Periodontal management of the elderly with medical compromise: a case report

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Abstract

Objective: The aim of the periodontal treatment is to provide healthy and functional dentition all through a lifetime. The primary objective of this case report is to describe that periodontal disease in the elderly complicated by medical compromise should be treated and the results will be very satisfactory.

Methods: A sixty-eight years old female patient with cardiovascular disease took amlodipine and aspirin medication since two months ago. Patients complained of enlarged gingiva, all of the teeth become mobility. Periodontal surgery was performed after referring back to the internist to prepare patient condition facing periodontal surgery.

Results: After several phase of periodontal treatment, the gingival inflammation demonstrated a good control and periodontal status become more stable.

Conclusion: Although managing periodontal disease in elderly is complicated, the proper control of the periodontal infection and inclusion of other healthcare professionals will improve the prognosis and get a satisfactory result. In fact, studies demonstrate that elderly individuals whose comprehensive management includes dental care develop fewer co-morbid conditions and require less expenditure of healthcare rupiahs.

Keywords: Amlodipine, Cardiovascular disease, Elderly, Hyperplasia gingiva, Periodontal disease

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Introduction

The elderly population in Indonesia is the world's top five based on the results of the 2010 population census. Population of elderly in Indonesia reached 20.24 million people, equivalent to 8.03 percent of the total population of Indonesia in 2014.¹ 80% of older people aged over 65 years are diagnosed with one or more chronic diseases and 20% are limited in their ability to take care of themselves. Chronic diseases such as arthritis, hypertension and respiratory diseases are the most common disorders reported in this age group.

Periodontal pockets are niches that become suitable habitat for hundreds species of bacteria especially periodontal pathogens, resulting inflamed area, which is the starting point of bacteria and/or by-products into the systemic circulation.² This inflammation disease may further lead to loss of teeth that impair the function of mastication and quality of physical and social.³ Several studies identified that periodontitis is a risk factor for systemic disease.⁴⁻⁸

Elderly are also problematic in the social sphere such as poverty, retirement and dependency. Periodontal infection and inflammation are likely to impair oral function, reduce quality of life and increases a patients risk of developing severe chronic systemic disease.³ Since the consequences of periodontal disease are critical, general dentist, periodontist and medical specialist practitioner

should all together to maintain oral health related quality of live of elderly as well as possible.^{9,10}

In this case report authors will describe periodontal treatment in elderly that have a cardiovascular disease and take anticoagulant medication was not restricted according to chronological age but it is dependent on medical, emotional and financial factors. The literature supports treatment of peri-odontitis for elderly who are medically compromised and dependent is to prevents the progression of periodontitis.

Case Report

In October 2017, a 68 years old female was visited Department of Periodontology, Dental Hospital Hasanuddin University. The chief complaint was swollen gum since two months ago and tooth mobility. She felt very uncomfortable as the swelling interfered while chewing and sometimes there was bleeding spontaneously.

From medical history, patient was diagnosed with hypertension by internist. Patient start consumed amlodipine 10mg daily and simarc 2mg since then. Complete course of laboratory tests, including glucose tolerance, urinalysis and routine blood tests were normal.

From dental history, patient did not the proper periodontal supportive therapy. Last time scalling

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and root planning was three years ago. A week ago she was visited general dentist to treat her gingival enlargement, and get administered amoxicillin and cefaclam.

Generally the patient looks healthy and alert. Intraorally, there was massive gingival enlargement on the labial/palatal of the upper and lower teeth. Her oral hygiene was very poor with abundant plaque and calculus [figure 1](#). Bleeding on probing was detected almost on all region. Periodontal pockets were 3 to 10 mm. From the panoramic radiograph founded multiple retained roots embedded in the overgrown tissues of the upper and lower arch and a few teeth are missing [figure 2](#). Her upper left central incisors was deeply carious. Most of lower teeth were mobility miller class I and the upper incisors were mobility miller class III.

The prognosis of element 21 and 22 were hopeless because of the bone loss almost two-third root, there were pathologic migration and severe mobility. The diagnosis was chronic periodontitis with gingival hyperplasia induced by medications (amlodipine).

The treatment plan was made, with initial phase is to extract retained root and compromised tooth, instructions of oral hygiene, full mouth scaling root planning, caries removal, restoration and continued with flap surgery if the overgrowth still exists after initial therapy and prosthetic to replace a missing teeth.

Full mouth scaling and root planning of all teeth was done on the first visit and the patient was given oral hygiene instruction and motivation. Referral letter was sent to the internist that treat her to substitute Amlodipine and to get approved for the further treatment such as extraction or/and periodontal surgery. Because of anxiety, patient did not make an appointment scheduled for extraction of hopeless tooth and retained root. After two months, patient come and there is reduction of gingival overgrowth. At the following visit after reexamination, there was still remaining overgrowth gingiva, so that flap surgical and gingivectomy was performed for the lower gingiva. Gingivectomy was done to diminish the fibrous granulated tissue over the interdental region of all gingiva in lower arch. Continued with flap surgery to gain accessibility of scaling and root planning. The retained root at lower arch was extracted. After one week, the gingiva had good improvement, with a slight recession [figure 3](#).

Second surgery done after one month for region 13 and extraction of retained root at upper arch. One week post surgery, the gingiva had a good result with reduced of pocket depth into normal. Patient are less cooperative because her visits are often hampered by health and anxiety.

The compromised teeth were yet extracted because patients refused the plan. Patient had motivated to eliminate all etiologies of her periodontal disease. Currently this patient will proceed to further treatment.

Discussion

Periodontal disease is common in elderly throughout the world. In Indonesia, prevalence of periodontal disease in elderly is 86%.¹¹ Periodontal disease as a chronic disease had effects that accumulate with age.¹² Many patients especially elderly seeking periodontal care have significant medical conditions which may alter their treatment plan and management.⁸ Therefore, a thorough medical history and assessment of the patient is a prerequisite to evaluated the impact of a systemic disorder on periodontal therapy.^{5,6,13}

Physician consultation is necessary to get detailed information about the systemic condition. It is essential for clinician to have a current level of knowledge of medical conditions and medications and their effects.

Periodontal therapy in elderly must be adjusted to medical conditions, access to care, affordability and the ability to perform adequate oral hygiene. It is important to recognize the need for frequent updates of medical history and medications and to consider the potential risk of complications when providing care to medically compromised patients. Comprehensive treatment plan include adequate patient history (medical/dental), appropriate diagnostic test and physician referral or consultation while indicated. Periodontal treatment in elderly is 'too little, too late' to affect meaningful change for some chronic medical outcomes.

Few studies have assessed the outcome of nonsurgical therapies in people ≥ 65 years of age. A recent systematic review has shown that older individual that have nonsurgical debridement in the treatment of periodontitis provides moderate improvement in perceived quality of life.⁴

Gingival hyperplasia is characterized by an accumulation of extracellular matrix within the gingival connective tissue particularly the collagenous components.¹⁴⁻¹⁶ It has been associated with multiple factors including systemic inflammation, adverse drug effects and cardiovascular disease. Drug-induced gingival overgrowth of an adverse drug reaction of commonly prescribed drugs Calcium Channel Blockers (CCBs). Drug-induced gingival hyperplasia usually occurs within the first 3 months of medication and begins as an enlargement of the interdental papilla.^{17,18}

Amlodipine, commonly prescribed to treat hypertension, is a third-generation calcium channel

Figure 1 Enlargement gingiva with poor oral hygiene at first visit

Figure 2 Panoramic radiograph view

Figure 3 After periodontal surgery

antagonist. Amlodipine advantages over first-generation calcium channel antagonists such as nifedipine; because of fewer systemic side effects such as hypotension, peripheral oedema, nausea, palpitation and syncope and it is generally better tolerated.¹⁸

The exact mechanism behind the effect of amlodipine and the increased risk of gingival hyperplasia is not clearly understood. Amlodipine affect calcium ion cellular flux, that makes plausible for amlodipine increase the risk of gingival hyperplasia. Amlodipine inhibit the intercellular uptake of calcium and this action may change the gingival fibroblasts secretory properties or the production of collagenases. The result is overstimulated gingival fibroblasts. However, consider many studies this condition were significant determined by poor oral hygiene and plaque-induced inflammation.^{18,19}

To produce a healthy periodontium that characterized by a lack of bleeding on probing and shallowing pocket ($\leq 3\text{mm}$), dentist must be pursued whenever there is a chance to success, it may not be an achievable outcome in many elderly patient. This compromise should not be regarded as being sub-standard in any way. The dentist must have a realistic treatment outcome in mind before commences the periodontal therapy. However the outcome may vary depending upon the patient wish and individual findings.

How effective is periodontal therapy in elderly, it is certainly worth while treating periodontal disease in elderly with high quality treatment combined with adequate plaque control and motivation to result in a good therapeutic outcome.^{20,21} The literature suggest that age per se is not an important factor in determining the result of periodontal therapy.¹⁹

Conclusion

Periodontal disease has been linked to so many chronic medical diseases. Despite periodontal treatment of elderly may be too late, too little to affect meaningful change for some chronic medical outcomes, but proven by literature increased optimal oral health that is substantial for reduction of the risk for chronic diseases and increased a quality of life.

Periodontal treatment whether surgical and non surgical therapy for elderly is possible. Management of periodontal disease in elderly with medically compromise is a worthwhile cause the patient in this case report is proven can be executed and the results are good and satisfactory.

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Conflict of Interest

The authors report no conflict of interest.

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