



NATIONAL AUTONOMOUS UNIVERSITY OF MEXICO, UNAM

FACULTY OF DENTISTRY

DEPARTMENT OF HIGH SPECIALIZATION IN SURGICAL AND PROSTHETIC ORAL IMPLANTOLOGY

Innovative closed tray dragging impression technique for implants in the aesthetic zone: a clinical approach based on an established method

DDS María del Carmen Plascencia Medina, DDS Jorge Humberto Gil Valdes, Dr. Valentina García Lee



INTRODUCTION: This study describes an innovative technique used to capture the emergence profile in dental implants in the aesthetic zone, evaluating the precision and influence on aesthetic results, but also in capturing the best restorative position.

Impression techniques have been developed to accurately capture the emergence profile, ensuring both aesthetic results and implant stability by preserving a soft tissue seal around the peri-implant area (Fig 1).

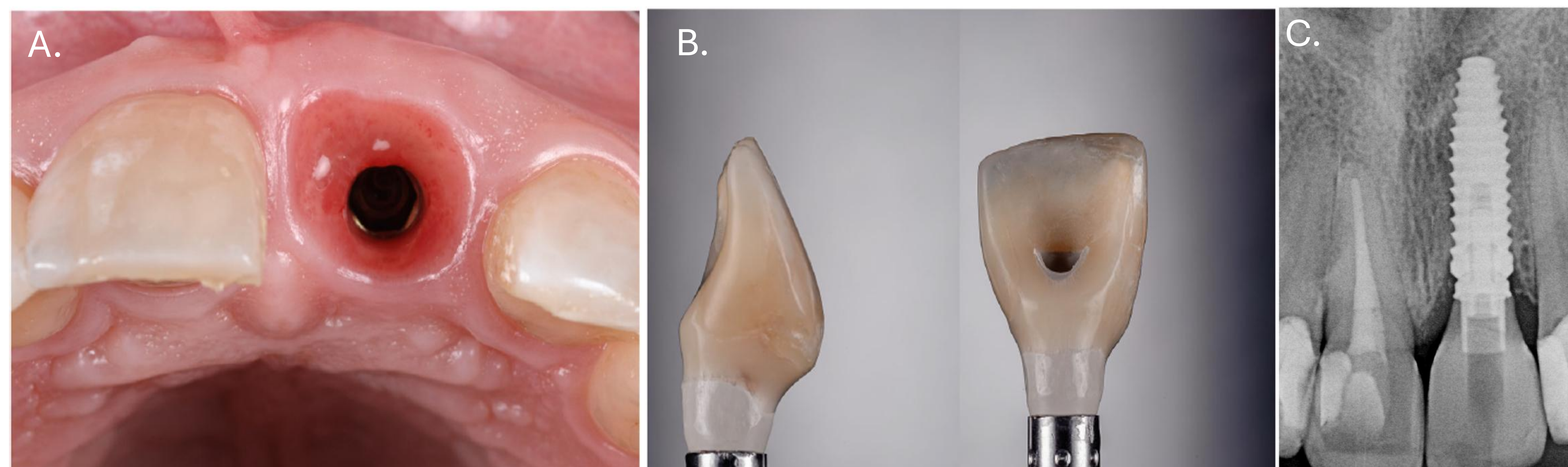


Figure 1. A) Emergence profile conformed. B) Provisional. C) Radiographic view placed on implant in mouth. Taken from The esthetic biological contour concept for implant restoration emergence profile design. Gómez Meda, R. 2021.

This technique, derived from a proven closed tray method, is a refined approach to capture the emergence profile in the aesthetic zone. This clinical adaptation demonstrates potential for a broader application.

The impression technique most used its open tray technique, due to its reliability in obtaining the implant position allowing the clinician to screw-secure the impression pin, although with its limitations such as more impression materials and working time (Fig 2).

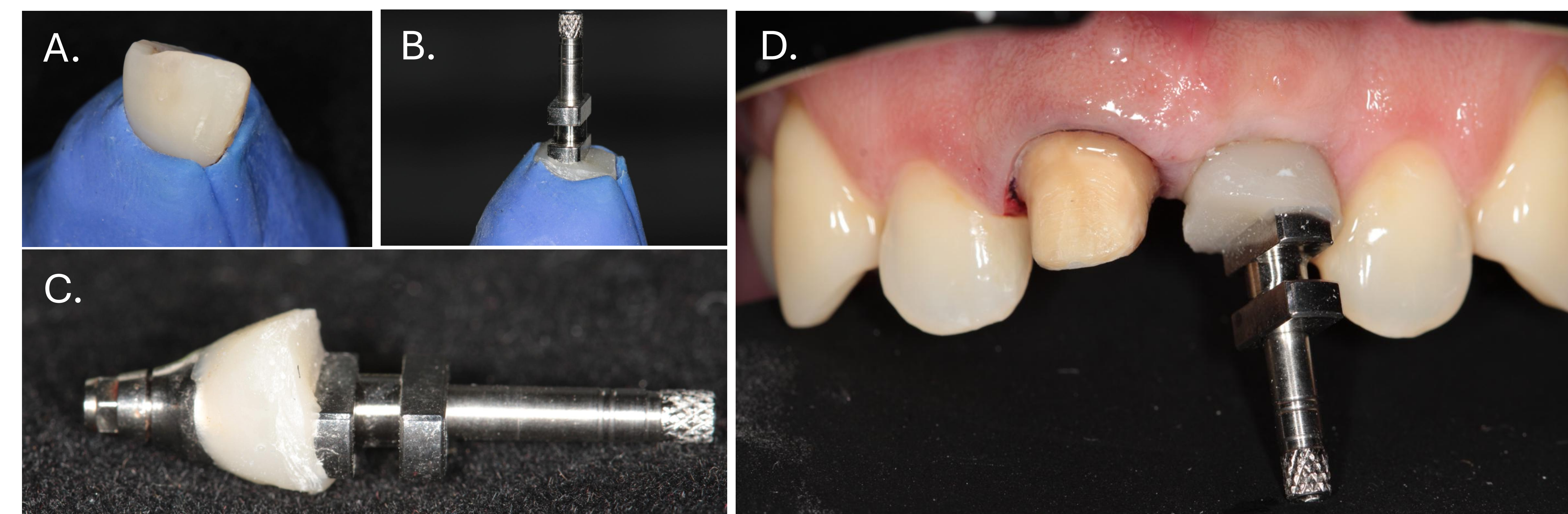


Figure 2. Conventional emergence profile capturing sequence. A) Emergence profile copied from the provisional with silicone with analog connected. B) Impression coping with fluid resin in the provisional space. C) Impression coping with the resin emulating the provisional. D) Impression pin emulating the emergence profile placed in mouth.

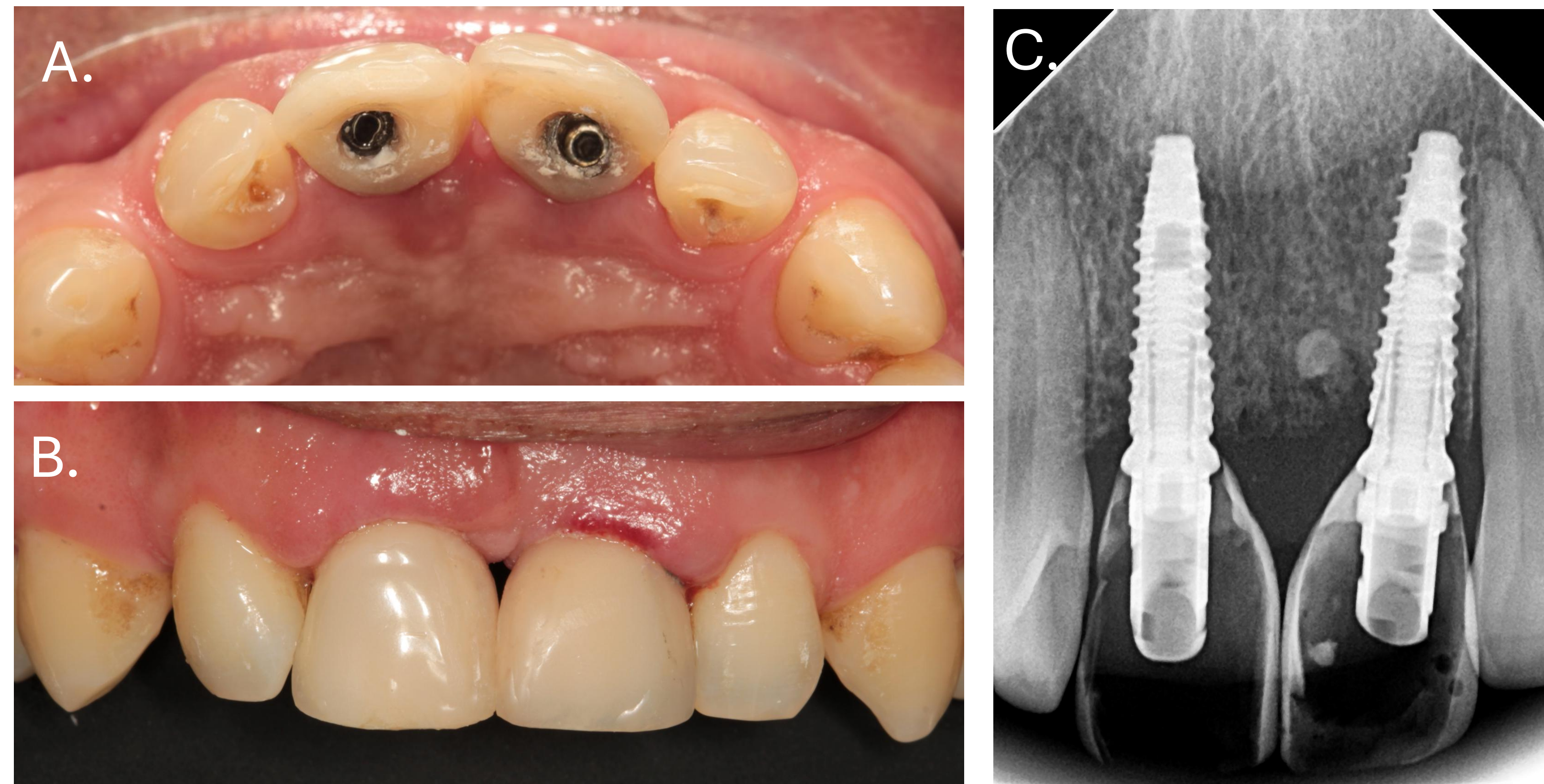
Materials and Methods



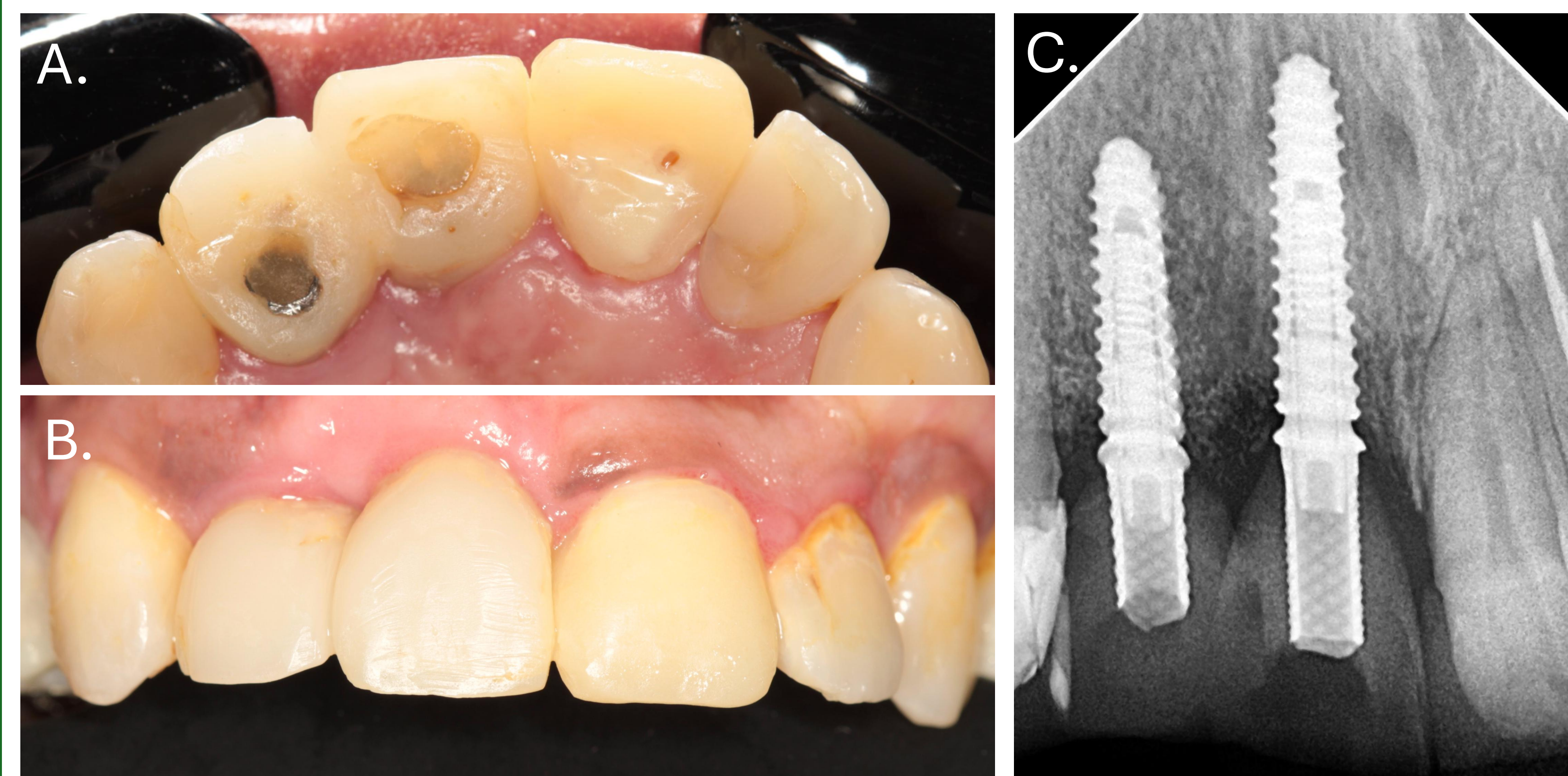
Cases for this study were those who ideally had 2 implants placed together, because of the clinical challenge they represent when doing the rehabilitation, especially in the aesthetic zone (Fig 3). Impressions were taken using this new technique, based on the conventional closed tray impression method but with specific adjustments.

The dragging motion incorporated into the closed tray system is designed to optimize soft tissue contouring and emergence profile capture. To assess the effectiveness of the new technique time of procedure, accuracy of the emergence profile and soft tissue contour are considered.

Case 1



Case 2



Case 3

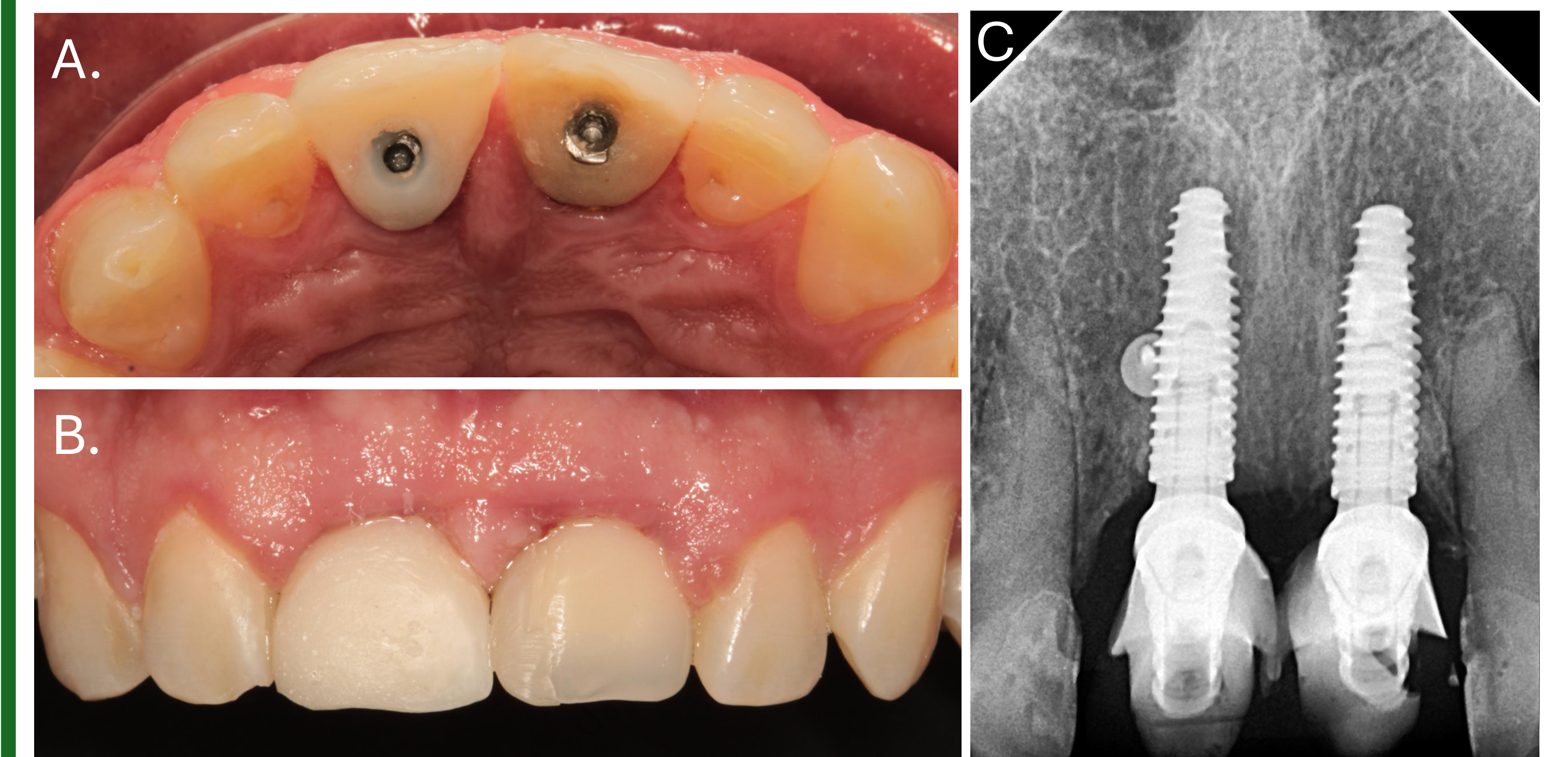


Figure 3. Initial clinical cases A) intraoral photograph, occlusal view B) Front view C) Periapical radiograph of two implants in the aesthetic anterior zone.

Dragging Impression Technique



Case 1

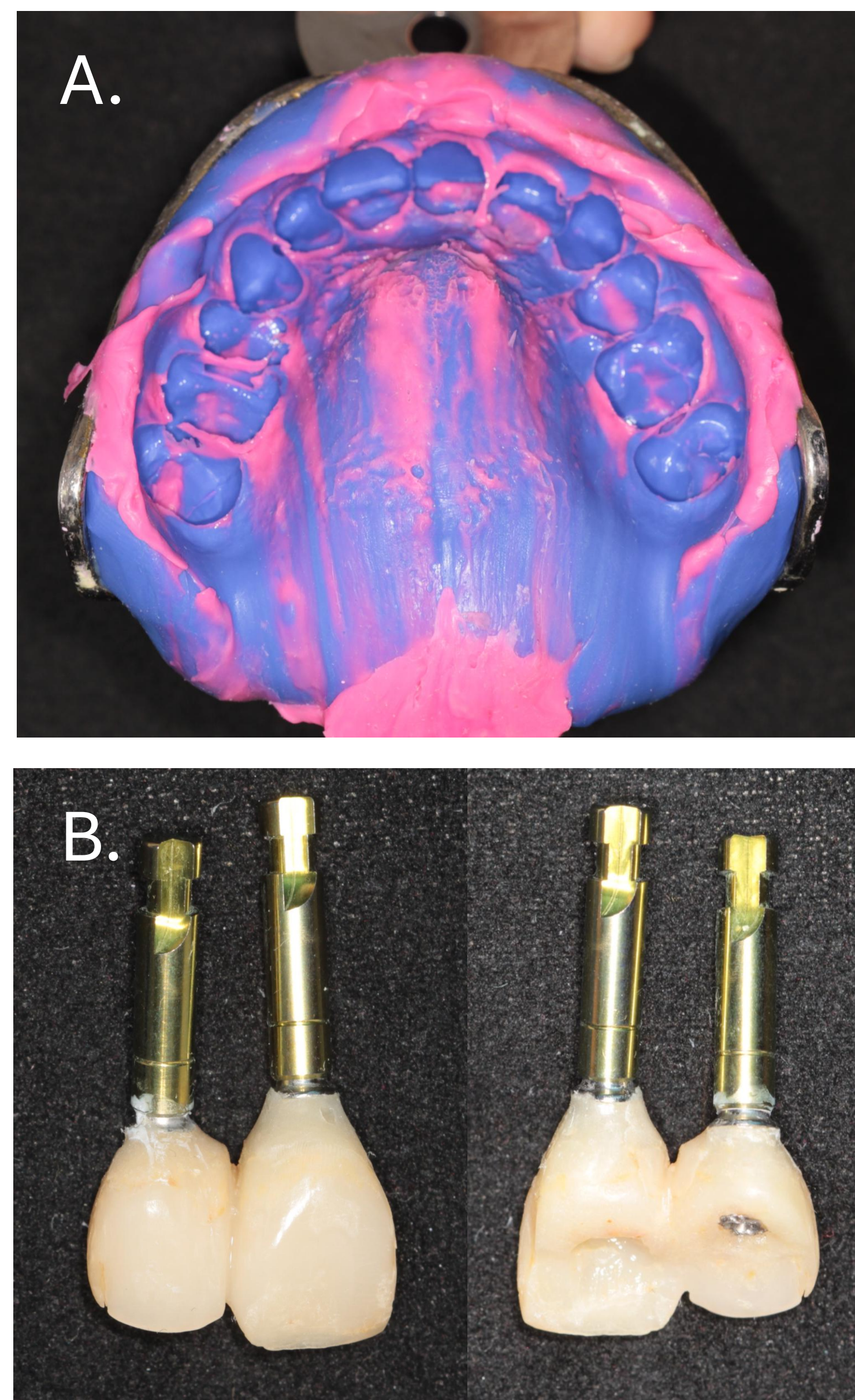


Figure 4. Dragging Impression Technique
A) Conventional impresión taken
B) Provisionals with analog connected

Case 2

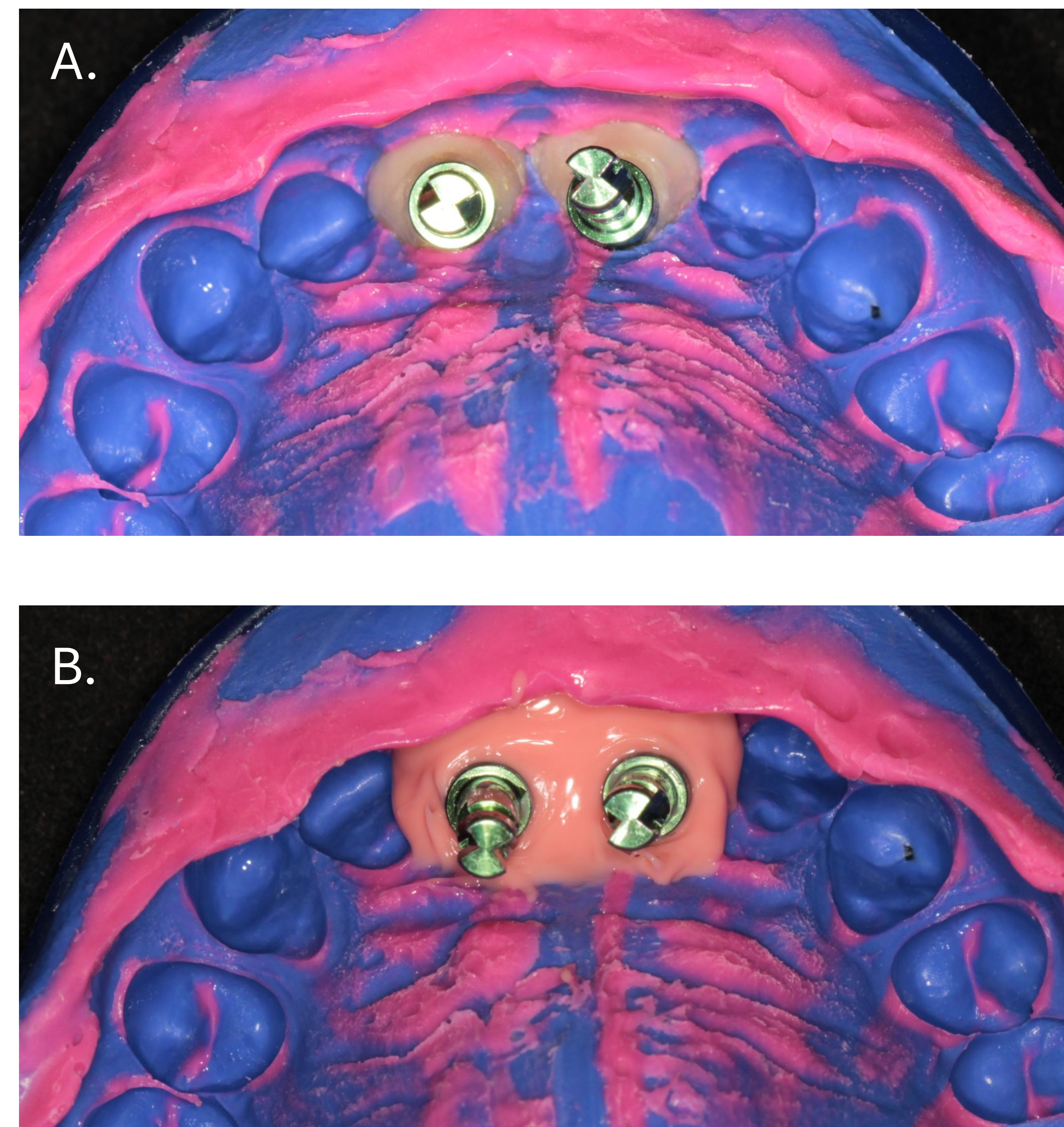
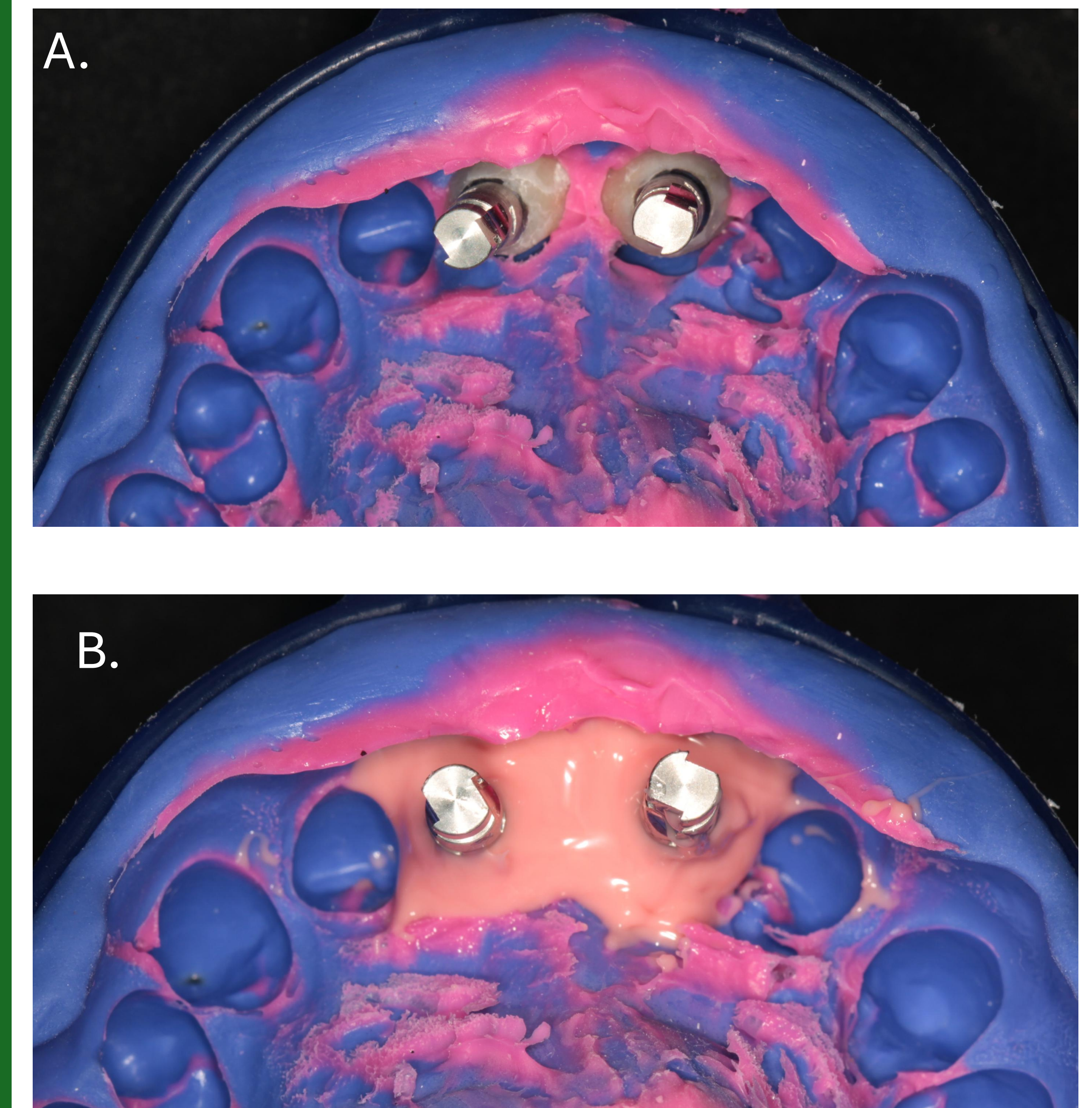


Figure 5. Impressions taken for each case. A) Impression taken with provisionals set in place. B) Gingifast (Zhermack™) placed on impresion before pouring the cast.

Case 3



Master Models for analog workflow



This technique allows for customization of each clinical case, especially in patients with unique soft tissue characteristics, such as highly pronounced interdental papillae. Additionally, in cases with prepared natural teeth, it enables a two-step impression technique to accurately capture the finish line for fixed prostheses (Fig 6). The master models show the accuracy of the impression (Fig 7).

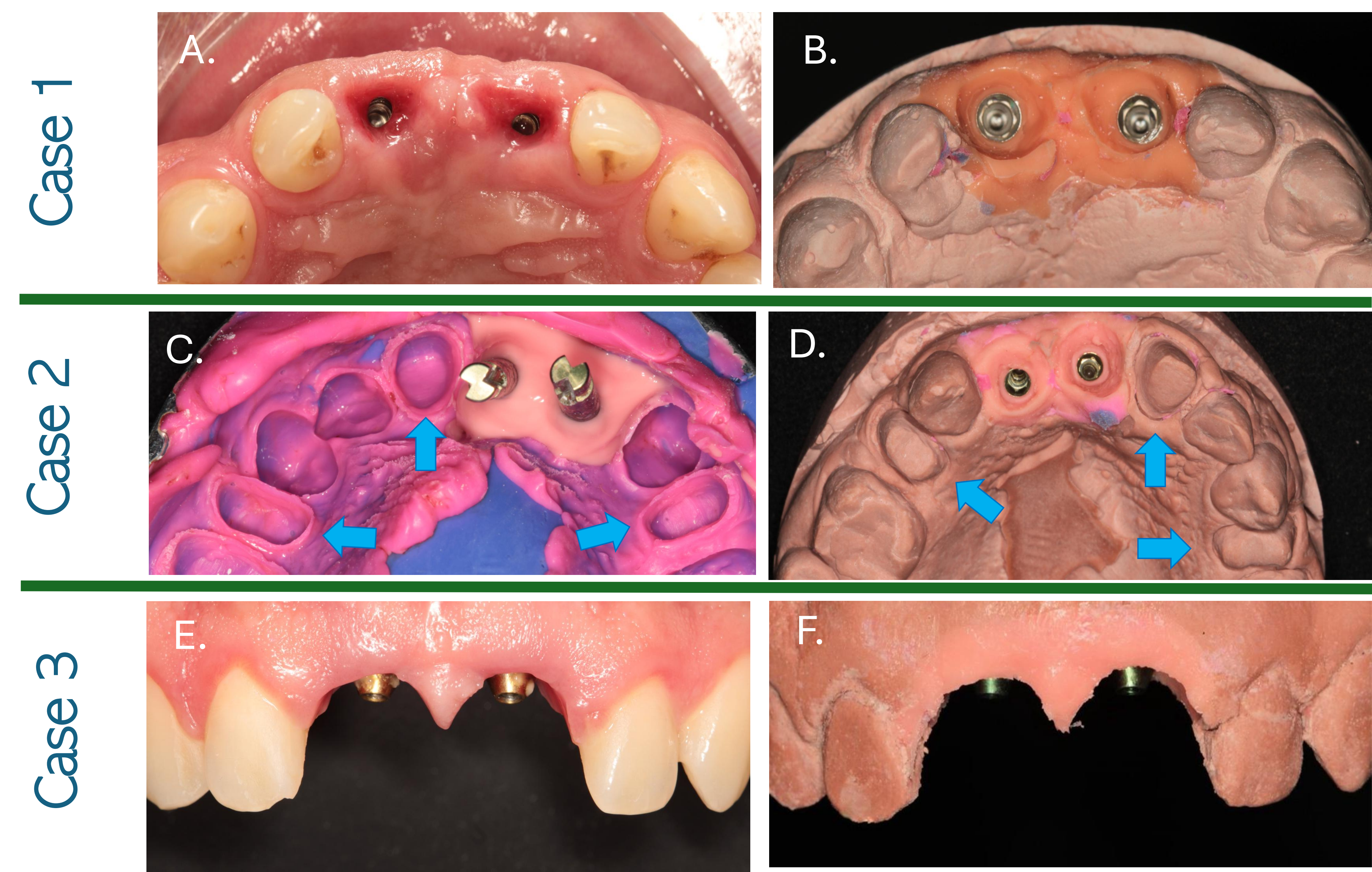


Figure 6. Unique characteristics of each case A) Collapse of soft tissue B) Capturing of emergence profile despite quick collapse of soft tissue C) Mixed implant and teeth fixed prostheses and 2 step impression D) Preparations precisely captured on model E) Pronounced papillae D) Captured papillae on model.



Figure 7. Comparison of master models with intraoral photographs. A) Initial situation. B) Master model, reproducing precisely the initial clinical situation.

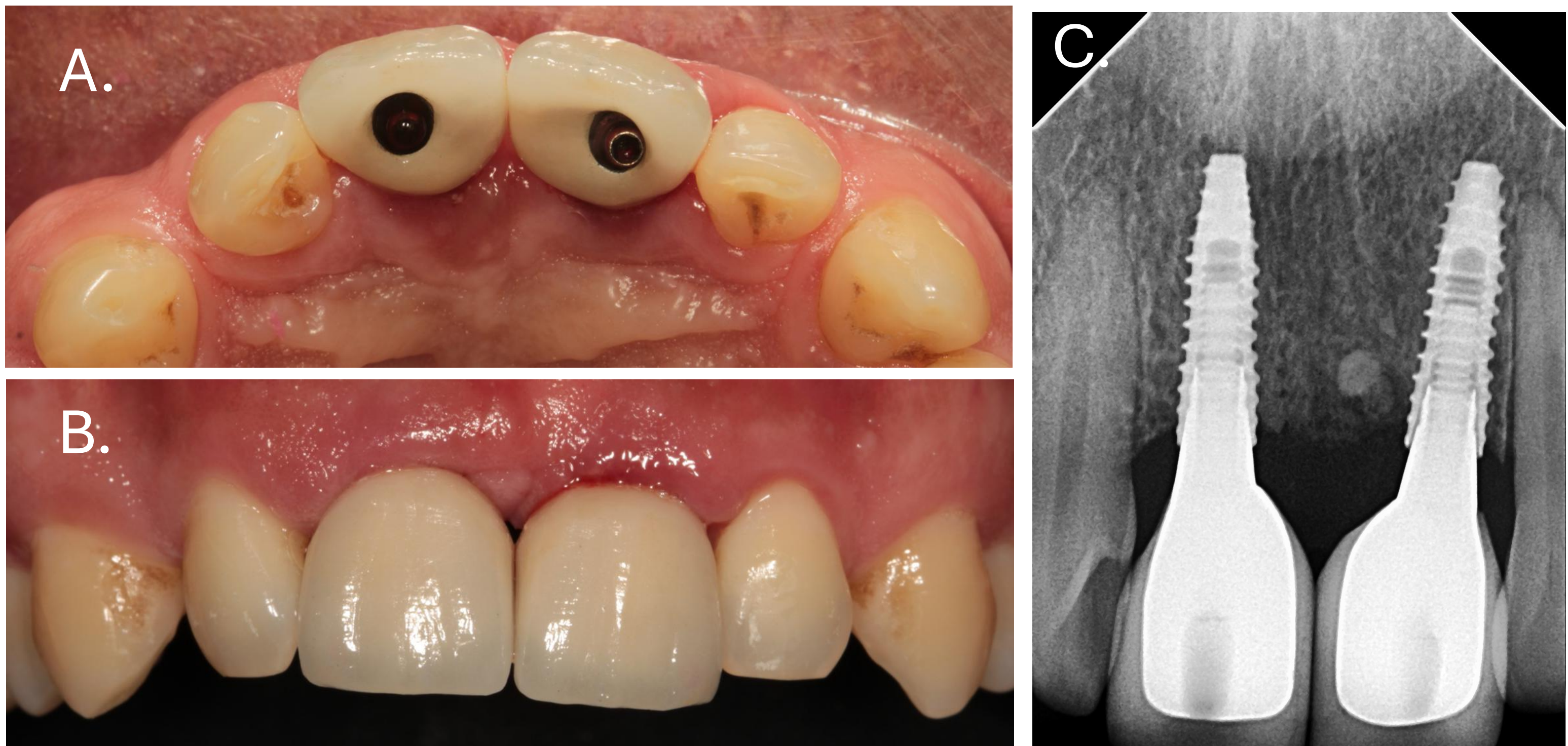
Final Restorations / Results



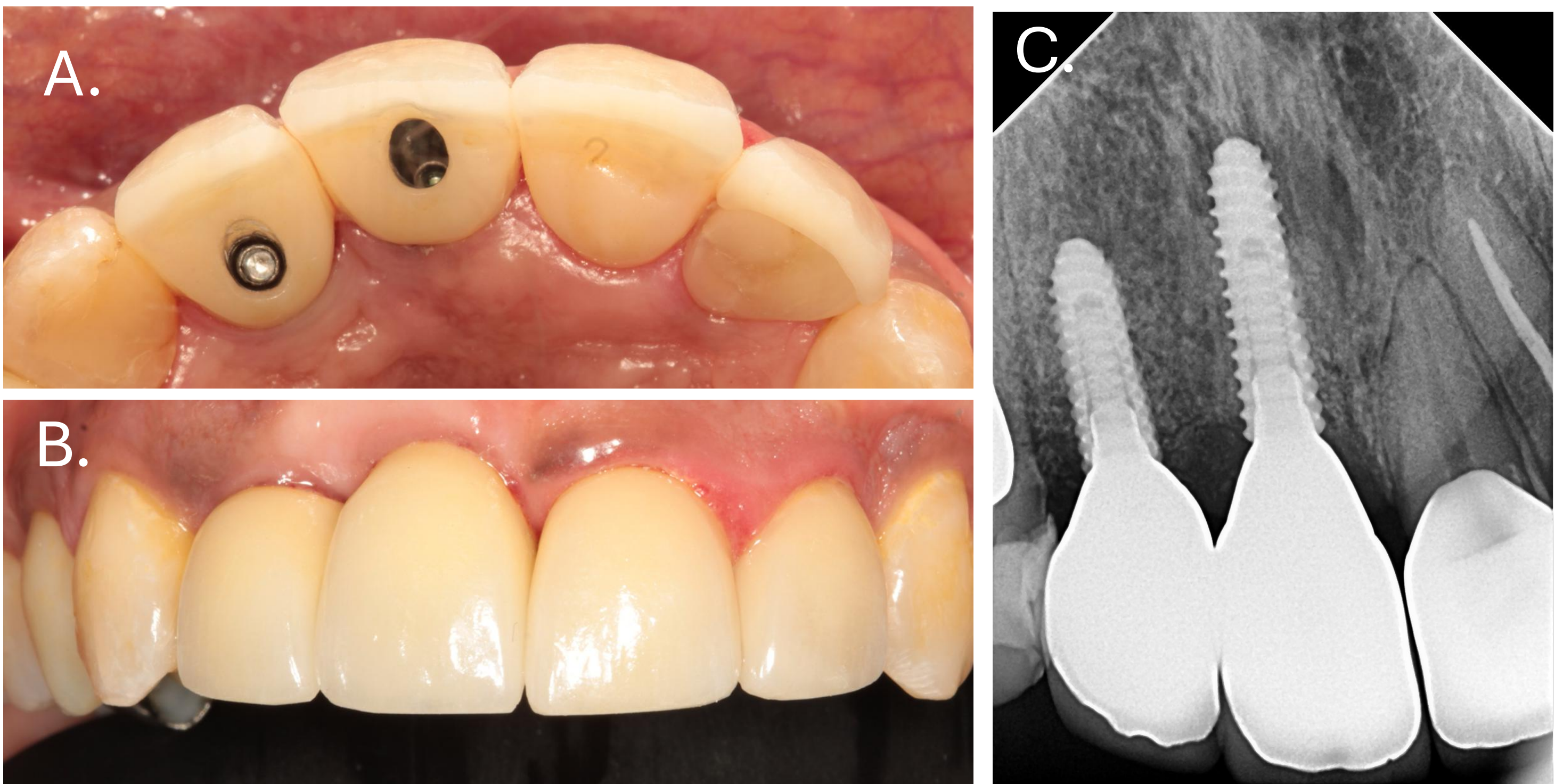
Results: In all three cases, optimal radiographic seating of the restorations on the implants was observed, without discrepancies that compromised adaptation. The peri-implant soft tissues remained stable, with adequate aesthetics. These findings suggest that the f technique dragging impression technique used allowed satisfactory functional and aesthetic results to be obtained (Fig 8).

Conclusion: This technique represents a reliable and effective alternative for taking impressions on implants, especially in cases involving multiple implants, in aesthetic areas, when there are mixed restorations on teeth and implants, or when there are special soft tissue characteristics. Furthermore, it offers advantages such as shorter clinical work time, fewer implant attachments, and the avoidance of perforated trays.

Case 1



Case 2



Case 3

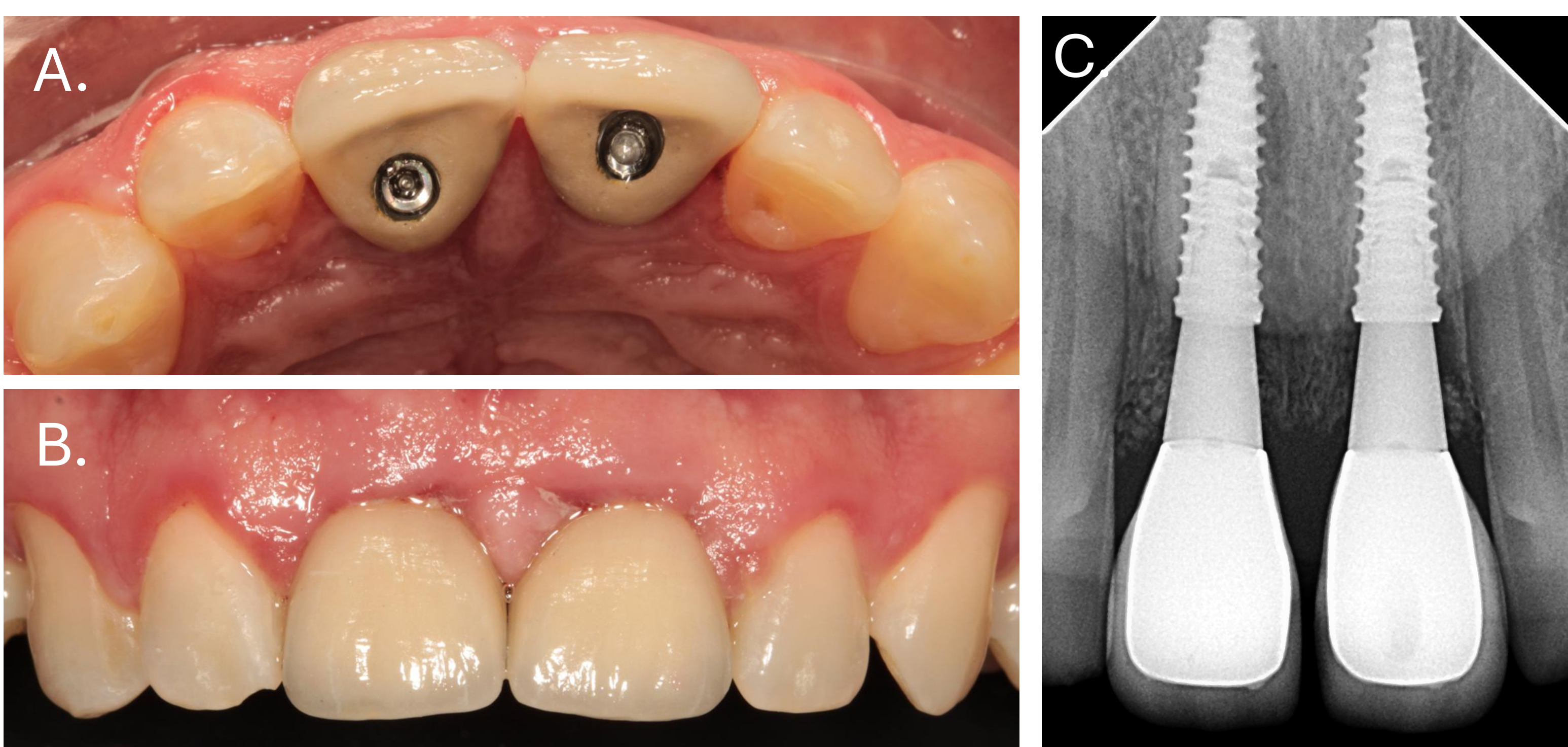


Figure 8. Final clinical cases A) intraoral photograph, occlusal view B) Front view C) Periapical radiograph of two rehabilitated implants using the dragging technique.

