

Letter to the Editorts

Oral Pulse Granuloma- A Rare Entity

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The term pulse granuloma is a rare variant of the foreign body granuloma caused by vegetable particles. Pulse granulomas have been described in the lungs, stomach and peritoneum (1). It has been described in literature under variety of names. The terms most commonly used are hyaline ring granuloma, chronic periostitis, granuloma in edentulous jaws, giant cell hyaline angiopathy, pulse granuloma, and oral vegetable granuloma (2).

The first description of pulse granuloma was by Lewars in 1971 who called it chronic periostitis. In 1977 Dunlap and Barker suggested the term giant cell hyaline angiopathy. In 1978 King suggested the term Pulse Granuloma (2, 3).

Any of plant foods like vegetables, cereals and fruits comprising of cell walls could be responsible for development of oral lesions. Knoblich stated that leguminous cellulose, compared to that of other vegetable food stuffs, is particularly noxious

because of its high resistance to digestion by tissue macrophages. Legumes/pulses are rich in phytohaemagglutinins, which have been shown to have granuloma enhancing properties (4). The etiopathogenesis of pulse granuloma has been explained based on two concepts i.e. exogenous and endogenous concepts. The concept of exogenous origin for these lesions is based on the suggestion of implantation of food particles of plant origin, through extraction sockets, deep periodontal pockets, unfilled root canals and grossly decayed teeth. The endogenous origin is attributed to localized degenerative changes in the walls of blood vessels, degraded collagen or fibrosed extravasted serum proteins (5).

Connective tissue stroma of these lesions shows lymphocytes, macrophages, fibroblasts and few plasma cells. Droplet calcification may be present within eosinophilic masses. Hyaline rings enclose chronic inflammatory cells, or

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multinucleate giant cells. The diagnosis of pulse granuloma is made only in the presence of starch granules, with cellulose envelopes that appear as hyaline rings (4, 5).

The oral pulse granuloma is most commonly found in the posterior regions of the mandible. In a study conducted by Talacko and Radden in 62 diagnosed cases of oral pulse granuloma, 37(60%) were in males and 25 (40%) were in females. Age range was 13-68 yrs. 36(58%) lesions were located in the mandible and 25 (40%) in the maxilla & 1 presented as a recurrent lump in the cheek. The edentulous mandible was the site in 18 cases of these lesions, which were most common in premolar-molar regions. These lesions were related to a full lower denture. The history given was usually that of recurrent swelling, ranging from 2 weeks to many years duration. Swelling was often situated on the buccal aspect of the mandible causing displacement of denture. Swelling was firm or fluctuant & usually painful to palpation but was completely asymptomatic in some patients. Discharge was occasionally detected and development of an intraoral fistula occurred in 1 patient while 2 other patients presented with an extra oral fistula. In remaining 44 patients, oral pulse granuloma was found in the walls of cysts. Residual, nasopalatine and keratocysts, complication of impacted third molar with history of pericoronitis were in 3 cases. Two of these pulse granuloma cases were found in the walls of lateral paradental cysts. One patient was diagnosed as having oral pulse granuloma associated with granulomatous tissue of a post extraction socket. Most unusual case presented as a recurrent lump in the cheek. All 44 patients presented with signs and symptoms

of pain, swelling, discharge or chronic sinus. Some lesions were found on routine clinical & radiological examination (6, 7).

Oral pulse granuloma is a diagnosis for localized lesion resulting from implantation of food particles of plant origin. It often occurs in the posterior regions of the mandible presenting as swelling or ulceration of mucosa. This entity should be considered in the differential diagnosis of cases which appear as swelling and ulcers.

References

1. Ide F, Kusama K, Saito I, Umemura S. Pulse granuloma in the wall of a dentigerous cyst. *J Oral Maxillofac Surg* 1982;40(10):659-62.
2. Chou L, Ficarra G, Hansen LS, Fransisco S. Hyaline ring granuloma: A distinct oral entity. *Oral Surg Oral Med Oral Pathol* 1990;70(3):318-24.
3. El-Labban NG, IR Kramer. The nature of the hyaline rings in chronic periostitis and other conditions: An ultrastructural study. *Oral Surg Oral Med Oral Pathol* 1981;51(5):509-15.
4. Talacko AA, Radden BG. The pathogenesis of oral pulse granuloma: an animal model. *J Oral Pathol* 1988;17(3):99-105.
5. Manjunath BS, Kumar GS, Vandana R. Histochemical and polarization microscopic study of two cases of vegetable/pulse granuloma. *Indian J Dent Res* 2008;19(1):74-7.
6. Talacko AA, Radden BG. Oral pulse granuloma: clinical and histopathological features. A review of 62 cases. *Int J maxillofac Surg* 1988;17(6):343-6.
7. Harisson JD, Martin IC. Oral vegetable granuloma: Ultrastructural and histological study. *J Oral Pathol* 1986;15(6):322-6.