ISSN: 3062-3405

Annals of Orthodontics and Periodontics Specialty
Volume 4, Page No: 133-142
Available Online at: aopsj.com

Original Article

Optimizing Orthodontic Aesthetics: Exploring Injectable Composite Resin Methods for Improved Smile Transformations

Daniela Domoco[1*], Stanca Cuc[2]

1. Translational and Experimental Clinical Research Centre in Oral Health, Department of Preventive, Community Dentistry and Oral Health, Victor Babes University of Medicine and Pharmacy, 300040 Timisoara, Romania.
2. Clinic of Preventive, Community Dentistry and Oral Health, Victor Babes University of Medicine and Pharmacy, Eftimie Murgu Sq. no 2, 300041 Timisoara, Romania.

***E-mail** ✉ daniela.domoco14@yahoo.com

Abstract

The injection moulding technique (IMT) offers a conservative, minimally invasive approach for dental restorations, enabling precise application of thin, flowable composite into a transparent silicone mould. Its fluid consistency allows complete adaptation to the mould and natural tooth surfaces, often avoiding the need for any tooth preparation and preserving tooth integrity. Using an etch-and-rinse protocol, IMT is highly reproducible and particularly advantageous following orthodontic treatment, where minor shape or spacing corrections may be required. Integrating orthodontic and restorative strategies is critical for achieving long-term outcomes in complex cases. This retrospective study reports on the use of IMT for conservative restoration of maxillary lateral incisors in two pediatric patients (aged 12.6 and 12.3 years), applied both before and after orthodontic treatment. The technique served as an interim solution until the patients were ready for definitive all-ceramic veneers. IMT is especially effective for small diastemas, minor gaps, or slightly retruded teeth. The reported cases, which involved irregular tooth shapes and dimensions, highlight how IMT can address these variations additively without invasive procedures. IMT represents a valuable adjunct in pediatric orthodontic care, supporting tooth reshaping and correction of size discrepancies at various treatment stages. When combined with a digital workflow, thermo-printed retainers can be fabricated in the same session, minimizing appointments and offering practical and economic benefits. Overall, IMT enhances both efficiency and treatment outcomes in interdisciplinary orthodontic-restorative management.

Key words: Diagnostic wax-up, Injection moulding technique, Injectable composite, High-filled composite, Digital flow, Clear silicon index

How to cite this article: Domoco D, Cuc S. Optimizing Orthodontic Aesthetics: Exploring Injectable Composite Resin Methods for Improved Smile Transformations. Ann Orthod Periodontics Spec. 2024;4:133-42. https://doi.org/10.51847/EHJgt8Z9pv

Introduction

Aesthetic considerations have become a cornerstone of modern dental care, influencing not only the appearance of the smile but also a patient's confidence, overall well-being, and quality of life [1, 2]. Contemporary rehabilitation strategies aim to restore functional occlusion while simultaneously enhancing cosmetic outcomes. Among the available options, ceramic veneers are often preferred due to their consistent performance, high-quality aesthetic results, and robust biomechanical

properties across a variety of clinical scenarios [3-5]. Alternatively, composite restorations have gained prominence in aesthetic, prosthetic, and operative dentistry because they provide effective solutions with reduced treatment duration and lower costs compared to conventional prosthetic methods [6–11].

Traditional freehand composite layering remains a widely used technique for achieving high-fidelity aesthetic restorations. This method requires precise application of composite materials with varying translucencies to replicate natural tooth characteristics. Although freehand layering can produce excellent aesthetic outcomes, it is technique-sensitive, time-intensive, and relies heavily on clinician expertise [12, 13].

The integration of digital technologies has transformed treatment planning in dentistry. CAD/CAM systems, intraoral scanners, CBCT imaging, digital smile design (DSD), and virtual orthodontic simulations enable clinicians to create detailed 3D treatment plans for complex interdisciplinary cases [14, 15]. Digital pre-visualization, particularly DSD, allows for early evaluation of the intended aesthetic and functional outcomes, guiding subsequent restorative procedures [16]. Open-source solutions such as Digital Smile Design with Keynote software further facilitate efficient, cost-effective digital planning [17, 18].

The injection moulding technique (IMT) offers a minimally invasive alternative to freehand bonding. By introducing a flowable composite into a transparent silicone mould, the technique allows precise adaptation of the material to the tooth surface. The composite's fluidity ensures complete coverage and integration with minimal or no tooth preparation, preserving natural structure. The etch-and-rinse protocol enhances the procedure's reliability and reproducibility [7–10].

For patients completing orthodontic treatment, IMT provides a conservative method to adjust tooth morphology, correct minor spacing issues, and refine overall aesthetics. Combining orthodontic and restorative approaches is essential for maintaining long-term functional and cosmetic outcomes, especially in cases with tooth wear, edge abrasion, abnormal tooth size or shape, or significant Bolton discrepancies [7].

This study presents the application of IMT in pediatric patients for the conservative restoration of maxillary lateral incisors during orthodontic therapy. The technique serves as a temporary solution prior to definitive all-ceramic veneers. Using a digital workflow, clinicians can design the intended tooth morphology efficiently, while thermoformed retainers or aligners can be fabricated and delivered in the same session, streamlining patient appointments. While 3D-printing methods allow highly customizable restorations, IMT provides a simpler, faster, and cost-effective approach without compromising aesthetic or functional results, making it particularly suitable for pediatric cases and routine clinical integration.

Case Presentation

The following cases comply with the 2013 CARE guidelines [19]. Informed consent was obtained from all participants before study inclusion. Ethical approval was granted by the University of L'Aquila Ethics Committee (L'Aquila, Italy) under Project ID 12/2020 on 11 May 2020, and the study adhered to the principles outlined in the Declaration of Helsinki.

Case 1

Patient presentation

A 12.6-year-old girl sought an orthodontic evaluation, motivated by dissatisfaction with the appearance of her smile. Clinical assessment revealed that her maxillary lateral incisors (teeth 12 and 22) were smaller than average and displayed atypical anatomical features.

A comprehensive medical and dental history was obtained, confirming the absence of systemic conditions and adherence to a healthy lifestyle. Caries risk was evaluated, taking into account the patient's dietary habits, which indicated a well-balanced nutritional profile.

Clinical findings

Examination showed a skeletal Class I pattern with an oval-shaped face, balanced symmetry, and a slightly convex profile. Molar and canine relationships were Class I, and dental midlines were well aligned. No carious lesions were detected in the anterior or posterior teeth. Mild crowding was observed in the mandibular arch.

Diagnosis and assessment

The diagnostic workflow included the collection of standard orthodontic records, encompassing photographs, radiographs, and dental impressions. These records were systematically digitized and analyzed using the Digital Smile Design—Keynote software to ensure thorough case evaluation **(Figure 1)**. The software was subsequently employed to digitally assess and adjust tooth dimensions and morphology, allowing precise treatment planning.

Figure 1. (a) Frontal view showing a slightly open mouth, emphasizing the conical morphology of teeth 12 and 22. (b) Occlusal perspective of the maxillary arch. (c, d) Radiographs used for diagnostic assessment

Considered treatment approaches

Two main strategies were proposed to address the patient's dental alignment and aesthetic concerns. The first approach entailed extraction of the lower incisor (tooth 42) to relieve mandibular crowding, followed by space closure in the upper arch using either direct or indirect restorations of teeth 12 and 22. This plan would necessitate a fixed retainer in the upper arch and a lower retainer spanning teeth 33 to 43.

The second strategy aimed to preserve all teeth, creating space in the lower arch through interproximal enamel reduction. The upper lateral incisors (12 and 22) would be reconstructed using the injection moulding technique (IMT), accompanied by a removable upper retainer and a lower fixed retainer from teeth 43 to 33. After discussion with the patient, the second, non-extractive approach was selected as the preferred treatment.

Execution of treatment

Once the target tooth morphology was finalized using digital planning software, a temporary resin mock-up was applied intraorally to evaluate aesthetic and functional outcomes. The definitive silicone mould was fabricated only after the mock-up met the satisfaction of both the clinician and patient. A thermally formed plastic tray incorporating a silicone stent was then produced in accordance with the final wax-up. The same digital workflow guided the creation of the thermo-printed retainer and the triple-layer silicone tray, ensuring accurate reproduction of the planned tooth dimensions and morphology **(Figure 2)**.

Figure 2. (a) Diagnostic wax-up of maxillary lateral incisors (12 and 22). (b) Thermo-printed retainer positioned on the upper left model; the top-right model represents the post-orthodontic final form, and the bottom model served as the basis for the triple-layer silicone index. (c) Thermo-printed retainer on the left with the triple-layer silicone index on the right, both created from the same digital plan

A custom triple-layer silicone index was developed to faithfully transfer the diagnostic wax-up into direct composite restorations. Each layer was designed with a distinct function: the first layer reinforced posterior stability, the second minimized deformation during handling, and the third allowed efficient light penetration for optimal curing. Small access openings at the incisal edges guided the composite syringe, ensuring precise application **(Figure 3)**. The combination of flexibility and rigidity in the silicone material permitted accurate adaptation over the teeth. Fabrication involved multiple materials: EXACLEAR GC Transparent Silicone (approximately 60 Shore-A) for the initial moulding, 2–3 mm ERCO-DURE thermoformed plates for structural support and masking, and LASCODE ERGASIL Double Paste A + B Silicone (70 Shore-A) to complete the final layer of the index.

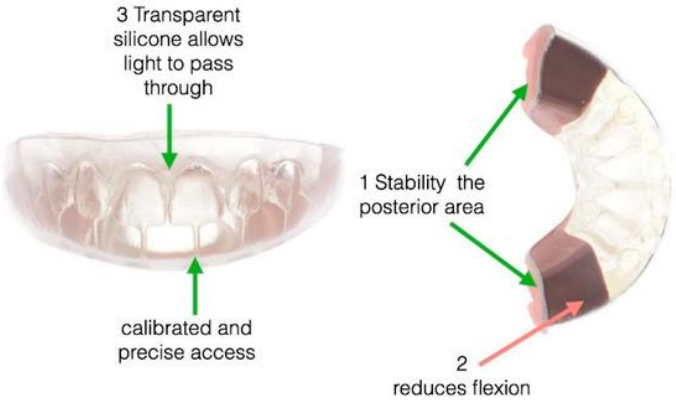

Figure 3. The three-layer silicon index's parts

The enamel surfaces were first conditioned through etching and application of an adhesive system. Using the silicone index as a guide, an A1-shaded flowable composite (G-ænial Universal Injectable, GC America, Illinois, USA) was incrementally layered to sculpt the intended tooth morphology. Polymerization was performed with an Elipar™ DeepCure-L LED unit (3M, Minnesota, USA; wavelength range 430–480 nm; intensity 1470 mW/cm²). After curing, any surplus composite was carefully trimmed with a scalpel or fine bur to eliminate overhangs that might promote plaque retention or gingival inflammation. A meticulous multi-step polishing process was then employed to optimize the restoration's durability and aesthetics. The finishing protocol incorporated flame-shaped fine-grit burs (Komet Dental, Lemgo, Germany—green), 3M abrasive discs of sequential grit sizes, and Soniflex handpiece finishing tips (Kavo, Biberach, Germany). Final polishing utilized a goat-hair wheel combined with diamond paste and Sof-Lex spirals to achieve a smooth, glossy composite surface **(Figure 4)**.

Figure 4. (a) Incremental layering of flowable composite. (b) Light-curing process

The treatment lasted 22 months and was successfully completed, resulting in the patient expressing satisfaction with her improved smile **(Figure 5)**. The use of a digital workflow enabled efficient fabrication and placement of the retainer immediately following the conservative restorative procedure.

a b c

Figure 5. (a) Refined morphology of teeth 12 and 22. (b) Frontal view illustrating the completed occlusal relationship. (c) Occlusal view showing the palatal surfaces of the restored lateral incisors

Six months after the procedure, clinical evaluation demonstrated healthy gingival tissues, well-preserved periodontal structures, and consistent tooth coloration for teeth 12 and 22. The patient reported excellent comfort and satisfaction with the restorative results. Long-term follow-up at six years revealed continued periodontal health, absence of bleeding on probing, physiological probing depths, and maintained oral hygiene, confirming the durability and success of the restorations **(Figure 6)**.

Figure 6. Frontal view of final occlusion in a six-year follow-up control

Case 2

Patient presentation

A 12.3-year-old male sought orthodontic assessment due to concerns about the aesthetic appearance of his smile. Clinical evaluation identified diminutive lateral incisors and maxillary canines (teeth 13 and 23) that had not yet erupted **(Figure 7)**.

a **b**

Figure 7. (a) Frontal view of the teeth in maximal intercuspation. (b) Close examination of anomalies present in teeth 12 and 22

The patient's medical history was complete and revealed no coexisting systemic conditions, alongside confirmation of a generally healthy lifestyle. Evaluation of caries risk incorporated an analysis of dietary habits, which were deemed optimal.

Clinical findings

The patient displayed a skeletal Class I pattern with a mild propensity toward Class III, accompanied by an oval-shaped face with balanced symmetry and a subtly convex profile. Both molars and canines were in Class I occlusal relationships, with proper midline alignment **(Figure 7)**. The dental arches showed evenly spaced teeth without any crowding, and no evidence of caries was noted in anterior or posterior regions.

Diagnosis and assessment

Diagnostic workup included photographs, radiographs, and dental casts **(Figure 8)**. Tooth size and morphology were digitally modified and analyzed using either proprietary or open-source software to aid in planning and assessment.

Figure 8. (a,b) Radiographs illustrating the patient's dentition

Treatment options explored

Two potential strategies were considered to correct the patient's malocclusion and enhance aesthetics. The first focused on closing spaces and addressing the mild Class III tendency, while the second combined pre-orthodontic direct restorations of teeth 12 and 22 with a 24-month orthodontic regimen, culminating in the placement of upper and lower retainers. After discussing the options, the patient chose the latter approach.

Treatment execution

The final tooth shapes were designed digitally, followed by the placement of a provisional resin mock-up to allow intraoral evaluation and refinement based on the patient's preferences. Once the desired appearance and function were achieved, the definitive mould was prepared. A silicone stent, produced from the wax-up, was encased in a thermally molded plastic tray **(Figure 9)**. Teflon tape protected the upper central incisors during the procedure, preventing unintended composite flow. The upper lateral incisors were etched and coated with bonding agent, then incrementally built up with flowable composite within the silicone guide. After curing, all excess material was removed to minimize plaque retention and prevent gum irritation, followed by careful polishing to ensure long-term aesthetic and functional results. All materials and techniques were applied as previously described in Case 1 **(Figure 10)**.

Figure 9. A thermo-printed retainer positioned on the silicone tray for the upper left quadrant. The lower left shows the completed model used to create the triple-layer silicone index from the wax-up, while the model on the right depicts the lower dental arch

a b c

Figure 10. (a) Teflon was applied to the upper central incisors to prevent unwanted flow of the composite material. (b) Intraoral placement of the silicone index, where its transparency allows visualization of the composite as it fills the mould. (c) Light-curing of the composite

Thermo-printed retainers were placed during the same appointment.

At the two-year follow-up, the results remained highly satisfactory, with no evidence of bleeding, abnormal probing depths, occlusal discrepancies, or alterations in tooth shape or color, and the patient reported good tolerance of the procedure **(Figure 11)**.

a b c

Figure 11. (a) Frontal view showing the final occlusion. (b) Close inspection of the reshaped teeth 12 and 22. (c) Occlusal perspective highlighting the palatal surfaces of the reconstructions on teeth 12 and 22.

Discussion

The injectable composite approach represents a minimally invasive and efficient solution for patients aiming for subtle aesthetic improvements, particularly when minor tooth reshaping is required [20]. These cases illustrate how injectable composite resin can be effectively applied to adjust tooth form in younger patients, offering a cost-conscious alternative to ceramic veneers that avoids more extensive and invasive procedures. Unlike ceramics, composite restorations allow for straightforward repairs, replacements, and repolishing over time [21].

Modern flowable composites have seen substantial enhancements in mechanical performance, including durability, wear resistance, strength, and optical qualities such as polishability and translucency [22, 23]. High-load fluid composites provide superior flexural strength, elasticity, resilience, and wear resistance relative to traditional materials [24–27]. Their elevated filler content (69 wt%) ensures homogeneous distribution, yielding restorations that are highly resistant to wear [28].

Achieving predictable results with the injectable moulding technique (IMT) requires careful isolation of the tooth surface, avoiding rubber dam clamps that could disrupt the thermo-formed tray. The use of a 1 mm thermo-printed tray, supported on unaffected teeth, ensures precise adaptation of the composite. Pre-heating the material enhances its flow and consistency, while controlled gingival overflow minimizes air entrapment and ensures complete coverage of interproximal and marginal areas. Prolonged light-curing is essential to fully polymerize regions that may be obstructed or distant from the light source [29], and subsequent polishing preserves the intended contour and smoothness. Longevity of the restoration is influenced by patient factors such as age, parafunctional habits, and the size of the reconstruction.

Photopolymerization has a well-established role in improving restoration durability [30, 31], and variations between brands generally do not significantly impact clinical outcomes, allowing clinicians flexibility in material selection [32, 33]. In this study, G-ænial Universal Injectable (GC Corporation) was chosen, following manufacturer instructions and supported by scientific evidence [7, 34, 35]. Its smooth surface reduces Streptococcus mutans adherence, and finishing with Sof-Lex Spirals further enhances surface smoothness [36].

Proper placement of the composite along the gingival margin is crucial to avoid inflammation. Mechanical barriers prevent subgingival flow, reducing the risk of biological complications. Maintaining supragingival margins on the wax-up eliminates the need for retraction cords while ensuring effective, minimally invasive treatment [10].

Patient selection is critical for successful outcomes. The injectable technique is best suited for individuals with small spaces, minor diastemas, or mild dental retrusion [37]. The cases presented here, featuring teeth with irregular size and shape, demonstrate that IMT is an effective additive approach for conservative aesthetic correction.

Conclusions

- The injectable moulding technique (IMT) offers a highly conservative option for cases where additive interventions can enhance treatment outcomes.
- Achieving reliable and predictable results relies on careful execution, thorough pre-treatment planning, careful case selection, and strict adherence to procedural and polishing protocols.
- IMT has proven effective in pediatric patients both at the initiation and completion of orthodontic therapy.
- This method serves as a valuable adjunct for orthodontists, assisting in finalizing treatment, addressing discrepancies in the Bolton index, and correcting irregular tooth morphology.
- The technique can provide both functional improvements and aesthetic enhancements, contributing to superior orthodontic results and a more attractive smile.
- Incorporating digital workflows allows clinicians to optimize appointments by providing thermo-printed retainers or aligners concurrently with the IMT, offering practical and cost-effective advantages.
- Additional clinical research is needed to confirm the long-term durability and effectiveness of this approach.

Acknowledgments: None

Conflict of interest: None

Financial support: None

Ethics statement: None

References

1. Tin-Oo MM, Saddki N, Hassan N. Factors influencing patient satisfaction with dental appearance and treatments they desire to improve aesthetics. BMC Oral Health. 2011;11:6.
2. de Couto Nascimento V, de Castro Ferreira Conti AC, de Almeida Cardoso M, Valarelli DP, de Almeida-Pedrin RR. Impact of orthodontic treatment on self-esteem and quality of life of adult patients requiring oral rehabilitation. Angle Orthod. 2016;86:839–45.
3. Calamia JR, Calamia CS. Porcelain laminate veneers: Reasons for 25 years of success. Dent Clin North Am. 2007;51:399–417.
4. Turgut S, Bagis B. Colour stability of laminate veneers: An in vitro study. J Dent. 2011;39:e57–64.
5. Beier US, Dumfahrt H. Longevity of silicate ceramic restorations. Quintessence Int. 2014;45:637–44.
6. Demarco FF, Collares K, Correa MB, Cenci MS, Moraes RR, Opdam NJ. Should my composite restorations last forever? Why are they failing? Braz Oral Res. 2017;31:e56.
7. Terry D, Powers J. Using injectable resin composite: Part two. Int Dent Afr. 2014;5:64–72.
8. Terry DA. Restoring with flowables. Stomatol EDU J. 2017;4:74.
9. Terry DA, Powers JM, Blatz MB. The inverse injection layering technique. J Cosmet Dent. 2018;34:48.
10. Geštakovski D. The injectable composite resin technique: Minimally invasive reconstruction of esthetics and function. Quintessence Int. 2019;50:712–20.

11. Gia NRY, Sampaio CS, Higashi C, Sakamoto AS Jr, Hirata R. The injectable resin composite restorative technique: A case report. J Esthet Restor Dent. 2021;33:404–14.
12. Pontons-Melo JC, Atzeri G, Collares FM, Hirata R. Cosmetic recontouring for achieving anterior esthetics. Int J Esthet Dent. 2019;14:134–46.
13. Pontons-Melo JC, Pizzatto E, Furuse AY, Mondelli J. A conservative approach for restoring anterior guidance: A case report. J Esthet Restor Dent. 2012;24:171–82.
14. Coachman C, De Arbeloa L, Mahn G, Sulaiman T, Mahn E. An improved direct injection technique with flowable composites. A digital workflow case report. Oper Dent. 2020;45:235–42.
15. Valeri C, Quinzi V, Di Giandomenico D, Fani E, Leonardi R, Marzo G. Teledentistry: A bibliometric analysis of the scientific publication's trend. Digit Health. 2023;9:20552076231204747.
16. Coachman C, Calamita M. Digital smile design: A tool for treatment planning and communication in esthetic dentistry. Quintessence Dent Technol. 2012;35:103–11.
17. Canova FF, Oliva G, Beretta M, Dalessandri D. Digital (r) evolution: Open-source software for orthodontics. Appl Sci. 2021;11:6033.
18. Sampaio CS, Puppin-Rontani J, Tonolli G, Atria PJ. Workflow of digitally guided direct composite resin restorations using open source software and 3D printing: A clinical technique. Quintessence Int. 2021;52:104–10.
19. Riley D, Barber M, Kienle G, Aronson J, von Schoen-Angerer T, Tugwell P, et al. CARE 2013 explanations and elaborations: Reporting guidelines for case reports. J Clin Epidemiol. 2017;89:218–35.
20. Terry DA, Powers JM. A predictable resin composite injection technique, part I. Dent Today. 2014;33:96–101.
21. Patankar RC, More V, Jadhav R, Sabane A, Kadam P, Gachake A. Comparative evaluation of flexural strength of denture base resin materials processed using compression molding technique, injection molding technique, and computer-aided design CAM technique: An in vitro study. Dent Res J. 2022;19:100.
22. Boruziniat A, Gharaee S, Shirazi AS, Majidinia S, Vatanpour M. Evaluation of the efficacy of flowable composite as lining material on microleakage of composite resin restorations: A systematic review and meta-analysis. Quintessence Int. 2016;47:93–101.
23. Szesz A, Parreiras S, Martini E, Reis A, Loguercio A. Effect of flowable composites on the clinical performance of non-carious cervical lesions: A systematic review and meta-analysis. J Dent. 2017;65:11–21.
24. Prabhakar A, Madan M, Raju O. The marginal seal of a flowable composite, an injectable resin modified glass ionomer and a compomer in primary molars—an in vitro study. J Indian Soc Pedod Prev Dent. 2003;21:45–8.
25. Sumino N, Tsubota K, Takamizawa T, Shiratsuchi K, Miyazaki M, Latta MA. Comparison of the wear and flexural characteristics of flowable resin composites for posterior lesions. Acta Odontol Scand. 2013;71:820–7.
26. Ujiie M, Tsujimoto A, Barkmeier WW, Jurado CA, Villalobos-Tinoco J, Takamizawa T, et al. Comparison of occlusal wear between bulk-fill and conventional flowable resin composites. Am J Dent. 2020;33:74–8.
27. Imai A, Takamizawa T, Sugimura R, Tsujimoto A, Ishii R, Kawazu M, et al. Interrelation among the handling, mechanical, and wear properties of the newly developed flowable resin composites. J Mech Behav Biomed Mater. 2019;89:72–80.
28. Maroulakos G, Maroulakos MP, Tsoukala E, Angelopoulou MV. Dental reshaping using the composite resin injection technique after dental trauma and orthodontic treatment. J Dent Child. 2021;88:144–7.
29. Ammannato R, Ferraris F, Marchesi G. The "index technique" in worn dentition: A new and conservative approach. Int J Esthet Dent. 2015;10:68–99.
30. Balagopal S, Geethapriya N, Anisha S, Hemasathya BA, Vandana J, Dhatshayani C. Comparative evaluation of the degree of conversion of four different composites polymerized using ultrafast photopolymerization technique: An in vitro study. J Conserv Dent. 2021;24:77.
31. Demarco FF, Cenci MS, Montagner AF, de Lima VP, Correa MB, Moraes RR, et al. Longevity of composite restorations is definitely not only about materials. Dent Mater. 2022;39:1–12.
32. Rodolpho PADR, Rodolfo B, Collares K, Correa MB, Demarco FF, Cenci MS, et al. Clinical performance of posterior resin composite restorations after up to 33 years. Dent Mater. 2022;38:680–8.

33. Moraes RR, Cenci MS, Moura JR, Demarco FF, Loomans B, Opdam N. Clinical performance of resin composite restorations. Curr Oral Health Rep. 2022;9:22–31.
34. Jang J, Park S, Hwang I. Polymerization shrinkage and depth of cure of bulk-fill resin composites and highly filled flowable resin. Oper Dent. 2015;40:172–80.
35. Kitasako Y, Sadr A, Burrow M, Tagami J. Thirty-six month clinical evaluation of a highly filled flowable composite for direct posterior restorations. Aust Dent J. 2016;61:366–73.
36. Vulović S, Stašić JN, Ilić J, Todorović M, Jevremović D, et al. Effect of different finishing and polishing procedures on surface roughness and microbial adhesion on highly-filled composites for injectable mold technique. J Esthet Restor Dent. 2023;35:917–26.
37. Geštakovski D. The injectable composite resin technique: Biocopy of a natural tooth—advantages of digital planning. Int J Esthet Dent. 2021;16:280–99.