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Esthetic Management of Altered Passive Eruption With Gingivectomy and Gingivoplasty During Orthodontic Treatment: A Case Report

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Abstract

Altered passive eruption (APE) is a condition in which the gingival margin remains positioned coronally over the anatomical crown after tooth eruption, resulting in excessive gingival coverage and reduced visible clinical crown height. This condition can compromise smile esthetics by producing unfavorable tooth to gingiva proportions. This case report describes the multidisciplinary management of a 25-year-old female patient who presented seeking improvement in the appearance of her smile. The patient was classified as American Society of Anesthesiologists (ASA) physical status I and reported no known allergies. Clinical examination revealed excessive gingival coverage of the anterior clinical crowns, reduced apparent clinical crown height, and irregular gingival margins, with findings considered consistent with APE in association with dental malalignment. A treatment plan combining fixed orthodontic therapy with gingivectomy and gingivoplasty was developed to improve dental alignment and gingival architecture. Orthodontic treatment was performed for approximately 18 months. During the final stage of orthodontic therapy, approximately two months before the removal of the fixed appliances, gingivectomy and gingivoplasty were performed under local anesthesia to remove excess gingival tissue and establish a more harmonious gingival contour. Healing was monitored clinically, and at the one-month postoperative evaluation, favorable soft tissue healing, increased clinical crown exposure, and improved gingival symmetry were observed. Orthodontic treatment was subsequently completed. The final clinical appearance demonstrated improved dental alignment, clinical crown proportions, and gingival architecture, resulting in an esthetic outcome that was satisfactory to the patient. This case illustrates the clinical integration of orthodontic treatment with gingivectomy and gingivoplasty for the esthetic management of findings consistent with APE in a young adult patient.

Categories: Other, Oral Medicine, Dentistry
Keywords: altered passive eruption, clinical crown, esthetic dentistry, gingival architecture, gingival recontouring, gingivectomy, gingivoplasty, orthodontic treatment, periodontal surgery, smile esthetics

Introduction

Smile esthetics is influenced by the relationship among the teeth, lips, and surrounding gingival tissues, and excessive gingival display or reduced clinical crown height can alter tooth proportions and affect the overall appearance of the smile [1,2]. Altered passive eruption (APE) is a clinical condition characterized by the persistence of the gingival margin in a position coronal to the cementoenamel junction (CEJ) after tooth eruption, resulting in excessive gingival coverage of the anatomical crown and reduced visible clinical crown height [3]. The anatomical crown represents the portion of the tooth covered by enamel, whereas the clinical crown refers to the portion visible above the gingival margin.

Accurate diagnosis of APE requires evaluation of the relationship among the gingival margin, CEJ, and alveolar crest, as well as consideration of other potential causes of excessive gingival display [4]. The CEJ represents the junction between the enamel and cementum, while the alveolar crest is the most coronal portion of the supporting alveolar bone. APE may be classified according to the relationship between the gingival margin, mucogingival junction, CEJ, and alveolar crest. This classification helps determine whether soft tissue recontouring alone is appropriate or whether additional osseous correction may be necessary. Differential diagnosis should also consider other potential causes of excessive gingival display, including gingival enlargement, altered tooth eruption, vertical maxillary excess, and upper lip-related factors. Depending on the periodontal anatomy and clinical presentation, treatment may range from soft tissue procedures, including gingivectomy and gingivoplasty, to periodontal surgical approaches incorporating osseous recontouring [4,5].

When dental malalignment is also present, coordination between orthodontic tooth positioning and periodontal soft tissue management may be beneficial because both tooth position and gingival architecture contribute to the final esthetic outcome. This interdisciplinary approach allows periodontal recontouring to be coordinated with changes in tooth position achieved during orthodontic therapy [6]. The timing of

periodontal intervention should be individualized according to the patient's clinical presentation, orthodontic treatment objectives, and periodontal anatomy.

This case report describes the multidisciplinary management of a 25-year-old female patient presenting with dental malalignment and clinical findings consistent with APE. The diagnosis was based primarily on clinical observations of excessive gingival coverage, reduced apparent clinical crown height, and irregular gingival margins. However, standardized periodontal measurements, documentation of the CEJ position, bone-sounding measurements, and specific radiographic findings were not available, limiting definitive anatomical classification. The rationale for presenting this case is to illustrate the clinical sequencing of orthodontic alignment and periodontal soft tissue recontouring when both tooth position and gingival architecture contribute to the esthetic concern while acknowledging the diagnostic limitations associated with the available clinical documentation.

Case Presentation

A 25-year-old female patient presented to the dental clinic seeking improvement in the appearance of her smile. Her medical history was noncontributory, and she was classified as American Society of Anesthesiologists (ASA) physical status I, indicating a healthy patient without systemic disease [7]. She reported no known allergies. Her primary concern was the appearance of her teeth and gingival margins, and she expressed a desire to achieve a more harmonious and esthetically pleasing smile.

Clinical examination demonstrated dental malalignment, excessive gingival coverage of the anterior clinical crowns, reduced apparent clinical crown height, and irregular gingival margins, with findings considered consistent with APE. These observations suggested that both tooth position and gingival architecture contributed to the patient's esthetic concerns. However, standardized periodontal probing measurements, documentation of the CEJ position, bone-sounding measurements, periodontal biotype assessment, and specific radiographic findings were not available. Consequently, the anatomical subtype of APE could not be definitively established, and alternative causes of excessive gingival display could not be comprehensively excluded. The diagnosis was therefore based primarily on the available clinical observations. Because both dental malalignment and gingival morphology contributed to the esthetic presentation, a multidisciplinary treatment plan combining orthodontic alignment with periodontal soft tissue recontouring was selected.

The primary orthodontic objective was to improve dental alignment and establish more favorable tooth positions before definitive gingival recontouring. Fixed orthodontic appliances were used for approximately 18 months. Detailed documentation of the initial malocclusion classification, bracket prescription, archwire sequence, and specific orthodontic mechanics was not available. During the final phase of orthodontic therapy, approximately two months before the anticipated removal of the fixed appliances, the patient was reevaluated for periodontal treatment. At this stage, substantial improvement in dental alignment had been achieved, while the fixed orthodontic appliances remained in place. Despite the orthodontic correction, excessive gingival coverage of the anterior clinical crowns and irregularities of the gingival margins remained clinically evident (Figure *1*). These residual findings supported proceeding with periodontal soft tissue recontouring before the completion of orthodontic therapy. Performing the periodontal procedure at this stage allowed the gingival margins to be refined in relation to the improved tooth positions while permitting final orthodontic adjustments to continue during postoperative healing.

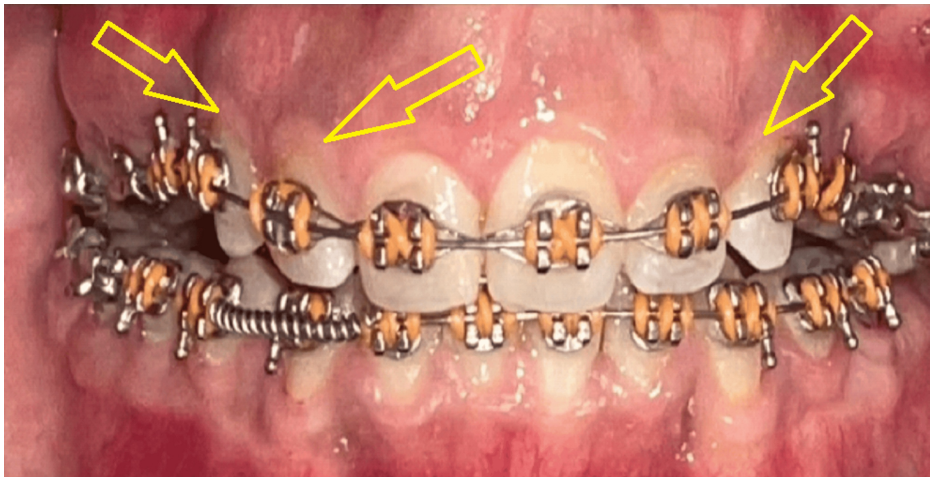


FIGURE 1: Orthodontic alignment prior to periodontal soft tissue recontouring

Clinical frontal view during the final phase of orthodontic treatment demonstrating improved dental alignment with persistent excessive gingival coverage of the anterior clinical crowns. Yellow arrows indicate areas of excessive gingival coverage and irregular gingival margins prior to gingivectomy and gingivoplasty.

Gingivectomy and gingivoplasty were subsequently performed while the fixed orthodontic appliances remained in place. Local anesthesia was administered with lidocaine; however, the exact anesthetic concentration and use of a vasoconstrictor could not be verified from the available documentation. The intended gingival contours were clinically delineated before tissue removal. A No. 15 surgical blade was used to excise the excess gingival tissue and increase exposure of the anterior clinical crowns. Gingivoplasty was then performed to refine the gingival margins and establish a more harmonious and symmetrical gingival architecture (Figure *2*). Gingivectomy was intended to reduce excessive gingival coverage, whereas gingivoplasty was performed to improve the contour and symmetry of the remaining gingival tissues. The extent of tissue removal was guided by the clinically delineated contours; however, quantitative measurements of the excised tissue were not available.

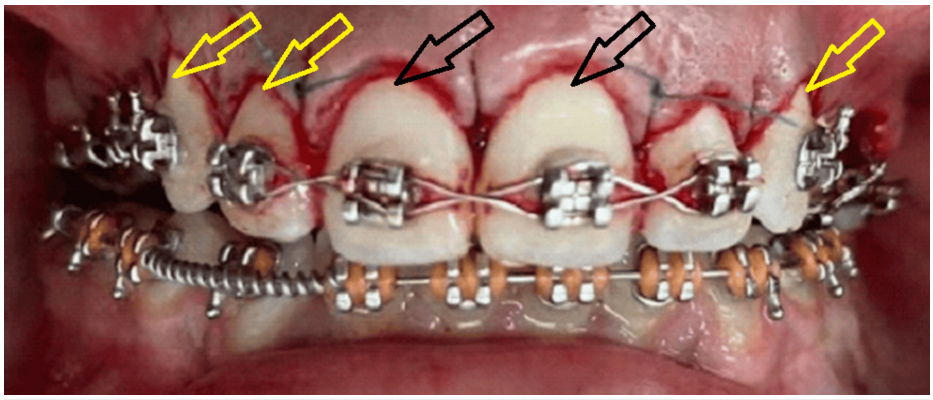


FIGURE 2: Gingivectomy and gingivoplasty during orthodontic treatment

Clinical frontal intraoperative view demonstrating gingivectomy and gingivoplasty performed during the final phase of orthodontic treatment. Yellow arrows indicate areas of gingival tissue excision during gingivectomy, while black arrows indicate areas of gingival recontouring during gingivoplasty. The procedure was performed to increase clinical crown exposure and establish a more harmonious gingival contour.

The surgical procedure was limited to soft tissue recontouring, and no osseous recontouring or osteoplasty was performed. Because standardized bone-sounding measurements, documentation of the CEJ to alveolar crest relationship, and quantitative evaluation of the supracrestal tissue attachment were unavailable, the anatomical justification for omitting osseous correction could not be independently verified from the available records. This represents a limitation in assessing the periodontal treatment selection and the potential long-term stability of the gingival margins. The surgical procedure was completed with 4-0 nylon

sutures.

The patient was monitored during the postoperative healing period while orthodontic therapy continued. Although postoperative oral hygiene is particularly important in patients with fixed orthodontic appliances, the specific hygiene instructions provided were not sufficiently documented for detailed reporting. At approximately one month after surgery, clinical examination demonstrated favorable soft tissue healing, increased exposure of the anterior clinical crowns, and improvement in gingival contour and symmetry compared with the presurgical appearance (Figure 3). The orthodontic appliances remained in place during this evaluation, permitting continued refinement of tooth position while the recontoured gingival tissues healed.

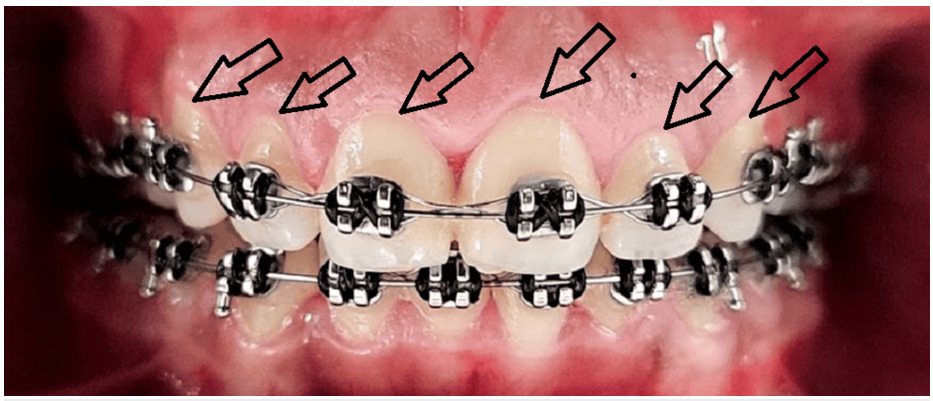


FIGURE 3: Postoperative healing following gingivectomy and gingivoplasty

Clinical frontal view at approximately one month postoperatively demonstrating favorable soft tissue healing, increased clinical crown exposure, and improved gingival contour and symmetry while orthodontic treatment remained in progress. Black arrows indicate the recontoured gingival margins and improved gingival architecture following gingivectomy and gingivoplasty.

Orthodontic treatment was subsequently completed at approximately 18 months. The available clinical documentation described improved dental alignment, clinical crown proportions, and gingival architecture, with patient-reported satisfaction regarding the esthetic outcome. However, a separate standardized periodontal examination or photographic assessment following appliance removal was not documented. Therefore, the objective postoperative assessment was limited primarily to the one-month evaluation performed while the orthodontic appliances remained in place. The absence of longer-term standardized periodontal measurements and post-debonding photographic documentation limits conclusions regarding definitive gingival margin stability and recurrence.

Clinical timeline

Day 1

Initial clinical evaluation identified dental malalignment, excessive gingival coverage of the anterior clinical crowns, reduced apparent clinical crown height, and irregular gingival margins, with findings considered consistent with APE. A multidisciplinary treatment plan combining orthodontic alignment with subsequent periodontal soft tissue recontouring was established. Definitive anatomical classification was limited by the absence of standardized periodontal and radiographic measurements.

Approximately Month 16

During the final phase of orthodontic treatment, approximately two months before the anticipated appliance removal, periodontal reevaluation demonstrated improved dental alignment with persistent excessive gingival coverage and irregular gingival margins. Gingivectomy and gingivoplasty were performed while the fixed orthodontic appliances remained in place. No osseous recontouring was performed.

Approximately Month 17

At the one-month postoperative evaluation, favorable soft tissue healing, increased clinical crown exposure, and improved gingival contour and symmetry were observed. Orthodontic treatment remained in progress, and the fixed appliances remained in place.

Approximately Month 18

Orthodontic treatment was completed. Available clinical documentation described improved dental alignment, clinical crown proportions, and gingival architecture, and the patient reported satisfaction with the esthetic outcome. However, a separate standardized periodontal assessment and photographic evaluation following appliance removal were not documented.

Discussion

Periodontal treatment for APE should be selected according to the clinical and anatomical characteristics of the individual patient. Recognition of APE requires careful evaluation of excessive gingival coverage and the relationship among the gingival margin, CEJ, and alveolar crest. Esthetic crown lengthening can be used to increase visible clinical crown dimensions and establish a more favorable relationship between the teeth and gingival margins [8]. Evidence comparing conventional scalpel and electronic techniques has also demonstrated the role of surgical gingival recontouring in esthetic crown lengthening procedures [9]. In the present case, a conventional No. 15 surgical blade was used to perform gingivectomy and gingivoplasty without osteoplasty or other osseous recontouring.

An important limitation of the present case is the absence of standardized periodontal measurements and comprehensive anatomical documentation. Although excessive gingival coverage, reduced apparent clinical crown height, and irregular gingival margins were considered consistent with APE, the lack of documented CEJ position, bone-sounding measurements, periodontal biotype assessment, and specific radiographic findings limited diagnostic certainty. These missing parameters prevented definitive anatomical classification and restricted the ability to distinguish APE from other potential causes of excessive gingival display. They also affected the retrospective evaluation of treatment planning because the relationship between the CEJ and alveolar crest is important when determining whether soft tissue recontouring alone is appropriate or whether osseous correction is indicated. Consequently, the absence of osseous intervention in this patient should not be interpreted as evidence that such intervention was anatomically unnecessary.

The absence of standardized quantitative outcome measurements represents another important limitation and should be considered when interpreting the observed esthetic improvement. Preoperative and postoperative measurements of clinical crown dimensions, gingival display, and gingival margin position were not available. Furthermore, the clinical photographs were not obtained using a documented standardized photographic protocol. Although favorable soft tissue healing, increased clinical crown exposure, and improved gingival symmetry were observed at approximately one month after surgery, the magnitude of these changes could not be objectively quantified. Therefore, the reported improvements represent descriptive short-term clinical observations rather than quantitative evidence of treatment effectiveness or long-term periodontal stability.

The management of esthetic gingival discrepancies may benefit from an interdisciplinary approach when more than one component contributes to the patient's esthetic concern. Periodontal treatment can complement other dental interventions by addressing gingival architecture after the correction of tooth-related discrepancies [10]. In patients undergoing orthodontic treatment, this coordination allows substantial tooth alignment to be achieved before gingival recontouring while permitting the periodontal procedure to be integrated with the final phase of orthodontic therapy. More recent approaches have incorporated digital planning and computer-aided surgical guides to transfer planned gingival and osseous corrections to the clinical setting [11]. In contrast, the present patient underwent conventional clinical soft tissue recontouring without a digital surgical guide or osseous intervention.

The clinical rationale for the selected soft tissue procedure was to address the persistent excessive gingival coverage and irregular gingival margins observed after substantial improvement in dental alignment. Gingivectomy was performed to remove excess gingival tissue and increase visible clinical crown exposure, while gingivoplasty was used to refine the gingival contours and improve symmetry. The intended gingival margins were clinically delineated before tissue removal, and the procedure was completed using a conventional No. 15 surgical blade without a digital surgical guide. This approach allowed direct clinical contouring of the gingival tissues. However, no documented comparative assessment was available to establish whether a digitally guided technique would have provided additional benefits. Furthermore, because bone-sounding measurements and the CEJ to alveolar crest relationship were not documented, the anatomical justification for selecting soft tissue recontouring without osseous intervention could not be definitively verified. Accordingly, this treatment approach should be interpreted as the procedure performed in this individual case rather than as a generally applicable protocol for patients with APE.

The timing of periodontal soft tissue recontouring was particularly relevant in the present case. Gingivectomy and gingivoplasty were performed during the final phase of orthodontic therapy, after substantial improvement in tooth alignment had been achieved but while the fixed appliances remained in place. This sequence allowed the gingival margins to be refined in relation to the improved tooth positions while permitting final orthodontic refinement to continue during periodontal healing. However, the clinical advantages of this sequence cannot be established from a single case without comparison with alternative treatment timings.

Postoperative behavior of the gingival margin is also relevant when evaluating the outcome of esthetic crown lengthening procedures. Garcia-Valenzuela and Chambrone evaluated early gingival margin remodeling following esthetic clinical crown lengthening, emphasizing that tissue changes during healing can influence the definitive gingival position [12]. In the present case, favorable soft tissue healing, increased clinical crown exposure, and improvement in gingival contour were observed at approximately one month after surgery. However, the relatively short postoperative observation period does not permit conclusions regarding long-term gingival margin stability or recurrence.

Accurate identification of factors contributing to excessive gingival display is important before selecting a surgical intervention. Castro et al. evaluated facial, dental, periodontal, and tomographic characteristics associated with excessive gingival display, highlighting the importance of considering multiple anatomical components during diagnosis [13]. Excessive gingival display should not automatically be attributed to APE because gingival enlargement, vertical maxillary excess, and upper lip-related factors may contribute to a similar appearance. In the present patient, the clinical findings were considered consistent with APE; however, standardized quantitative periodontal and tomographic measurements were not available. This limitation reduced diagnostic certainty and prevented definitive anatomical classification, which is relevant because different underlying causes may require different treatment approaches.

Clinical outcomes following esthetic crown lengthening have also been evaluated using periodontal and patient-centered measures. Silva et al. reported improvements in clinical crown dimensions and patient-centered outcomes following esthetic crown lengthening surgery [14]. In the present case, increased visible clinical crown exposure was observed, and the patient reported satisfaction with the esthetic appearance following treatment. However, unlike investigations using standardized quantitative measurements, this report relied primarily on descriptive clinical and photographic observations. Therefore, the magnitude of the esthetic improvement cannot be directly compared with quantitatively assessed outcomes.

Different methods have been proposed to improve the predictability of esthetic crown lengthening surgery. Jurado et al. described the use of a diagnostic mockup as a surgical reduction guide for crown lengthening [15]. The present case differed because no diagnostic mockup or surgical guide was used. Instead, the gingival contours were clinically delineated, and conventional gingivectomy and gingivoplasty were performed after substantial orthodontic correction. Although this sequence permitted the integration of soft tissue recontouring with the final phase of orthodontic treatment, the absence of standardized measurements and guided surgical planning limits the ability to evaluate the precision of the achieved gingival margins.

Differential diagnosis is particularly important in patients with excessive gingival display because several etiologies can produce a similar clinical appearance. Bastidas emphasized that the surgical approach to a gummy smile should be selected according to its underlying cause [16]. Therefore, the favorable short-term findings observed in the present patient should not be interpreted as evidence that gingivectomy and gingivoplasty are appropriate for all patients presenting with excessive gingival display. Comprehensive evaluation of the contributing dental, periodontal, skeletal, and soft tissue factors remains necessary before treatment selection.

The extent of periodontal surgery is another important consideration. Cairo et al. reported periodontal plastic surgery for patients with APE and gummy smile using an approach involving flap elevation and osseous resection [17]. This differs from the present case, in which no osteoplasty or other osseous modification was performed. The comparison illustrates that periodontal management of APE may involve different surgical approaches depending on the anatomical relationships and treatment objectives. However, because the present case lacks documented bone-sounding findings and CEJ to alveolar crest measurements, it is not possible to determine retrospectively whether osseous correction would have been indicated according to established anatomical criteria.

Monaco et al. described the clinical parameters useful for diagnosing excessive gingival display and selecting an appropriate therapeutic approach [18]. These considerations reinforce the importance of distinguishing APE from other potential causes of excessive gingival display before selecting periodontal surgery. In the present patient, clinical findings considered consistent with APE occurred together with dental malalignment, supporting a multidisciplinary treatment plan in which orthodontic correction preceded periodontal soft tissue recontouring. Nevertheless, the absence of comprehensive anatomical measurements limits the certainty of the diagnosis and the ability to fully evaluate the selected surgical approach.

Published reports demonstrate that the timing of periodontal management of APE in orthodontic patients may vary according to the clinical situation. Pulgaonkar and Chitra described an orthodontic patient with APE in whom inadequate clinical crown height interfered with optimal bracket placement; periodontal surgical procedures were therefore performed before the initiation of fixed orthodontic therapy [19]. In contrast, gingivectomy and gingivoplasty in the present patient were performed during the final phase of orthodontic therapy, after substantial tooth alignment had been achieved but before the removal of the fixed appliances. This difference illustrates how the timing of periodontal intervention may depend on the relationship between gingival anatomy and the requirements of orthodontic treatment. In the present case,

the selected sequence allowed gingival recontouring to be coordinated with the improved tooth positions while permitting final orthodontic refinement during periodontal healing.

The surgical principles underlying gingivectomy have a long history in periodontal therapy. Goldman provided an early description of gingivectomy and its clinical indications [20]. Although periodontal diagnosis, esthetic treatment planning, and surgical technologies have evolved substantially since these early descriptions, conventional soft tissue excision and contouring remain relevant in appropriately selected patients. In the present case, this conventional approach was integrated with orthodontic treatment rather than combined with osseous crown lengthening. However, appropriate patient selection requires evaluation of the periodontal anatomy, including the relationship between the CEJ, alveolar crest, and supracrestal tissue attachment.

At the one-month postoperative evaluation, favorable soft tissue healing, increased clinical crown exposure, and improved gingival symmetry were observed while the fixed orthodontic appliances remained in place. Orthodontic treatment was subsequently completed at approximately 18 months, and the available documentation described improved dental alignment and patient-reported satisfaction with the esthetic appearance. However, a separate standardized periodontal examination or photographic evaluation following appliance removal was not documented. Consequently, the definitive post-debonding gingival condition and long-term stability of the gingival margins could not be objectively established. These findings should therefore be interpreted as short-term descriptive observations from a single case rather than evidence that the same therapeutic sequence will produce equivalent outcomes in other patients.

Several additional limitations should be acknowledged. This report describes a single patient without a comparator or control group, limiting generalizability. The absence of detailed orthodontic diagnostic records and appliance mechanics restricts the reproducibility of the interdisciplinary treatment sequence. In addition, the lack of quantitative periodontal measurements and standardized photographic comparisons limits the objective assessment of the esthetic changes. Differences in photographic positioning, magnification, lighting, or angulation may influence visual interpretation. The limited documented postoperative follow-up and absence of a standardized post-debonding periodontal evaluation further restrict conclusions regarding gingival margin stability or recurrence. Future clinical reports would benefit from comprehensive pretreatment periodontal assessment, documentation of the CEJ to alveolar crest relationship, standardized preoperative and postoperative measurements, consistent photographic protocols, and longer-term follow-up.

Within these limitations, this case illustrates the clinical integration of orthodontic treatment with conventional gingivectomy and gingivoplasty in a patient presenting with dental malalignment and findings considered consistent with APE. The selected treatment sequence permitted soft tissue recontouring during the final phase of orthodontic therapy and was associated with favorable short-term clinical observations. However, the diagnostic and outcome assessment limitations emphasize the importance of comprehensive periodontal evaluation, individualized surgical planning, and standardized follow-up when managing patients with excessive gingival coverage.

Conclusions

This case report describes the integration of orthodontic treatment with gingivectomy and gingivoplasty for the esthetic management of a 25-year-old female patient presenting with dental malalignment and clinical findings consistent with APE. Periodontal soft tissue recontouring was performed during the final phase of orthodontic therapy, after substantial improvement in dental alignment had been achieved. At the one-month postoperative evaluation, favorable soft tissue healing, increased visible clinical crown exposure, and improved gingival contour and symmetry were observed while the fixed orthodontic appliances remained in place.

Although the patient subsequently completed orthodontic treatment and reported satisfaction with the esthetic appearance, these observations represent the short-term findings of a single case report and do not establish the clinical effectiveness, predictability, or long-term stability of the treatment approach. Furthermore, the absence of standardized periodontal measurements and comprehensive anatomical documentation limits diagnostic certainty and objective assessment of the surgical outcome. This case illustrates one possible interdisciplinary treatment sequence for patients presenting with dental malalignment and excessive gingival coverage. However, treatment selection should be individualized according to the patient's clinical and periodontal anatomy, and longer-term follow-up with standardized measurements is necessary to evaluate gingival margin stability and the durability of the observed esthetic changes.

Additional Information

Author Contributions

All authors have reviewed the final version to be published and agreed to be accountable for all aspects of the work.

Concept and design: Keily J. Portillo Avila

Acquisition, analysis, or interpretation of data: Keily J. Portillo Avila, Saray Menendez Armas, Diosbeny N. Camacho Grullon, Yelitza Rojas, Eliangely Calderin

Drafting of the manuscript: Keily J. Portillo Avila

Critical review of the manuscript for important intellectual content: Keily J. Portillo Avila, Saray Menendez Armas, Diosbeny N. Camacho Grullon, Yelitza Rojas, Eliangely Calderin

Supervision: Keily J. Portillo Avila

Disclosures

Human subjects: Informed consent for treatment and open access publication was obtained or waived by all participants in this study. **Conflicts of interest:** In compliance with the ICMJE uniform disclosure form, all authors declare the following: **Payment/services info:** All authors have declared that no financial support was received from any organization for the submitted work. **Financial relationships:** All authors have declared that they have no financial relationships at present or within the previous three years with any organizations that might have an interest in the submitted work. **Other relationships:** All authors have declared that there are no other relationships or activities that could appear to have influenced the submitted work.

References

1. Alpiste-Illueca F: Altered passive eruption (APE): a little-known clinical situation . Med Oral Patol Oral Cir Bucal. 2011, 16:e100-4. 10.4317/medoral.16.e100
2. Mele M, Felice P, Sharma P, Mazzotti C, Bellone P, Zucchelli G: Esthetic treatment of altered passive eruption. Periodontol 2000. 2018, 77:65-83. 10.1111/prd.12206
3. Moshrefi A: Altered passive eruption. J West Soc Periodontol Periodontal Abstr. 2000, 48:5-8.
4. Ahmad I: Altered passive eruption (APE) and active secondary eruption (ASE): differential diagnosis and management. Int J Esthet Dent. 2017, 12:352-76.
5. Tinh NT, Duy HN, Ngan LN, Trung TH, Tra NT: A comprehensive digital workflow for the treatment of excessive gingival display caused by altered passive eruption: a prospective case series. J Esthet Restor Dent. 2026, 38:1154-65. 10.1111/jerd.70123
6. Kurtzman GM, Silverstein LH: Diagnosis and treatment planning for predictable gingival correction of altered passive eruption. Pract Proced Aesthet Dent. 2008, 20:103-8; quiz 110, 121.
7. Hendrix JM, Garmon EH: American Society of Anesthesiologists Physical Status Classification System . StatPearls [Internet]. StatPearls Publishing, Treasure Island (FL); 2026.
8. Minsk L: Esthetic crown lengthening. Compend Contin Educ Dent. 2001, 22:562-4, 566-9.
9. Vilela A, Mueller B, Sousa M, Sartori R, Doyle H, Magrin GL, Giro G: Gingival margin stability in esthetic crown lengthening surgery using electronic versus conventional scalpel: a pilot split-mouth randomized clinical trial. Int J Periodontics Restorative Dent. 2026, 0:1-21. 10.11607/prd.8126
10. Tomar N, Bansal T, Bhandari M, Sharma A: The perio-esthetic-restorative approach for anterior rehabilitation. J Indian Soc Periodontol. 2013, 17:535-8. 10.4103/0972-124X.118332
11. Kerudi LV, Mane VM, Patil AY, Kerudi VV: Guided periodontal plastic surgery for the correction of gummy smile using data merging and computer-aided design and computer-aided manufacturing surgical guide. J Indian Soc Periodontol. 2026, 30:145-9. 10.4103/jisp.jisp_337_24
12. Garcia-Valenzuela FS, Chambrone L: Effects of the GingivalStat approach on early gingival margin remodeling following esthetic clinical crown lengthening: a case series. J Esthet Restor Dent. 2024, 36:135-43. 10.1111/jerd.13161
13. Castro LT, Sementille MC, Ragghianti Zangrando MS, Greghi SL, Damante CA, Sant'Ana E, Sant'Ana AC: Facial, dental, periodontal, and tomographic characteristics of the etiology of excessive gingival display: a cross-sectional clinical study. J Periodontal Implant Sci. 2024, 54:419-31. 10.5051/jpis.2302300115
14. Silva CO, Soumaille JM, Marson FC, Progiante PS, Tatakis DN: Aesthetic crown lengthening: periodontal and patient-centred outcomes. J Clin Periodontol. 2015, 42:1126-34. 10.1111/jcpe.12482
15. Jurado CA, Parachuru V, Villalobos Tinoco J, Guzman-Perez G, Tsujimoto A, Javvadi R, Afrashtehfar KI: Diagnostic mock-up as a surgical reduction guide for crown lengthening: technique description and case report. Medicina (Kaunas). 2022, 58:1360. 10.3390/medicina58101360
16. Bastidas JA: Surgical correction of the "gummy smile" . Oral Maxillofac Surg Clin North Am. 2021, 33:197-209. 10.1016/j.coms.2021.01.005
17. Cairo F, Graziani F, Franchi L, Defraia E, Pini Prato GP: Periodontal plastic surgery to improve aesthetics in patients with altered passive eruption/gummy smile: a case series study. Int J Dent. 2012, 2012:837658. 10.1155/2012/837658
18. Monaco A, Streni O, Marci MC, Marzo G, Gatto R, Giannoni M: Gummy smile: clinical parameters useful for diagnosis and therapeutical approach. J Clin Pediatr Dent. 2004, 29:19-25.
19. Pulgaonkar R, Chitra P: Altered passive eruption complicating optimal orthodontic bracket placement: a case report and review of literature. J Clin Diagn Res. 2015, 9:ZD01-3. 10.7860/JCDR/2015/15852.6713
20. Goldman HM: Gingivectomy. Oral Surg Oral Med Oral Pathol. 1951, 4:1136-57. 10.1016/0030-4220(51)90071-0