

Early detection of odontoma in patients with clinical features of periodontal disease: a case report

Febri EN Tetelepta,^{1*} Andi M. Adam²

Abstract

Objective: Chronic periodontitis is an infection of the gingiva that causes damage to the soft tissues and tooth-supporting bones. Chronic periodontitis is usually a slowly progressive disease that does not cause the affected individual to feel pain. For most patients, gingival bleeding during oral cleansing procedures is a sign of reported disease. Odontoma is an odontogenic tumor, characterized by slow growth. The tumor consists of enamel, dentin, cementum and sometimes pulp tissue.

Methods: A 38-year-old male patient complaints swollen gums on the right upper back region. Clinical examination showed the presence of gingiva swelling, fistula and grade 3 teeth mobility. In the systemic

of the patient, malaise, fever and lymphadenopathy were not found. The treatment plan includes subgingival scaling treatment as well as antibiotic therapy as initial therapy. Advanced treatment is then continued with curative therapy with surgical extirpation, periodontal surgery and bone graft

Results: The success of treatment is shown by controlled inflammatory as well as probing depth. The condition of the teeth and the dental-jaw relationship has been restored after treatment.

Conclusion: Chronic periodontitis with odontoma indicates treatment options according to the severity of the disease, access to mechanical care, and the patient's systemic condition.

Keywords: Bone grafting, Gingival overgrowth, Odontoma, Surgical flap

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¹Dental Polyclinic, Bombana general Hospital, kendari, Indonesia
²partment of Periodontology, Faculty of Dentistry, Hasanuddin University, Makassar, Indonesia

Introduction

Periodontal disease is one of the most common human woes in global prevalence. The onset and progression of periodontal disease is closely related to pathogenic bacteria present in subgingival biofilms.¹

In recent years it has shown an increase in oral health problems, but periodontal disease continues to increase with marked improvement in signs.^{2,3}

Periodontitis is one of the most common diseases and is characterized by the destruction of connective tissue and bone tooth support after host inflammatory responses secondary to periodontal bacterial infection.⁴

Chronic periodontitis is a complex disease mainly caused by intraoral biofilms containing pathogenic periodontal microorganisms.^{1,5-7} The National Institute of Dental and Craniofacial Research, the National Institutes of Health, has long maintained that: "Dental and oral health is not an independent body cut off from the body. Instead, it's woven into the overall health."⁸

Some of these studies have reported a link between periodontal disease and some systemic diseases. Among others are diabetes mellitus, lupus erythematosus, heart disease and fetal disturbance during pregnancy.

Odontoma is a benign tumor of odontogenic origin.^{9,10} They are described as mixed tumors containing epithelial and mesenchymal elements. These calcification lesions are grouped into compound and complex types. Odontoma compound can look like a tooth like structure containing enamel, dentine, cementum and pulp.¹¹ Complex odontomas appear as an unorganized amorphous mass of calcified hard tissue.^{9,12-14}

Case Report

A 38-year-old man who came to Dental Hospital Hasanuddin University complained about a lot of tartar because he had not done the cleaning of tartar, last tartar cleaning about 3 or 4 years ago. At the time of the extraoral examination, there was no apparent abnormality, the intraoral appear subgingival calculus in most of the maxillary and mandibular teeth. Besides, patients complaining of teeth on the right rear right pain when in use mastication. On examination was seen tooth wobbles 15 and 16. Patients have a history of chronic periodontitis and not found systemic disease. Clinical examination appears to be calculus, in teeth 14, 15 and 16 indicating a swelling of gingiva, recession, and tooth shaking of 16 degrees 3, shaking of the teeth

*Correspondence to:
tetelepta89@gmail.com

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of 15 degrees 2 and gait of 14 degrees 1. The results of x-ray teeth showed a horizontal bone damage in the form of radiolucent images of almost all cervical parts of the teeth, the apical tooth of 14 saw radiopaque images of a set of pearl-like grains. There is also an overview of dental edentulous 37 and 46 and the rest of the tooth root 26. [Figure 1A-1B](#).

Further treatment is performed by surgery in the form of removal of odontoma (extirpation) accompanied by periodontal flap surgery beginning with extra and intra oral asepsis and followed by local anesthetic infiltration action, vertical incision is performed by blade no.15c at distal tooth 13, sulcular in the teeth 14,15,16. The opening of the flap is done with the raspatorium. And followed by removal of granulation tissue. Then performed bone discharge by using bone bur at apical part of tooth 14, to expose odontoma. Tooth extraction 14 and odontoma extirpation were then followed by curettage actions in bone defects caused by odontomas. After a net bone defect from residual odontoma, scaling, root planing and curettage around the teeth that periodontitis are performed. Application of bone graft Gamacha® type allograft and in-place membranes in bone defects caused by odontoma and periodontitis. [Figure 2A-2F](#).

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After bone graft and membrane applications, sutures were performed with 5-0 silk and the installation of periodontal pack. Visit 7 days later, the pack of periodontal and stitches opened. The clinical periodontal tissue condition still showed slightly reddish signs, no pain complaints. The wound was smeared with a 10% betadine solution with cotton pellet and administered povidone iodine mouthwash, and systemic treatment was continued for the next 5 days. Patients were asked to control again about 1 week later to know the development of healing, and next control every 1 month. [Figure 3A-3B](#).

Discussion

Conventionally, subgingival mechanical instrumentation ie scaling and root planing is the primary treatment modality for periodontal therapy that most of the periodontal conditions can be effectively treated.¹⁵

Non-surgical periodontal treatment based on scaling root planning (SRP) consists of removal of plaque, calculus and bacterial debris from the root surface. In general, SRP is performed using manual or electrical instruments, which are equally effective. However, traditional therapies are known to have some limitations and disadvantages, such as the difficulty of access to deep furcation, grooves, concho and pockets, long periods and the need for more physical effort for manual instrumentation, as well as the formation of contaminated aerosols when using ultrasonic scalers.^{7,16,17}

Currently, many procedures requiring the use of bone graft to replace or restore existing bone volume are absorbed because of systemic pathology include: periodontal defect, tooth loss and other, conditions. This has led to increased availability of

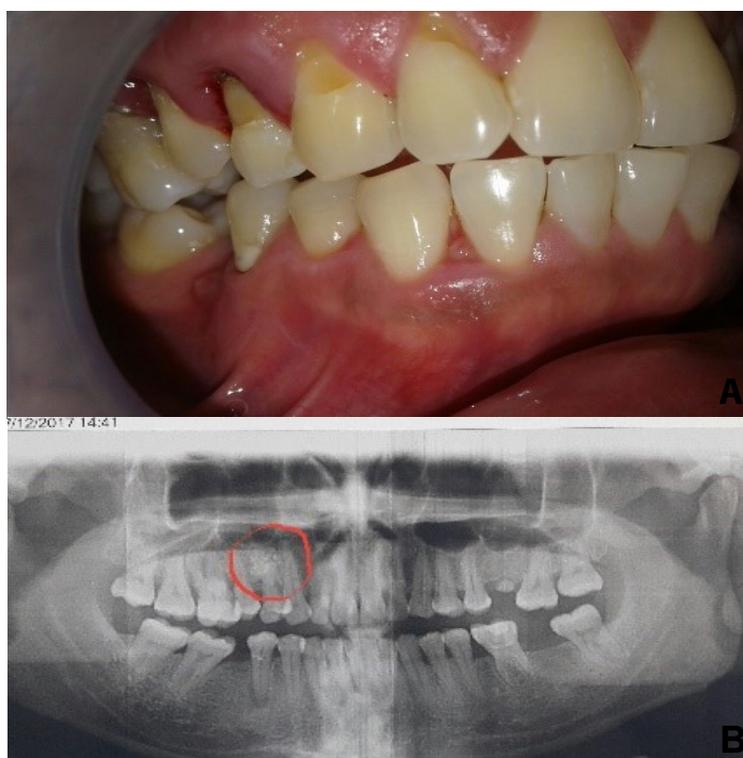


Figure 1 A. There appears calculus, swelling and recession in the teeth 14, 15 and 16, B. The radiopaque view on the apical of the tooth 14 is like a set of pearly grains

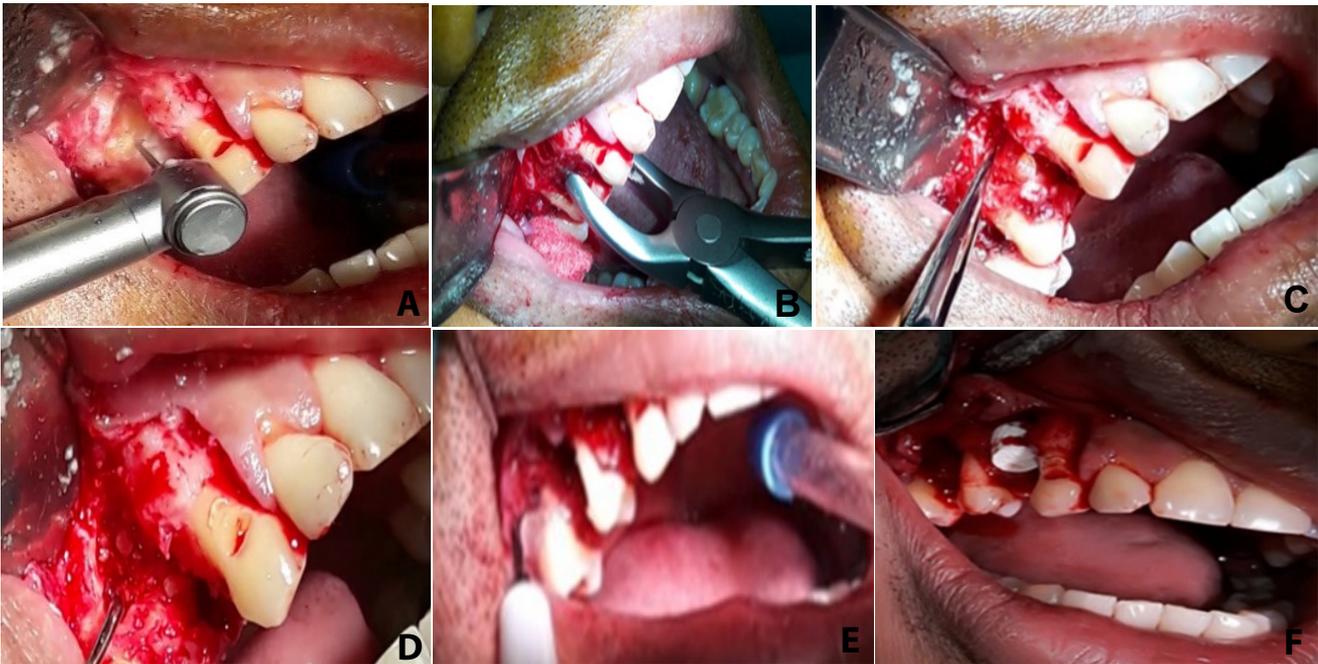


Figure 2 A. Bur's bones are used to expose odontomas, B. Tooth Extraction 14, C and D. odontoma extirpation, E. Curettage of granulation tissue around bone defect odontoma, F. Installation of bone graft



Figure 3 A. Suturing, B. Control after a week

new biomaterials that can be used to increase bone volume recovery. These biomaterials can be obtained from the patient's own body, other humans, animals, or even can be produced synthetically.¹⁸

The most commonly used bone graft type in dentistry include autologous bone grafts, allografts, xenografts and alloplastik. An autologous bone graft is taken from a donor in the patient's own body and possesses osteoconductive and osteoinductive properties. Such as autologous bone grafts also contain osteogenic cells that help reduce bone healing time. Allografts are another type of bone graft where bone is taken from other donors of the

same species, and is usually obtained from human corpses and subsequently undergoing processing. Alloplastic bone replacement may be ceramic, hydroxyapatite, tricalcium phosphate or calcium sulphate.¹⁸

Odontoma is the most common odontogenic tumor of the jaw.^{9,12} Odontoma is considered an anomalous development not a true neoplasm. Two main types of odontomas are described: complex odontomas, amorphous and chaotic patterns of calcified dental tissue, and odontoma compounds, miniature or rudimentary tooth enamel.

Conclusion

According to some literature does not provide an explanation of the relationship between odontoma with periodontal. Odontoma is a benign odontogenic pathogen accidentally found on radiography during initial examination of patients with clinical features of periodontal disease. But it can be a concern as they grow to reach unusual dimensions and displace teeth. A conservative surgical approach is recommended, in order to preserve dental tissue and obtain optimal tissue healing. Histologic evaluation is necessary to confirm the true diagnosis of odontoma period regular periodic checkup along with conventional radiography should be required as early detection to avoid future complications.

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Conflict of Interest

The authors report no conflict of interest.

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