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REVIEWER'S REPORT

Manuscript No.: IJAR-52628 Date: 05/07/2025

Title: MANAGEMENT OF MILLER'S CLASS II GINGIVAL RECESSION USING CORONALLY ADVANCED FLAP WITH DE-EPITHELIALIZED FREE GINGIVAL GRAFT: A CASE REPORT.

Recommendation:

Accept as it is .....

Accept after minor revision...Yes.....

Accept after major revision .....

Do not accept (*Reasons below*) .....

Rating	Excel.	Good	Fair	Poor
Originality	•			
Techn. Quality	•			
Clarity	•			
Significance	•			

Reviewer Name: Dr. Sireesha Kuruganti **Date:** 05/07/2025

Reviewer's Comment for Publication.

(*To be published with the manuscript in the journal*)

The reviewer is requested to provide a brief comment (3-4 lines) highlighting the significance, strengths, or key insights of the manuscript. This comment will be Displayed in the journal publication alongside with the reviewers name.

This is a well-documented case report that clearly demonstrates the successful management of Miller's Class II gingival recession using CAF with DFGG.

Detailed Reviewer's Report

Here's a detailed in-depth review of the manuscript, with line numbers for reference:

The manuscript, "MANAGEMENT OF MILLER'S CLASS II GINGIVAL RECESSION USING CORONALLY ADVANCED FLAP WITH DE-EPITHELIALIZED FREE GINGIVAL GRAFT: A CASE REPORT," presents a relevant clinical case in periodontology. The chosen topic addresses a common and often challenging condition, and the described technique appears promising. However, several areas could be improved for clarity, scientific rigor, and adherence to standard reporting guidelines for case reports.

General Comments:

* Clarity and Flow: While the manuscript is generally understandable, some sentences could be rephrased for better flow and conciseness.

* Consistency in Terminology: Ensure consistent use of terms throughout the manuscript. For instance, sometimes "connective tissue graft (CTG)" is used, and other times "de-epithelialized free gingival graft (DFGG)" is used interchangeably with CTG, which can be confusing given DFGG is a type of CTG.

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* Image Quality and Labeling: The images are crucial for a case report. While they are present, clearer labeling within the figures themselves (e.g., arrows pointing to specific features, measurements) would be highly beneficial. The figure captions are also very brief and could be more descriptive.
* Discussion Depth: The discussion section is somewhat brief and could delve deeper into the implications of the findings, comparisons with other studies, and potential limitations of the technique or the case itself.

Specific Comments by Section (with line numbers):

Page 1:

* Title (Line 1): The title is clear and accurately reflects the content.
* Abstract (Lines 2-6):
  * The abstract provides a good summary of the case report.
  * Line 3: "This case report describes the treatment of a Miller's Class II gingival recession defect..." is good.
  * Line 6: "At 3 months follow-up substantial root coverage was observed along with resolution of hypersensitivity." This is a key outcome and well-stated.
* Introduction (Lines 7-15):
  * Line 8: "Gingival recession is the displacement of the soft tissue margin apical to the cemento-enamel junction, which leads to root surface exposure to the oral environment." This definition is accurate.
  * Line 9: "Marginal tissue recession is associated with thermal and tactile sensitivity, esthetic complaints, and a tendency toward root caries." This comprehensively lists the problems associated with recession.
  * Line 10: "Among the many techniques developed for root coverage, the coronally advanced flap (CAF) combined with a connective tissue graft (CTG) is widely recognized as the gold standard for treating buccal gingival recessions classified as Miller Class I or II, based on predictable and favorable clinical results [1]." This provides excellent context and cites the gold standard.
  * Lines 11-12: "Subepithelial connective tissue grafts (SCTG) present several drawbacks, such as increased patient discomfort, longer surgical time, technical sensitivity, and the potential for palatal tissue sloughing. To address these limitations, Zucchelli et al., introduced the de-epithelialized free gingival graft (DFGG), which is de-epithelialized outside the oral cavity." This effectively justifies the use of DFGG by highlighting SCTG drawbacks and the introduction of DFGG.
  * Line 14: "Tavelli et al., in a recent meta-analysis, found that using DFGG with CAF yielded superior root coverage compared to SCTG, and advocated for DFGG as a reliable technique for CTG harvesting [3]." This provides strong evidence supporting the DFGG technique.
  * Line 15: "The aim of this case report is to describe the surgical management of a of a Miller's Class II gingival recession in the mandibular anterior region using a coronally advanced flap (CAF) with a de-epithelialized free gingival graft (DFGG), and to assess its effectiveness in achieving root coverage." The aim is clearly stated.

Page 2:

* Case Report (Lines 17-26):
  * Lines 17-18: "A 39-year-old male patient reported to the Outpatient Department of Dr. R. Ahmed Dental College and Hospital with the chief complaint of sensitivity in a lower anterior tooth when consuming hot or cold food. The patient was a non-smoker and had no history of systemic illness." Detailed patient history is well-documented.
  * Line 19: "On clinical examination, gingival recession extending to the mucogingival junction was observed on teeth #31 and #33(Figure 1)." Clear description of clinical findings.
  * Lines 20-21: "Due to the patient's complaint of pronounced hypersensitivity in relation to tooth #31, treatment was initially planned and carried out for this tooth. This case report focuses on the surgical management of tooth #31." This clarifies the specific tooth for the case report.
  * Line 22: "Vitality tests confirmed that the tooth was vital." Important diagnostic information.

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* Line 23: "Probing pocket depth of #31 was 2mm, Clinical attachment loss was 9mm and recession depth (CAL-PPD) was 7mm on the buccal aspect (Figures 2 & 3)." Precise measurements are provided, which is excellent.

* Line 24: "Radiographic evaluation revealed no signs of interdental alveolar bone loss in relation to #31." Crucial for Miller's Class II diagnosis.

* Line 25: "Based on these clinical and radiographic findings, the case was diagnosed as Miller's Class II gingival recession in relation to tooth #31 (Figure 4)." The diagnosis is well-supported.

* Figures 1, 2, 3: The figures are appropriately placed. However, Figure 1 (Preoperative view) could benefit from arrows or clear markers pointing to the specific recession area. Figures 2 and 3 show probing depth and recession depth, which are valuable.

Page 3:

* Treatment Plan (Lines 27-32):

* Lines 28-29: "It involved an initial phase of cause-related therapy, which included thorough oral hygiene instructions, supragingival and subgingival scaling, and reinforcement of proper brushing techniques to eliminate contributing factors. Once adequate plaque control was achieved and gingival inflammation was resolved, the surgical phase was initiated." This sequential approach to treatment is appropriate and well-described.

* Lines 30-31: "The selected surgical approach for managing the gingival recession in relation to tooth #31 was a coronally advanced flap (CAF) in conjunction with a de-epithelialized free gingival graft (DFGG). This technique was chosen due to its predictability and effectiveness in achieving root coverage, particularly in Miller's Class II defects." The rationale for the chosen technique is clearly articulated.

* Line 32: "Prior to the surgical procedure, informed consent was obtained from the patient after explaining the nature, benefits, and potential risks of the treatment." Ethical considerations are addressed.

* Surgical Technique (Lines 33-37):

* Line 33: "The surgical technique for gingival recession coverage was a trapezoidal-type of CAF [4], fully covering a CTG obtained by means of de-epithelialization of a free gingival graft [2]." Specific technique and references are given.

* Lines 34-35: "Under local anaesthesia, two horizontal incisions were made on the mesial and distal sides of the gingival recession (GR), followed by two beveled oblique slightly diverging incisions extending into the alveolar mucosa using #15c blade (Figure 5)." Detailed description of incisions.

* Line 35: "A trapezoidal flap was then elevated using a "split-full-split" technique (Figure 6)." The flap elevation technique is specified.

* Line 36: "The natural interdental papillae were de-epithelialized to create connective tissue beds for the placement and suturing of the surgical papillae." This step is crucial for graft integration.

* Figures 4, 5, 6: Figure 4 shows the radiograph, which is good. Figures 5 and 6 depict the incisions and flap elevation respectively, which are very helpful for understanding the surgical steps.

Page 4:

* Graft Harvesting (Lines 38-42):

* Lines 38-39: "The free gingival graft (FGG) was harvested from the palate following the technique described by Zucchelli et al. [2], using two horizontal and two vertical incisions to define the graft boundaries, with the coronal horizontal incision as the starting point." This provides specific details on graft harvesting and cites the source.

* Lines 40-41: "Initially, the blade was positioned perpendicular to the palatal surface, and once the desired soft tissue thickness was reached, it was angled to run nearly parallel to the surface. After the graft was removed, adipose tissue was carefully trimmed away." Excellent detail on the blade angulation and graft preparation.

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* Line 42: "The graft was de-epithelialized extraorally using a #15C blade and trimmed to an approximate thickness of 1 mm (Figure 7)." Important specifics on de-epithelialization and graft thickness.

* Graft Placement and Suturing (Lines 43-46):

* Lines 43-44: "Following mechanical debridement of the exposed root surface using a Mini-Five® Gracey curette (GDC Dental, India), the connective tissue graft (CTG) was placed at the level of the cementoenamel junction (CEJ) and secured to the de-epithelialized papillae with single interrupted sutures using 5-0 resorbable suture material (Truglyde®, Healthium Medtech Limited, India)." Clear description of root preparation, graft placement, and suturing material.

* Line 44: "The flap was then repositioned to lie at least 1 mm coronal to the CEJ [5] (Figure8)." Specific positioning of the flap is noted.

* Lines 45-46: "Suturing began with two apical interrupted periosteal sutures, securing the flap to the surrounding soft tissue using 5-0 resorbable sutures. The suturing then progressed in a coronal direction, with a final sling suture applied to ensure proper stabilization and adaptation of the flap (Figure-9)." Comprehensive explanation of the suturing technique.

* Figures 7, 8, 9: These figures are highly illustrative of the DFGG preparation, graft placement, and final suturing, which are critical details for a case report.

Page 5:

* Post-operative Care and Follow-up (Lines 48-55):

* Line 48: "Post-operative systemic antibiotics were prescribed for 7 days and anaelgesics were prescribed for 5 days." Standard post-operative medication is mentioned.

* Line 49: "Patients were advised to avoid brushing the treated area and instead rinse twice daily for one minute with a 0.2% chlorhexidine solution." Good detail on oral hygiene instructions.

* Line 50: "Sutures were removed after 14 days and then patients were instructed to gently brush the operated area with a soft tooth brush using roll technique (Figure 10) [2]." Important information on suture removal and resumption of brushing.

* Line 51: "Patient was recalled at Imonth and then at 3 months after surgery." Follow-up schedule is stated.

* Line 52: "At 3 months a gain of 5 mm in clinical attachment level was recorded." Quantitative outcome is provided.

* Line 53: "The baseline recession depth was 7 mm, and at 3 months remainder recession depth was 2mm, resulting in root coverage upto 71% (Figure 11)." Clear calculation of root coverage percentage.

* Line 54: "The width of keratinized tissue at the treated site was increased to 3mm." Another positive outcome.

* Line 55: "Additionally, patient did not complain of hypersensitivity in the surgically treated tooth." Resolution of the chief complaint is significant.

* Figures 10, 11: These figures effectively show the post-suture removal and the 3-month follow-up, visually demonstrating the root coverage.

* Discussion (Lines 56-65):

* Lines 57-58: "One such advancement is the de-epithelialized free gingival graft (DFGG) technique, proposed by Zucchelli et al. [2], which offers several advantages over the conventional subepithelial connective tissue graft (SCTG)." Good reiteration of DFGG's benefits.

* Lines 59-60: "The DFGG is characterized by its increased density, firmness, and dimensional stability, features that contribute to improved handling and potentially better clinical performance during root coverage procedures [6]." This explains why DFGG is advantageous.

* Lines 60-61: "Despite the potential risk of inadvertently including epithelial remnants within the graft during DFGG harvesting, a human histological study revealed that such remnants were present in approximately 80% of CTG samples and did not negatively impact the success of root coverage [7]." This addresses a potential concern and provides evidence to allay it.

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* Line 61: "In this study we achieved recession coverage of 71.4% using CAF with DFGG." States the main finding clearly.
* Line 62: "However, in previous study by Mashley et al, it was seen that 96.4% root coverage was achieved at 6 month follow up [8]." This is a good point of comparison, but the discussion could elaborate on why there might be a difference (e.g., patient factors, longer follow-up in the other study).
* Line 63: "In addition to this, an increase in keratinized tissue width upto 3mm was also observed which was consistent with the previous studies by Zucchelli et al. [2]" Consistency with literature adds strength to the findings.
* Lines 64-65: "Zucchelli et al. also reported inferior outcomes when the labial submucosal tissue at the recipient site was not removed, with mean root coverage dropping to 48% compared to 88% when it was excised, highlighting the importance of proper recipient site preparation for optimal results with DFGG [9]." This provides valuable insight into a critical surgical detail influencing outcomes.

Page 6:

* Discussion (Cont.) (Lines 66-69):
* Lines 66-67: "Another important consideration in the evaluation of root coverage outcomes is the phenomenon of creeping attachment, defined as the gradual coronal migration of the gingival margin over a previously exposed root surface following surgical root coverage procedures. This biological process typically occurs within the first 6 to 12 months postoperatively and can contribute to improved esthetic and clinical outcomes over time." Excellent explanation of creeping attachment.
* Line 68: "Although this study reported 71.4% root coverage at 6 months, it is possible that additional coronal tissue migration may occur beyond this period, potentially enhancing the final result." This is a crucial point regarding the 3-month follow-up limitation.
* Line 69: "Long-term follow-up may provide further insights into the potential for achieving complete root coverage and sustained soft tissue stability with the DFGG technique." A very appropriate recommendation for future research.

* Conclusion (Lines 70-73):
* Lines 70-71: "Within the limitations of this study, it can be concluded that the use of a de-epithelialized free gingival graft (DFGG) in combination with a coronally advanced flap (CAF) is a reliable and effective technique for the treatment of Miller's Class II gingival recession." The conclusion is well-stated and acknowledges limitations.
* Line 71: "This approach resulted in significant improvements in clinical parameters, including increased keratinized tissue width, along with root coverage of 71.4% at 3 months as well as resolution of hypersensitivity." Summarizes the key positive outcomes.
* Line 72: "These outcomes support the clinical applicability of the DFGG technique as a viable alternative to conventional subepithelial connective tissue grafts." Reinforces the technique's utility.
* Line 73: "Further studies with larger sample sizes and extended follow-up periods are recommended to validate these findings and assess long-term stability." A sound recommendation for broader validation.

Page 7:

* References (Lines 75-92):
* The references are well-formatted and relevant to the content discussed. Each citation within the text correctly corresponds to a reference in this section.

Recommendations for Improvement:

* Strengthen Discussion:
* Elaborate on the differences in root coverage percentages observed between this case (71.4% at 3 months) and Mashaly et al. (96.4% at 6 months). Discuss potential reasons such as individual patient healing, recession depth differences, operator experience, or the longer follow-up period in Mashaly et al.'s study.

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* Consider discussing any minor complications or challenges encountered during the procedure or post-operative period, even if successfully managed, as this adds to the report's completeness.

* While the limitation of a single case report is implicitly understood, explicitly state it in the discussion as a formal limitation.

* Enhance Figures:

* Add more specific labels or arrows within the figures to highlight key features, such as the mucogingival junction, CEJ, recession defect, flap margins, and graft placement.

* Make figure captions more descriptive, explaining what each image shows in detail, rather than just "Preoperative view." For example, "Figure 1: Preoperative view of the mandibular anterior region showing Miller's Class II gingival recession on teeth #31 and #33."

* Future Directions: While already mentioned in the conclusion, the discussion could briefly touch upon how future research might refine the DFGG technique or explore its application in other types of recession defects.

Overall, this is a well-documented case report that clearly demonstrates the successful management of Miller's Class II gingival recession using CAF with DFGG. Addressing the suggested improvements would further enhance its scientific value and impact.