

Management of cannabis-induced periodontitis via resective surgical therapy

A clinical report

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Periodontal inflammation and bone loss are manifestations of periodontal disease, which is attributed to different environmental and genetic factors.¹

Environmental factors, such as smoking, are well-studied.² Smoking is identified as a significant risk factor for both severity and extent of periodontal disease through impairing the immune response, and compromising the tissue's healing ability.³ Some epidemiologic studies and clinical reports suggest a relationship between cannabis smoking and periodontal disease.⁴⁻⁶

In a cohort study that evaluated periodontal attachment loss (AL) at different ages (26, 32, and 38 years old), smokers had 3.5%, 12.8%, and 23.2% AL compared with nonsmokers, respectively. Frequent cannabis use was reported to be associated with greater AL after age 32 years, but not at age 26 years.⁴ Those who had smoked tobacco at young ages (from 15 through 38 years) were at a higher risk of being in the moderately or markedly increasing trajectory groups of periodontal disease. There was a similar risk gradient for those who were in the highest 20% of cannabis usage.⁵

Thomson and colleagues⁶ reported the incidence of AL between the ages of 26 and 32 years in the none, occasional, and high cannabis

ABSTRACT

Background and Overview. There is a lack of clinical research on the potential effect of cannabis use on the periodontium as well as its effect on treatment outcomes. The aim of this case report is to illustrate the clinical presentation of periodontal disease in a young woman who was a chronic cannabis user, as well as successful treatment involving motivating the patient to quit cannabis use and undergo nonsurgical and surgical therapy.

Case Description. A 23-year-old woman sought care at the dental clinic for periodontal treatment. During a review of her medical history, the patient reported using cannabis frequently during a 3-year period, which coincided with the occurrence of gingival inflammation. She used cannabis in the form of cigarettes that were placed at the mandibular anterior region of her mouth for prolonged periods. Localized prominent papillary and marginal gingival enlargement of the anterior mandible were present. The mandibular anterior teeth showed localized severe chronic periodontitis. The clinicians informed the patient about the potentially detrimental consequences of continued cannabis use; she was encouraged to quit, which she did. The clinicians performed nonsurgical therapy (scaling and root planing) and osseous surgery. The treatment outcome was evaluated over 6 months; improved radiographic and clinical results were observed throughout the follow-up period.

Conclusions and Practical Implications. Substantial availability and usage of cannabis, specifically among young adults, requires dentists to be vigilant about clinical indications of cannabis use and to provide appropriate treatments. Behavioral modification, nonsurgical therapy, and surgical therapy offer the potential for successful management of cannabis-related periodontitis.

Key Words. Cannabis; gingival enlargement; marijuana; nonsurgical therapy; oral health; periodontal disease; periodontal surgery; periodontitis.

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exposure groups as 6.5%, 11.2%, and 23.6%, respectively. After controlling for sex, tobacco smoking (measured in pack-years), compliance, and dental plaque, the relative risks for the highest cannabis exposure group were 1 (95% confidence interval [CI], 1.2-2.2) for exhibiting 1 or more sites with 4 millimeters or more AL, 3.1 (95% CI, 1.5-6.4) for exhibiting 1 or more sites with 5 mm or more AL, and 2.2 (95% CI, 1.2-3.9) for exhibiting incident AL in comparison with people who never smoked cannabis.⁶ Tobacco smoking was strongly associated with periodontal disease occurrence; however, no relationship was found between cannabis use and tobacco smoking in predicting the occurrence of periodontal disease.⁶

Cannabis is one of the most commonly used recreational drugs in the United States and across the world.⁷ Based on the 2013 National Survey on Drug Use and Health, cannabis is the most frequently used recreational substance, with 19.8 million past-month users.⁸ In 2014, 2.5 million people 12 years or older reported use of marijuana for the first time during the past 12 months, which indicates an average of nearly 7,000 new users each day.⁸ It has been estimated that approximately 147 million people (2.5%) around the world use cannabis.⁹ In the United States, policy changes including legalization and legislation in many states have increased usage drastically, and have lowered the perception of risk by the public, especially in the population of young adults.⁸ A dental health screening of 13- to 18-year-olds across 8 years in public and private middle schools and high schools in Nevada showed significantly higher rates of cannabis use (12%) compared with the national average.¹⁰ As a dental health care professional, it can be challenging to uncover a patient's drug abuse and treat the various manifestations of cannabis use in the oral cavity.

Although some reports have addressed the effect of cannabis smoking on the oral cavity, including xerostomia, leukoplakia, oral candida, and specific periodontal complications such as gingivitis, periodontal bone loss, and gingival enlargement, documented clinical periodontal manifestations of frequent cannabis use are limited.¹¹⁻¹⁴ Moreover, we are not aware of any study reporting clinical management of cannabis-induced AL. In the following case report, we discuss a patient with chronic, cannabis-induced localized periodontitis and gingival enlargement.

CASE REPORT

A 23-year-old woman sought care at the postgraduate periodontics clinic at the College of Dental Medicine at Columbia University. The patient's medical history was noncontributory, and the patient denied the use of any medications and tobacco smoking. Her oral hygiene was fair with some plaque accumulation on the mandibular incisors. The patient reported smoking cannabis frequently over a 3-year period, which coincided with the

occurrence of gingival inflammation. She used cannabis in the form of hand-constructed cigarettes that were placed at the lower anterior region of her teeth and lips for prolonged periods. The patient reported that gingival enlargement occurred shortly after she started smoking cannabis; she reported xerostomia as well.

During the clinical examination we observed generalized decalcification of the teeth near the buccal gingival margins. The papillary and marginal gingivae showed localized enlargement. We noted a nodular appearance of the facial gingiva with 6-mm AL at the mesiofacial aspect of tooth no. 24 and mesiofacial aspect of tooth no. 25 (Figure 1A, B). While examining the periodontium, we found the lingual gingiva had normal probing depths in conjunction with mild gingival inflammation (Figure 1C). The probing depth, attachment level, and bleeding on probing are shown in the table. Radiographic interproximal bone loss was also evident (Figure 1D).

Only 2 sites in the maxilla (mesiobuccal aspect of tooth no. 2, mesiobuccal aspect of tooth no. 14) had probing depths greater than 3 mm without concomitant radiographic and clinical AL. We found no evidence of AL clinically in areas other than the mandibular anterior teeth. We did not identify interproximal bone loss on posterior bitewing and periapical radiographs. The patient stated that she was aware of the enlarged gingiva in the anterior region and reported sensitivity, bleeding, and discomfort in that region.

We made a periodontal diagnosis of drug-associated gingival enlargement, mucogingival deformities, and conditions around teeth in the form of gingival excess¹⁵ and localized severe, chronic periodontitis.

We planned the following sequence of therapy:
■ prophylaxis with localized scaling and root planing (SRP) around the mandibular anterior teeth;
■ periodontal re-evaluation;
■ surgical therapy as needed.

The overall prognosis at that time was determined as questionable based on Kwok and Caton's classification,¹⁶ as the periodontal status of the involved teeth was influenced by local and systemic factors that might not have been possible to control. We performed localized SRP involving the mandibular anterior incisors, whereas other areas received an adult prophylaxis. We re-enforced oral hygiene instructions to the patient. In addition, the patient was started on a chlorhexidine gluconate (0.12%) oral rinse, twice a day, for 2 weeks. We informed the patient about the potential health consequences of cannabis, and the patient reported quitting cannabis use after SRP.

ABBREVIATION KEY. AL: Attachment loss. D: Distal. F: Facial. L: Lingual. M: Mesial. SRP: Scaling and root planing.

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