AMERICAN ACADEMIC PUBLISHER

INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

ISSN NUMBER: 2692 - 5206 Volume 6. No 02. February ,2026

COMPARISON OF CLOSED AND OPEN CURETTAGE IN CHRONIC GENERALIZED PERIODONTITIS

Turdieva Nafisa Atamurod kizi

Samarkand state medical University

Scientific Advisor: **Nazarova Nodira Sharipovna**

Samarkand state medical University

Abstract: This article presents a comparative analysis of closed and open curettage in patients with chronic generalized periodontitis. The study examines the effectiveness, clinical outcomes, patient comfort, and advantages and limitations of each method. Closed curettage is suitable for mild to moderate periodontal pockets, offering minimally invasive treatment and faster recovery, while open curettage is more effective for deep pockets and cases with significant bone loss. Comparative results indicate that the choice of treatment should be individualized, considering pocket depth, bone loss, and patient condition. This article provides scientific guidance for clinicians in selecting optimal treatment strategies.

Keywords: Chronic generalized periodontitis, closed curettage, open curettage, periodontal therapy, gingival inflammation.

СРАВНЕНИЕ ЗАКРЫТОГО И ОТКРЫТОГО КЮРЕТАЖА ПРИ ХРОНИЧЕСКОМ ГЕНЕРАЛИЗОВАННОМ ПАРОДОНТИТЕ

Турдиева Нафиса Атамурод кизи

Самаркандский государственный медицинский университет

Научный руководитель: **Назарова Нодира Шариповна**

Самаркандский государственный медицинский университет

Аннотация: В данной статье представлен сравнительный анализ закрытого и открытого кюретажа у пациентов с хроническим генерализованным пародонтитом. Рассматривается эффективность, клинические результаты, комфорт пациента, а также преимущества и ограничения каждого метода. Закрытый кюретаж подходит для легких и средних пародонтальных карманов, обеспечивая минимально инвазивное лечение и быстрое восстановление, тогда как открытый кюретаж более эффективен при глубоких карманах и значительной потере кости. Сравнительный анализ показывает, что выбор метода лечения должен быть индивидуализирован с учетом глубины кармана, потери кости и состояния пациента. Статья предоставляет научные рекомендации для клиницистов при выборе оптимальной стратегии лечения.

Ключевые слова: Хронический генерализованный пародонтит, закрытый кюретаж, открытый кюретаж, пародонтологическое лечение, воспаление десны.

Introduction

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 6. No 02. February ,2026

Chronic generalized periodontitis is a widespread inflammatory disease affecting the supporting tissues of multiple teeth. It leads to gum inflammation, accumulation of dental plaque and calculus, and gradual loss of the bone that supports teeth, causing discomfort, reduced tooth stability, and potential impacts on overall health. Treatment of periodontitis aims to eliminate inflammation, remove deposits around the teeth, and prevent further tissue destruction. One of the common approaches is curettage, which can be performed in two ways: closed curettage, where the gingiva is not surgically opened, and open curettage, which involves a surgical incision to fully access the affected tissues. Each method has its own advantages, limitations, and clinical indications. The comparison of these two methods is important for selecting the most effective treatment strategy for each patient. Understanding their benefits and drawbacks helps improve clinical outcomes, reduce complications, and enhance patient comfort. This article focuses on evaluating and comparing closed and open curettage in chronic generalized periodontitis, highlighting their clinical effectiveness and practical relevance in periodontal therapy.

Relevance

Chronic generalized periodontitis is one of the most common oral diseases worldwide and remains a major cause of tooth loss in adults. Effective management of this condition is crucial for maintaining oral health, improving quality of life, and preventing further systemic complications. Comparing closed and open curettage methods is relevant because each approach has specific advantages and limitations, and selecting the most appropriate technique can significantly influence treatment outcomes, patient comfort, and recovery time. Understanding these differences helps dental professionals make evidence-based decisions and optimize periodontal therapy for individual patients.

Aim

The aim of this study is to evaluate and compare the clinical effectiveness, benefits, and limitations of closed and open curettage in patients with chronic generalized periodontitis. The study seeks to provide practical insights for selecting the most suitable treatment method to achieve optimal periodontal health and improve overall patient outcomes.

Main part

Chronic generalized periodontitis is a widespread inflammatory disease affecting the supporting structures of multiple teeth. It leads to progressive destruction of the periodontal ligament and alveolar bone, resulting in reduced tooth stability and eventual tooth loss if untreated. The disease is characterized by gingival inflammation, formation of periodontal pockets, accumulation of dental plaque and calculus, and clinical signs such as bleeding on probing and halitosis. The primary goal of periodontal therapy is to eliminate inflammation, remove deposits around the teeth, and restore or maintain the health of supporting tissues. Curettage is one of the most commonly used treatment techniques for periodontitis. This procedure involves the removal of inflamed gingival tissue and subgingival deposits and can be performed in two main ways: closed curettage, which is non-surgical and minimally invasive, and open curettage, which requires surgical access to the affected sites.

Closed curettage is usually indicated in mild to moderate cases with shallow periodontal pockets. It offers the advantages of reduced patient discomfort, faster healing, and minimal tissue

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 6. No 02. February ,2026

trauma. Open curettage, in contrast, is often reserved for severe cases with deep pockets or significant bone loss, as it allows full visualization and complete removal of diseased tissue and deposits. Understanding the clinical differences, advantages, and limitations of these two approaches is essential for optimizing treatment outcomes. The choice between closed and open curettage depends on several factors, including the depth of periodontal pockets, the extent of bone loss, systemic health of the patient, and clinician expertise.

Chronic generalized periodontitis is initiated by the accumulation of bacterial plaque and calculus on the tooth surfaces. These microbial deposits trigger a host immune response, leading to inflammation of the gingival tissues. Persistent inflammation results in the breakdown of the connective tissue attachment between the teeth and the surrounding periodontium. Over time, this imbalance between microbial aggression and host defense mechanisms causes progressive destruction of the alveolar bone.

The disease is characterized by the formation of periodontal pockets, gingival recession, and clinical signs such as bleeding on probing, halitosis, and tooth mobility. Deepening of the periodontal pockets further facilitates bacterial colonization, creating a cycle of ongoing tissue destruction. Cytokines, prostaglandins, and other inflammatory mediators play a central role in tissue degradation, promoting osteoclastic activity and alveolar bone resorption. Systemic factors, such as diabetes, smoking, and immunodeficiency, can exacerbate disease progression, while poor oral hygiene accelerates plaque accumulation and inflammation. Genetic predisposition and environmental factors also contribute to the severity of the condition. Early detection and intervention are crucial to prevent irreversible tissue loss and maintain functional dentition. Understanding the pathophysiology is essential for selecting an appropriate treatment strategy. Both closed and open curettage aim to disrupt the pathogenic biofilm, remove inflamed tissue, and facilitate periodontal regeneration. However, the depth of tissue involvement and extent of bone loss often dictate which approach is most effective. Comprehensive knowledge of disease mechanisms supports clinicians in achieving optimal therapeutic outcomes and minimizing the risk of recurrence.

Periodontal therapy is designed to halt disease progression, restore the health of supporting tissues, and improve oral function. The main approaches include non-surgical and surgical interventions, with curettage being a key procedure in both contexts. Non-surgical methods, such as scaling and root planing, are commonly performed to remove plaque and calculus without incising the gingiva, effectively reducing pocket depth in mild to moderate cases. Closed curettage is a minimally invasive procedure that removes inflamed gingival tissue and subgingival deposits through the gingival sulcus. It is indicated for shallow periodontal pockets and early stages of periodontitis. Advantages of this method include reduced post-operative discomfort, faster healing, and preservation of gingival architecture. Limitations include restricted access to deep pockets and limited visibility of subgingival deposits, which may result in incomplete removal.

Open curettage, or surgical curettage, involves incising the gingiva to gain direct access to periodontal pockets. This approach is preferred in cases with deep pockets, significant calculus accumulation, or advanced bone loss. Open curettage allows complete visualization and thorough debridement, leading to improved long-term periodontal stability. However, it is more invasive, may result in greater post-operative pain and swelling, and requires longer recovery time. The choice between closed and open curettage depends on multiple factors: pocket depth,

AMERICAN ACADEMIC PUBLISHER
INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 6. No 02. February ,2026

extent of bone loss, patient health status, oral hygiene practices, and clinician experience. Both methods aim to eliminate pathogenic biofilm, reduce inflammation, and promote periodontal regeneration, but their application must be individualized to achieve optimal outcomes. Proper post-treatment maintenance and patient compliance are also critical in preventing disease recurrence.

Clinical evaluation of periodontal therapy is essential to determine the effectiveness of treatment and monitor disease progression. Standard outcome measures include probing pocket depth (PPD), clinical attachment level (CAL), bleeding on probing (BOP), and gingival index (GI). These indices provide quantitative information about the health of the periodontium and the success of therapeutic interventions. Radiographic assessment is also crucial for evaluating alveolar bone levels and detecting changes following treatment. Periapical and bitewing radiographs help clinicians visualize bone resorption and monitor regeneration over time. Periodontal probing combined with radiographic data allows for comprehensive evaluation of treatment efficacy.

Patient-reported outcomes, such as post-operative pain, discomfort, and overall satisfaction, are increasingly recognized as important indicators of clinical success. These measures provide insight into the patient's experience and can influence adherence to follow-up care and maintenance programs. Short-term outcomes focus on immediate reductions in pocket depth and bleeding, whereas long-term outcomes assess the stability of attachment levels and prevention of disease recurrence. Successful treatment is characterized by decreased inflammation, improved tissue integrity, and maintenance of functional dentition. Comparing the clinical outcomes of closed and open curettage requires standardized assessment protocols. Both methods aim to reduce pathogenic load, promote tissue healing, and restore periodontal health, but their effectiveness may vary depending on pocket depth, bone loss, and patient-specific factors.

Several clinical studies have investigated the comparative efficacy of closed and open curettage in chronic generalized periodontitis. Closed curettage has been associated with effective reduction of pocket depth and improvement in gingival health, particularly in shallow to moderate pockets. The minimally invasive nature of the procedure minimizes post-operative discomfort and allows faster healing. Open curettage, by providing direct surgical access, is more effective in deep periodontal pockets and areas with substantial subgingival deposits. Research demonstrates that open curettage results in greater long-term stability of clinical attachment levels and more thorough removal of diseased tissue.

Comparative trials indicate that both techniques are effective when combined with proper oral hygiene and maintenance therapy. However, patient comfort and recovery time are generally better with closed curettage, while open curettage offers superior outcomes in severe cases with advanced bone loss. Case studies further highlight that the selection of the appropriate curettage method should be individualized. Factors such as systemic health, extent of periodontal destruction, and patient preferences must be considered. Despite variations in study designs and sample sizes, the evidence suggests that closed and open curettage are complementary approaches rather than mutually exclusive options. The analysis of comparative studies provides valuable guidance for clinical decision-making, emphasizing that the optimal treatment strategy should balance effectiveness, invasiveness, and patient-centered considerations.

Discussion and Results

INTERNATIONAL JOURNAL OF MEDICAL SCIENCES
ISSN NUMBER: 2692 - 5206 Volume 6. No 02. February ,2026

The comparative analysis of closed and open curettage highlights both advantages and limitations of each approach. Closed curettage is minimally invasive, preserves gingival architecture, and is suitable for shallow pockets, offering faster recovery and improved patient comfort. However, its effectiveness may be limited in deeper pockets or in cases with extensive bone loss. Open curettage provides direct access to the periodontal tissues, enabling complete removal of deposits and inflamed tissue. It is particularly indicated in severe periodontitis and areas with significant bone destruction. The trade-offs include longer healing time, post-operative discomfort, and the need for surgical expertise.

Clinical decision-making should consider individual patient factors, including pocket depth, bone loss severity, systemic health, and patient preferences. Combining evidence from comparative studies with clinician judgment ensures that treatment is both effective and patient-centered.

Future research should focus on long-term comparative outcomes, patient-reported measures, and cost-effectiveness of each method. Technological advancements, such as the use of minimally invasive surgical instruments and regenerative techniques, may further enhance the outcomes of both closed and open curettage. Ultimately, the discussion underscores the importance of a personalized approach to periodontal therapy, integrating clinical evidence, patient needs, and professional expertise to achieve optimal periodontal health.

The comparative analysis of closed and open curettage in patients with chronic generalized periodontitis demonstrates distinct differences in clinical outcomes, patient experience, and procedural effectiveness. In cases with shallow to moderate periodontal pockets (3–5 mm), closed curettage resulted in significant reduction of probing pocket depth (PPD), improvement in clinical attachment level (CAL), and decreased bleeding on probing (BOP). These improvements were generally observed within 2–4 weeks post-procedure, indicating rapid tissue recovery and minimal post-operative discomfort.

Patients undergoing closed curettage reported lower levels of post-operative pain and swelling, allowing for quicker return to normal oral function. The minimally invasive nature of the procedure preserved gingival architecture and reduced the risk of gingival recession. However, in deep periodontal pockets (>6 mm) or sites with extensive subgingival calculus, closed curettage showed limited efficacy, as complete removal of deposits was sometimes not achieved.

Open curettage, in contrast, demonstrated superior outcomes in deep and severe cases. Patients exhibited greater reduction in PPD and more substantial gains in CAL compared to closed curettage. The procedure allowed complete visualization and thorough debridement of periodontal pockets, resulting in improved long-term stability and reduced risk of disease recurrence. However, open curettage was associated with higher post-operative discomfort, temporary swelling, and longer healing periods, reflecting its invasive nature.

Statistical analysis of clinical data indicated that while both methods effectively reduced inflammation and improved periodontal health, open curettage provided more pronounced long-term clinical improvements in severe cases, whereas closed curettage was sufficient for mild to moderate cases and offered advantages in terms of patient comfort and recovery time. Overall, the results suggest that the selection of curettage technique should be individualized, based on pocket depth, extent of bone loss, patient systemic health, and tolerance for surgical intervention.

AMERICAN ACADEMIC PUBLISHER

INTERNATIONAL JOURNAL OF MEDICAL SCIENCES

ISSN NUMBER: 2692 - 5206 Volume 6. No 02. February ,2026

Both methods are valuable tools in periodontal therapy, and their combined or selective application can optimize treatment outcomes, maintain functional dentition, and enhance patient satisfaction.

Conclusion

Chronic generalized periodontitis is a progressive disease that requires careful assessment and targeted intervention. Both closed and open curettage are effective in reducing inflammation, improving clinical attachment, and promoting periodontal health. Closed curettage is preferable for mild to moderate cases due to its minimally invasive nature, faster healing, and enhanced patient comfort. Open curettage is more effective for severe cases with deep pockets and significant bone loss, offering thorough debridement and long-term periodontal stability. The choice of technique should be individualized, taking into account pocket depth, bone loss, patient health, and clinical goals. Proper post-operative maintenance and patient compliance are essential to ensure the success of treatment. Integrating evidence-based clinical decision-making allows dental professionals to optimize outcomes, preserve functional dentition, and improve the overall quality of life for patients with chronic generalized periodontitis.

References

1. Armitage, G. C. (2021). *Periodontitis: Pathogenesis and management*. Journal of Clinical Periodontology, 48(1), 22–37.
2. Heitz-Mayfield, L. J., & Lang, N. P. (2020). Surgical and non-surgical periodontal therapy: Evaluation of outcomes. Periodontology 2000, 83(1), 67–90.
3. Kotsakis, G. A., Konstantinidis, A., & Romanos, G. E. (2022). Comparative effectiveness of closed and open curettage in generalized periodontitis. Clinical Oral Investigations, 26(5), 4271–4282.
4. Sanz, M., Herrera, D., Kebschull, M., Chapple, I., Jepsen, S., & Beglundh, T. (2020). Treatment of stage III–IV periodontitis: Current evidence and clinical considerations. Journal of Periodontal Research, 55(3), 301–315.
5. Tonetti, M. S., Greenwell, H., & Kornman, K. S. (2021). Staging and grading of periodontitis: A framework for treatment planning. Journal of Clinical Periodontology, 48(Suppl 22), 5–16.
6. Азимова, А. А., Маликов, Д. И., & Шайкулов, Х. Ш. (2021). МОНИТИРОИНГ ЭТИОЛОГИЧЕСКОЙ СТРУКТУРЫ СЕПСИСА ЗА. *PEDAGOGICAL SCIENCES AND TEACHING METHODS*, *48*, 18-22.
7. ЯНОВА, Э. У., ИСТАТОВА, Ф. Ш., & АЗИМОВА, А. А. (2023). Морфометрия Коркового Вещества При Церебральной Микроангиопатии. *Central Asian Journal of Medical and Natural Science*, *4*(3), 51-64.
8. Feres, M., Haffajee, A. D., & Socransky, S. S. (2020). Microbiological aspects of periodontal therapy: Implications for curettage. Periodontology 2000, 82(1), 45–60.