

CASE REPORT

A Comprehensive Approach to Geriatric Patient Care Based on Geriatric Assessment

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ABSTRACT

Background Care for geriatric patients must consider several factors. It is critical to thoroughly examine elderly patients to develop an ideal treatment plan for patients using a series of geriatric assessments. **Case report** The first patient was a 63-year-old male complaining of an open wound on several loose upper left teeth. It is suspected that he had undiagnosed diabetes mellitus. The second patient was a 70-year-old female having difficulty eating due to a loose upper left tooth with generalized enlarged gingiva. The patient had hypertension and was taking the medication without any supervision. A geriatric assessment was performed, which included the GOHAI (Geriatric Oral Health Assessment Index) examination, the Barthel Index of Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), Mini Nutritional Assessment (MNA), and Mini-Cognitive. The two patients consulted with the internist before receiving further treatment. **Conclusion** A comprehensive examination with Geriatric Assessment can help dentists determine the best treatment plan for geriatric patients.

Keywords: geriatric, geriatric assessment, comprehensive care, GOHAI

INTRODUCTION

Ageing is a natural process when a person experiences a gradual physical, mental, and social decline and can no longer carry out daily tasks.^{1,2} Geriatric patients are people aged sixty years and over with multiple diseases with or without disorders who require integrated health services with a multidisciplinary approach that works interdisciplinarily.³ Situations prevalent in older individuals, especially frail ones, are termed geriatric syndromes to demonstrate that the combined manifestations can be attributed to various factors.⁴

Diseases in the oral cavity in geriatric patients can harm their overall health and quality of life. Several conditions often occur in the oral cavity of geriatric patients, such as tooth loss, dry mouth, and periodontitis.² Operators must be able to reveal the underlying problem because it is often related to a wider range of conditions, for example, systemic conditions, polypharmacy, or their inability to express their problems due to the geriatric syndromes so they can have a good quality of life. Currently, publications regarding the use of geriatric assessment in dental and oral care have yet to be found.

This article reports two geriatric cases with features of geriatric syndrome that need to be carefully assessed so operators can provide optimum patient care while prioritizing the patient's quality of life and paying attention to the patient's systemic health. The geriatric assessment performed included the GOHAI (Geriatric Oral Health Assessment Index), the Barthel Index of Activities of Daily Living (ADL), Instrumental Activities of Daily Living (IADL), Mini Nutritional Assessment (MNA), and Mini-Cognitive. Both patients have consented to have their cases published.

CASE REPORT

Case 1

A 63-year-old male came to Universitas Gadjah Mada Prof. Soedomo Dental Hospital complaining of an open wound on the upper left gum, and the teeth had been loose since a month ago. He had no pain, swelling, or discharge from the area. About twelve years ago, his blood sugar level was checked at a pharmacy, which turned out to be higher than normal. He never had further examination or taken medication for this condition. A month ago, the patient's random blood glucose was 190mg/dL, and recently, the patient claimed to have lost weight. On arrival, the patient's blood pressure was 145/69 mmHg. The patient had cataract surgery in the right eye, but it still felt blurry and dry.

On intraoral examination, there was a single round ulceration, regular edges with clear borders with a diameter of 6 mm and covered by yellowish-white pseudomembrane appeared on the alveolar mucosa of the apex of tooth 26, exposing the root structure of the tooth. There was also buccal-palatal >1 mm mobility of the teeth with an accumulation of supragingival and subgingival calculus (Figure 1). A panoramic radiograph examination showed a generalized alveolar bone loss in a horizontal direction of about 2 – 5 mm with a well-defined radiolucent area of irregular shape at the apex of tooth 26, extended laterally to reach the alveolar crest involving the bifurcation area (Figure 2). A diagnosis of general chronic periodontitis with apical fenestration of tooth 26 was established.



Figure 1. Single round ulceration on the buccal mucosa involving deep chronic periodontitis exposing the root structure of the tooth 26

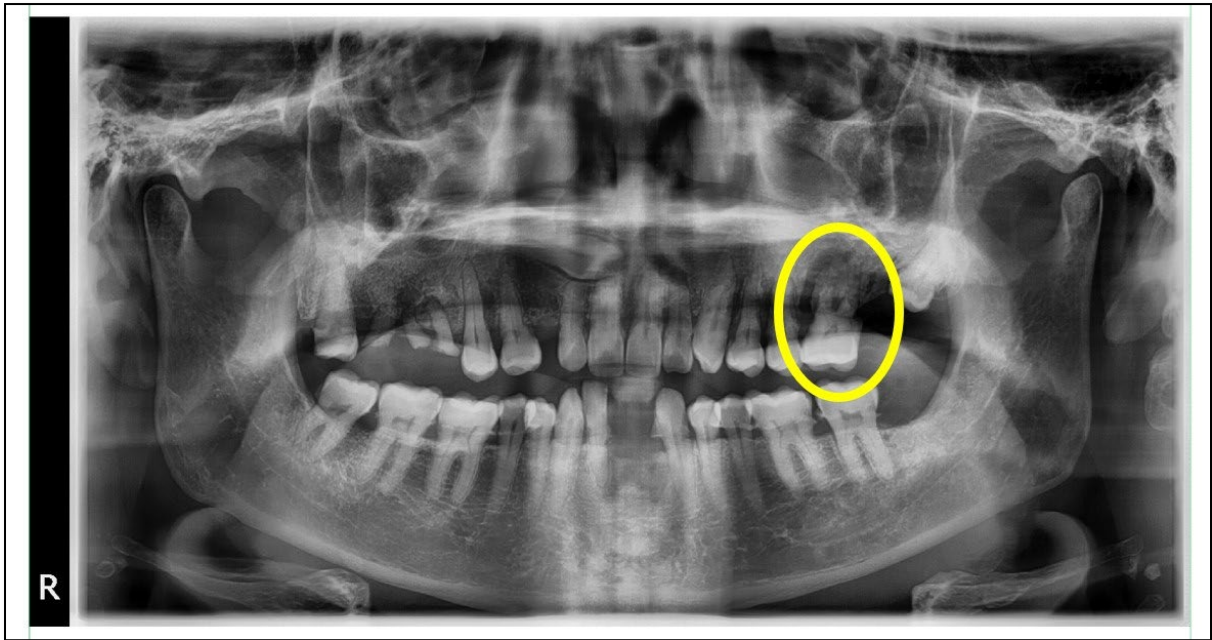


Figure 2. Panoramic radiograph showed a generalized bone loss and radiolucent area at the apex of tooth 6 (yellow marking)

The geriatric assessment was carried out with high GOHAI results; the patient could perform activities independently based on ADL and IADL indexes; the patient was at risk of malnutrition based on MNA; and negative dementia screening based on Mini-Cognitive test. From the GOHAI index, it was found that the patient had no problems chewing nor limiting the consumption of certain foods; he only experienced pain when exposed to hot, cold, or sweet. The patient was instructed to gargle with warm salt water and referred to an internist regarding the possibility of systemic disease to avoid complications before scaling, root planning, and tooth extraction 26.

The internist responded that the patient was diagnosed with stage I Hypertension and Diabetes Mellitus and was prescribed 5 mg amlodipine once daily and 5 mg metformin twice daily. Dental treatment could be performed if the blood pressure was less than or equal to 140/80 mmHg and the random blood sugar was less than 200 mg /dL. Until the last contact, the patient took the medication regularly but was still scheduled for the planned dental treatment.

Case 2

A 70-year-old female came to Universitas Gadjah Mada Prof. Soedomo Dental Hospital complaining that her upper left back tooth was loose. The tooth had interfered with her eating since three years ago. The condition was exacerbated when she was using a denture made by an unauthorized denture maker that attached the denture to the adjacent teeth, eventually damaging bit by bit, causing the tooth to loosen more severely. The patient admitted she was worried about making dentures again, and her gums seemed enlarged. The patient has had hypertension (blood pressure was 163/89 mmHg on arrival) for five years and regularly consumes Amlodipine 10 mg once daily on the recommendation of her relatives. The patient also complained of knee pain and took Methylprednisolone and Potassium diclofenac from a general practitioner.

On intraoral examination, there was a third-degree luxation in the buccal-palatal and vertical direction on tooth 25, multiple radices, abscess at the apex of radix 13, moderate Oral Hygiene Index (OHI), and general gingival enlargement on the upper and lower jaws. Palpation of the enlarged gingiva was firm with the same colour as the surrounding tissue, and it caused

the shifting of several teeth (Figure 3). A panoramic radiograph examination showed a radiolucent area with a diameter of 3 mm with clear boundaries at the apex of tooth 13 and a radiolucency with a diameter of 6 mm at the apex of tooth 25, as well as generalized alveolar bone loss (Figure 4).

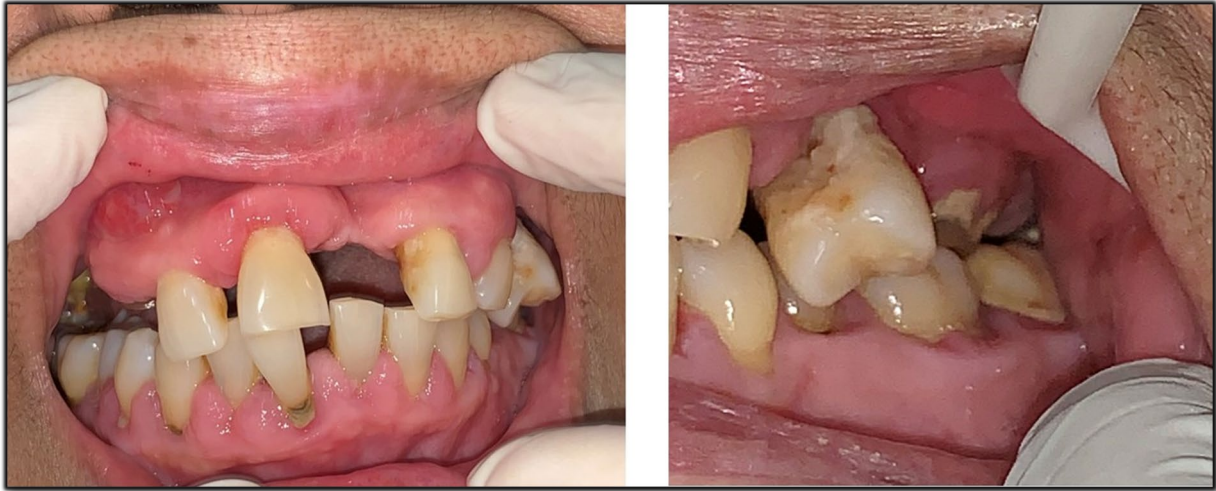


Figure 3. Luxation on tooth 25 and general gingival enlargement due to inflammation

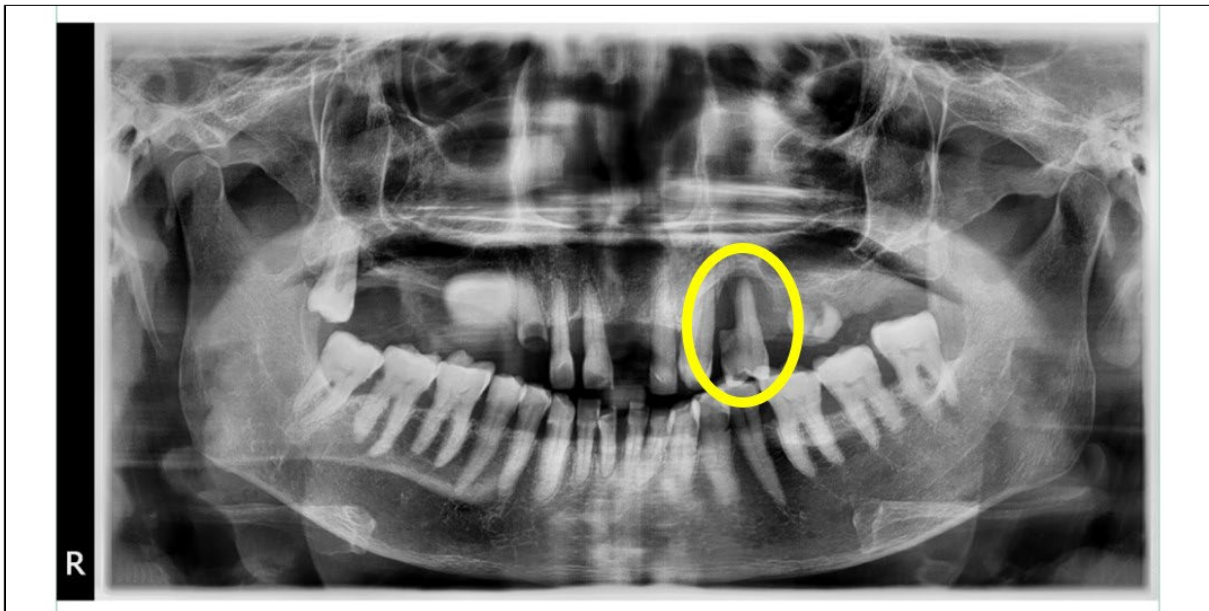


Figure 4. Panoramic radiograph showing radiolucent area at the apex of tooth 25, the yellow marking

A geriatric assessment was conducted with moderate GOHAI index results, mild dependence on ADL and IADL indexes, normal nutrition on MNA, and negative dementia screening on the Mini-cognitive test. From the results of the GOHAI index, it was found that the patient was not happy with the condition of her teeth now and had concerns about them. The patient had mild dependence that she needed help climbing stairs; she could not use the telephone and needed help washing her daily clothes. The patient was referred to an internist regarding her hypertension and the proper medication before scaling and root planning, extraction of the troublesome teeth, and making dentures. A gingivectomy was tentative regarding the gingival enlargement. Given the mild dependence on the patient, the following

dental and oral care for the patient was performed with operator assistance. The internist responded that the patient had stage II Hypertension and genu osteoarthritis. The internist prescribed Amlodipine 10 mg in the morning, Candesartan 8 mg in the evening, and Meloxicam 7.5 mg twice daily. Dental treatment could be performed only if the blood pressure is less than 140/80 mmHg. The patient was still on observation since the blood pressure was unstable.

DISCUSSION

Elderly people with geriatric syndromes have complexities that necessitate careful and detailed consideration. There are fourteen geriatric syndromes, often referred to as the 14 “I”s: immobility, instability, incontinence, intellectual impairment, infection, impairment of vision and hearing, irritable colon, isolation, inanition, impecunity, iatrogenesis, insomnia, immune deficiency, impotence.^{3,5}

Several signs of geriatric syndromes are similar in these two cases, consisting of infection, immune deficiency, impecunity, and risk of iatrogenesis. The signs of infection and immune deficiency in the first patient were general chronic periodontitis accompanied by apical fenestration on tooth 26, exacerbated by diabetes mellitus, which had not been treated for years. In the second patient, loss of many teeth and periapical pathosis were found. The sign of impecunity in the first patient was that he worked as a construction worker without health insurance, thus delaying medical check-ups. The second patient had a busy schedule of receiving orders for traditional snacks, which made it difficult to do a routine check-up. Iatrogenesis is one of the problems that arise from taking many medications. In the first patient, educating him about possible side effects from the medication that will be consumed routinely is necessary. In the second patient, consuming Amlodipine without supervision and moderate OHI influenced the appearance of gingival enlargement. The drug buildup in the gingival crevicular fluid in the presence of bacteria might lead to the activation of proinflammatory cytokines, resulting in gingival enlargement after long-term use (at least three months).^{6,7}

A geriatric assessment can examine in more detail the problems geriatric patients suffer. The geriatric assessment consisted of the GOHAI, ADL, IADL, MNA, and Mini-Cognitive instruments. The GOHAI instrument is available in Indonesia and has been used to assess oral health-related quality of life.⁸ GOHAI instrument was used to assess the quality of life of elderly patients related to the condition of their teeth and mouth to assess physical function dimensions, psychosocial functioning, pain or discomfort, and a feeling of discomfort in the teeth and mouth area.⁹ The higher the result, the better the patient’s oral health condition. The dentist can also examine the question points in the instrument. The first patient showed a high GOHAI index. However, the patient admitted to feeling tooth pain due to hot, cold, or sweet foods or drinks. The second patient showed a moderate GOHAI index. Thus, the operator had to examine further what conditions on the questions could be the sources of the dental problems.

ADL, IADL, MNA, and Mini-Cognitive instruments used were also available in the Indonesian version developed by The Ministry of Health (2017). The Barthel Index measures the basic Activities of Daily Living (ADL) functions, like dressing, bathing, and grooming self-care skills.¹¹ Geriatric patients should do the basic ADL independently to live well.¹² Instrument activities of daily living (IADL) are activity indicators that enable individuals to live independently in a community. If there are many limitations to performing ADLs and IADLs, it indicates the need for home healthcare or placing the patient in an integrated care facility.¹³ In the first case, the patient was highly capable and independent, while in the second case, the patient had mild dependence on climbing stairs and using the telephone. For the second patient, the operator can place the patient on the first-floor facility, use the elevator, follow up a visit by calling the patient instead of sending messages, or even visit the patient's house.

MNA is an instrument used to evaluate the geriatric patient's risk of malnutrition to facilitate nutritional interventions as early as possible.¹⁴ MNA instrument requires more time to complete, but it provides more comprehensive evaluations and measures, making it simpler to determine geriatric patients' nutritional status.¹⁵ In the first case, the patient was at risk of malnutrition because he had decreased food intake and lost weight 1 to 3 kg in the last three months. This finding correlated with the GOHAI index result that the patient had pain when eating hot, cold, and sweet foods, decreasing his appetite. While the second patient's nutritional status was normal, the operator could check the patient's daily dietary pattern to optimize the nutritional status.

The Mini-Cognitive is an effective neuropsychological test for detecting dementia patients.¹⁶ If dementia is detected in geriatric patients, operators can anticipate it by educating caregivers, bringing notes, and simplifying medication and care. In these two cases, both patients had a negative screening for dementia.

CONCLUSION

Dental and oral care for geriatric patients has complexities caused by multifactorial health conditions prevalent in older adults called Geriatric Syndromes. Hence, a comprehensive approach must be applied, such as using a Geriatric Assessment that includes GOHAI, ADL, IADL, MNA, and Mini-Cognitive examinations to analyze the sources of the complaints and develop effective treatment for the patients. Although delayed dental treatments had been anticipated in these two patients, comprehensive treatment planning had been addressed by dental caregivers.

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CONFLICT OF INTEREST

The authors declare no conflicts of interest related to this case report.

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