathology showed the presence of concentric lamellated amorphous eosinophilic structure surrounded by fibro cellular connective tissue capsule. (fig5, 6)

DISCUSSION

Pulse granuloma is described as a distinct entity with undefined etiology. They appear as a spherical, ovoid, or irregular bodies surrounded by fibroblasts and appear as homogeneous, eosinophilic material in Hematoxylin and Eosin stained section and are surrounded by acute and chronic inflammatory cells and foreign body giant cells.³ Occasionally, there may be presence of small round calcified basophilic bodies within the amorphous hyaline material.⁴

The terminology regarding this lesion is controversial since its origin. King used the term oral pulse granuloma, for lesions occurring in the oral cavity.⁵ Chou *et al.*, have described these lesions as a distinct entity and classified them into central and peripheral according to the location.⁵ The pathogenesis of pulse granuloma has been defined as exogenous or endogenous in origin, the concept of exogenous origin is based on the implantation of food particles of plant origin, through extraction sockets, deep periodontal pockets, in filled root canals and grossly decayed teeth.⁵⁻⁷ Talacko and Radden hypothesized that once the food gains access to tissues, it is rapidly digested and get altered by the host responses and the cellulose moiety of plant foods is indigestible and persists in the form of hyaline material, inciting a chronic granulomatous response.⁴ Adkins considered the lesion to be a foreign body granuloma, with the hyaline material being the foreign body and the origin of the foreign body was unknown.⁵ Rannie, Mincer, and co-workers considered that the foreign body reaction is due to legume cells, which contain starch and they termed it as pulse granuloma.⁸⁻¹⁰ Pulse granuloma is commonly found in the mandibular posterior region where food stagnation is more common.^{4,11} Harrison and Martin supported the theory of a vegetable nature of the hyaline rings on the basis of ultra-structural investigation.^{12,13} They suggested that the hyaline rings were mainly composed of cellulose, thus the term "oral vegetable granuloma" was proposed. Based on histochemical and immunohistochemical analyses, LuizAlcinoGueiros concluded that oral lesions are caused by traumatic implantation of vegetable particles in an extraction socket or oral ulcer with cellulose being responsible for granuloma formation.¹⁴

Radiographically, intraosseous pulse granuloma can appear as an irregular radiolucent lesion with well-formed trabeculae of bone. Extra osseous pulse granuloma presents as poorly defined erosion of the crest of the alveolar ridge. The presence of hyaline rings or amorphous hyaline masses within a fibrous connective tissue stroma is suggestive histopathological features. Acute and chronic inflammatory cells and foreign body giant cells can also be seen. Treatment is complete surgical excision.

CONCLUSION

In conclusion, pulse granuloma is a foreign body reaction to any vegetable matter which is characterized by a collection of the hyaline; and is a well described entity with distinct histopathology.

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