

A Restoration-Driven Approach to Post-and-Core and One-Step Crown Fabrication

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Background

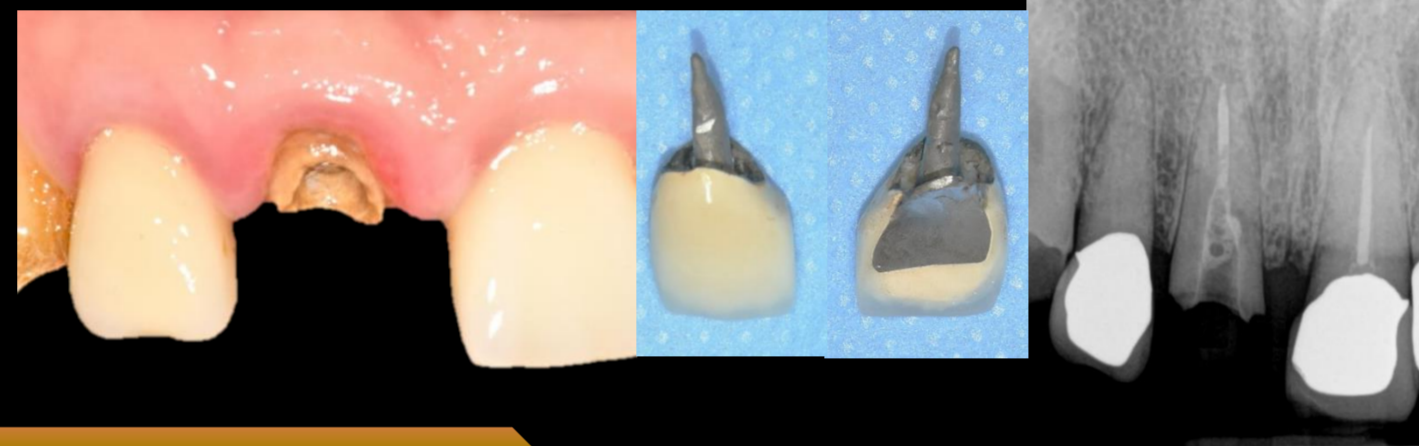
Successful restorative treatment begins with a clear vision of the final outcome. Traditional workflows, which shape the abutment first and fabricate the crown later, often fail to reflect the intended final restoration. This case report presents a direct post-and-core pattern for a patient with a dislodged post and crown. The **previously exfoliated crown**—confirmed by the patient to be both functional and esthetically pleasing—was repositioned **and used as a mock-up to guide the final prosthesis**. A bis-acryl mock-up using putty mold was used to establish the final restoration outline, followed by **a single impression capturing both post pattern and abutment preparation**.

Patient Presentation

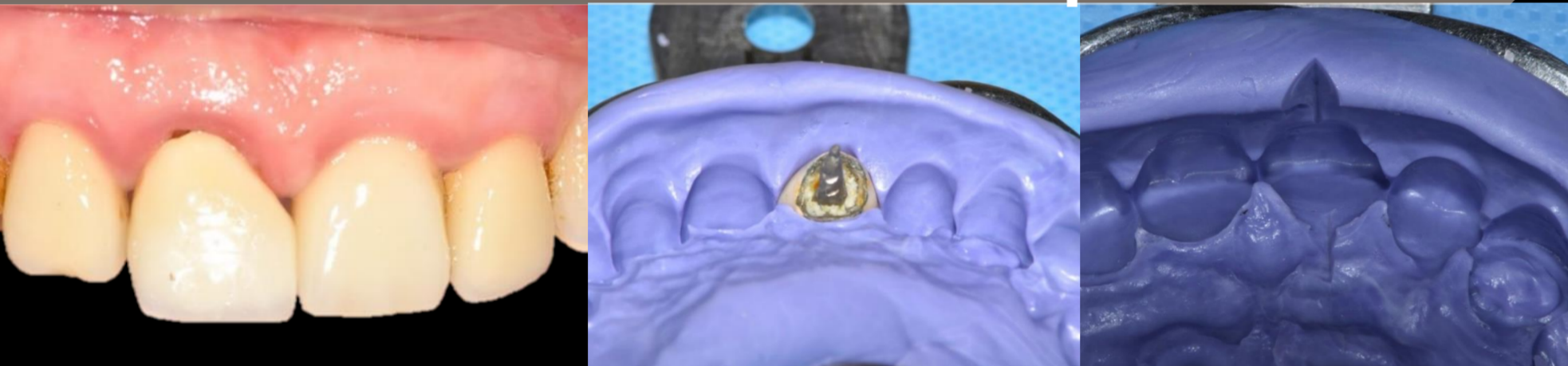
Patient 1: Conventional Prosthesis Fabrication

- **Patient's chief complaint:**
- My front tooth crown fell off.
- **P.M.H:** n/s

➤ Patient's oral status



1. Provisional Matrix Preparation



- Reposition and set the exfoliated crown with TempBond NE (Kerr Corporation, Orange, CA, USA).
- Putty mold was fabricated.

2. Post Space Canal Preparation



- Irrigate the canal with NaOCl.
- Lubricate the canal walls with a layer of petroleum jelly.

3. Initial Post Pattern Fabrication



- Insert a plastic burnout post and apply autopolymerizing acrylic Pattern Resin (GC Corporation, Tokyo, Japan) to fabricate a post pattern.

4. Mock-up Tooth Preparation & Pattern Refinement



- Using the putty mold, place bis-acrylic provisional material for a mock-up.
- Perform restoration-driven crown preparation.

5. Final Impression & Metal Post Casting



- The post-and-core pattern can be retrieved from the final impression for metal post casting, and the remaining impression was used for fabricating the final crown.

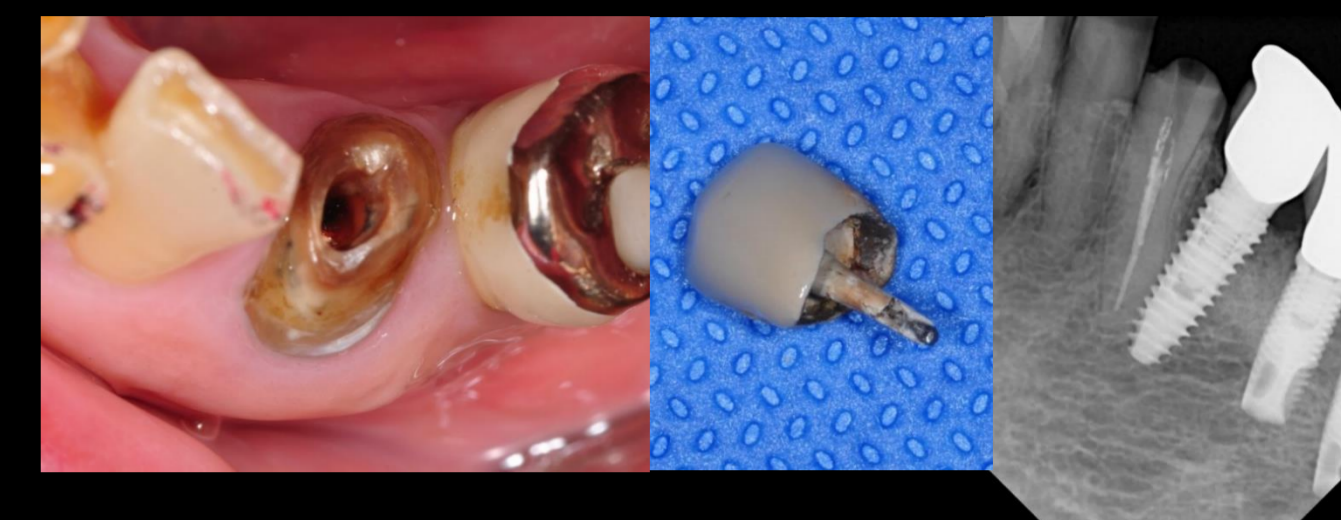
Post-Treatment Radiographs/Photographs



- Metal post and PFM crown cemented with Super-Bond C&B (Sun Medical, Shiga, Japan)

Patient 2: Digital Prosthesis Fabrication

- **Patient's chief complaint:**
- My tooth fell out during lunch.
- **P.M.H:** DM, HL medication
- **Patient's oral status**



1. Provisional Matrix Preparation



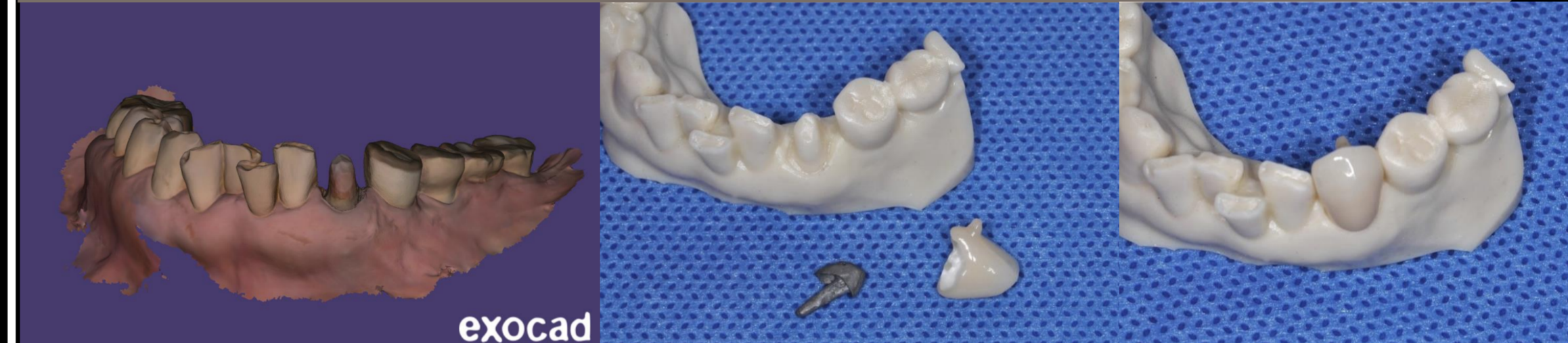
- The same technique was applied as in Case 1 exposed margin was blocked out with flowable resin before putty impression.

2. Post Space Canal Preparation & Initial Post Pattern, Mock-up Fabrication



- The same technique was applied as in Case 1

3. Intraoral Scan-Based CAD/CAM Lab Work



- Restoration-driven preparation was scanned using an intraoral scanner.
- The post pattern was used for casting metal post and scan data was used for crown fabrication.

Post-Treatment Photographs



- The metal post and a full-contour zirconia crown were delivered.

Clinical Significance of Therapy/Summary

These two patient cases outline a **two-visit clinical approach** for restoring a post and crown using a direct post-and-core pattern technique. Utilizing the **patient's validated mock-up** enabled **restoration-driven core preparation**. A single impression captured both the post pattern and abutment preparation, allowing for simultaneous post and crown fabrication. This restoration-driven approach supports **conventional and digital workflows**, enabling the successful fabrication of a single post-and-crown restoration that met the patient's functional and aesthetic expectations within two visits, streamlining the process and enhancing clinical efficiency and prosthetic accuracy.

Acknowledgment

Inspired by the prosthetically guided workflow presented by Dr. Jason D. Lee, Dr. Mona Khan, and Dr. Sang J. Lee (Compendium, 2021).

References

- Lee JD, Khan M, Lee SJ. A prosthetically guided technique for cast post-and-core fabrication. Compendium. 2021 Oct;42(9).
- Jacoby WE Jr. Practical technique for the fabrication of a direct pattern for a post-core restoration. J Prosthet Dent. 1976 Mar;35(3):357-60. doi: 10.1016/0022-3913(76)90263-8. PMID: 768459.