

Re-tapping the Internal Threads of Dental Implants After Fractured Screw Removal: A Case Report

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Introduction

Fractured screw retrieval may distort the internal threads of the dental implant if the retrieval was invasive. Instead of stripping off the internal threads and making a custom post, or replacing the entire implant by surgical means, the internal threads of the implant could be re-tapped to regain its functionality.

Methods

- 65 years old male presented with abutment screw fracture at implant site #13 after 2 months of crown delivery (*Figure 1*).
- The implant size was 3.3mm by diameter and 12mm by length.
- The fractured screw was retrieved but the internal thread of the implant was distorted (*Figure 2*).
- The screw taps were used in the correct sequences starting from No.1 to 4 with increasing diameter to re-tap the distorted internal implant thread (*Figure 3 and 4*).
- A little amount of Vaseline was applied to the taps while working.
- After every half turn of tap in a clockwise motion, it was turned back counterclockwise by a quarter turn to release the stress generated and the remnants cleared.



Figure 3: Dental implant tapping tools.

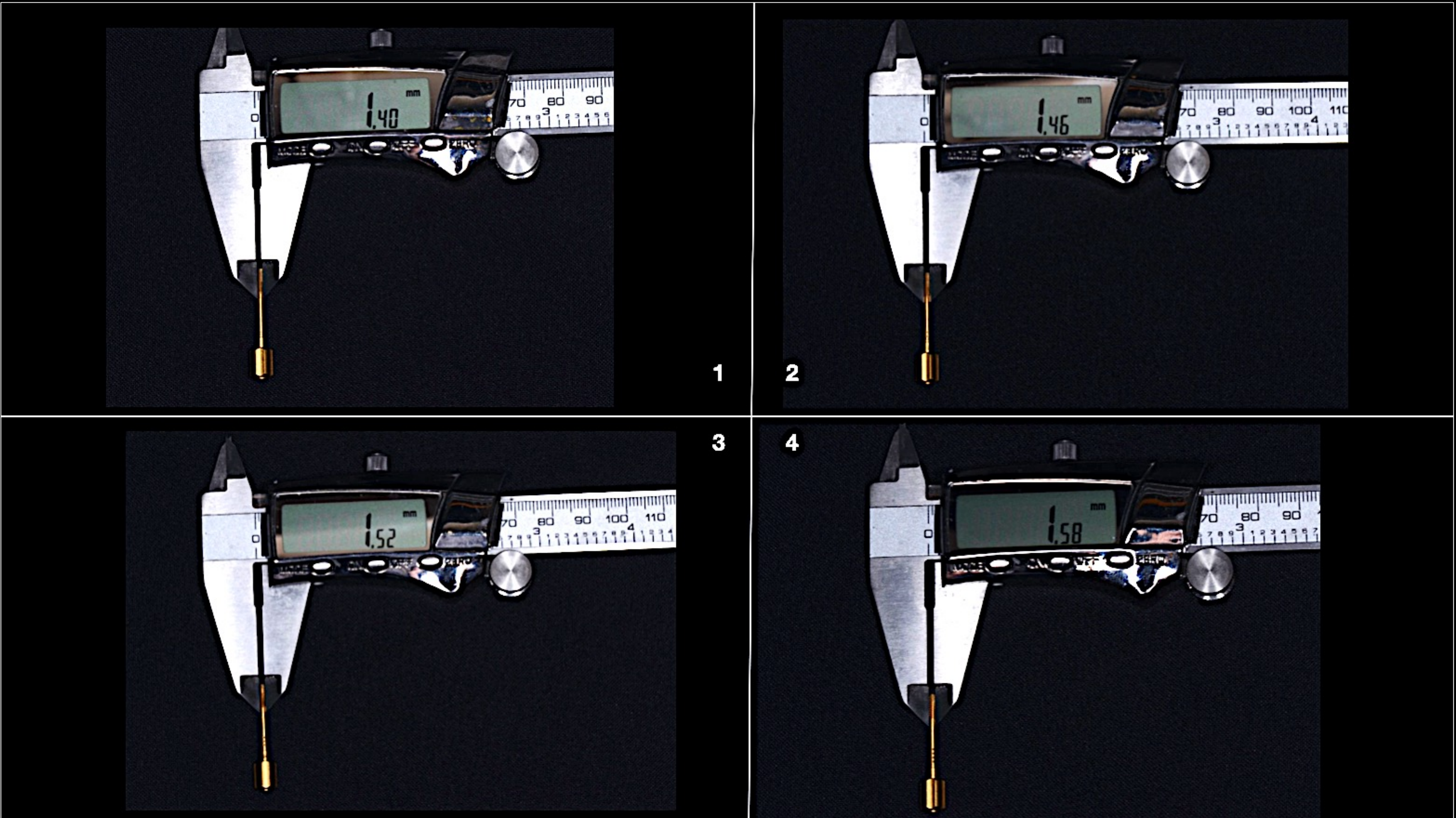


Figure 4: Screw taps with increasing diameters.

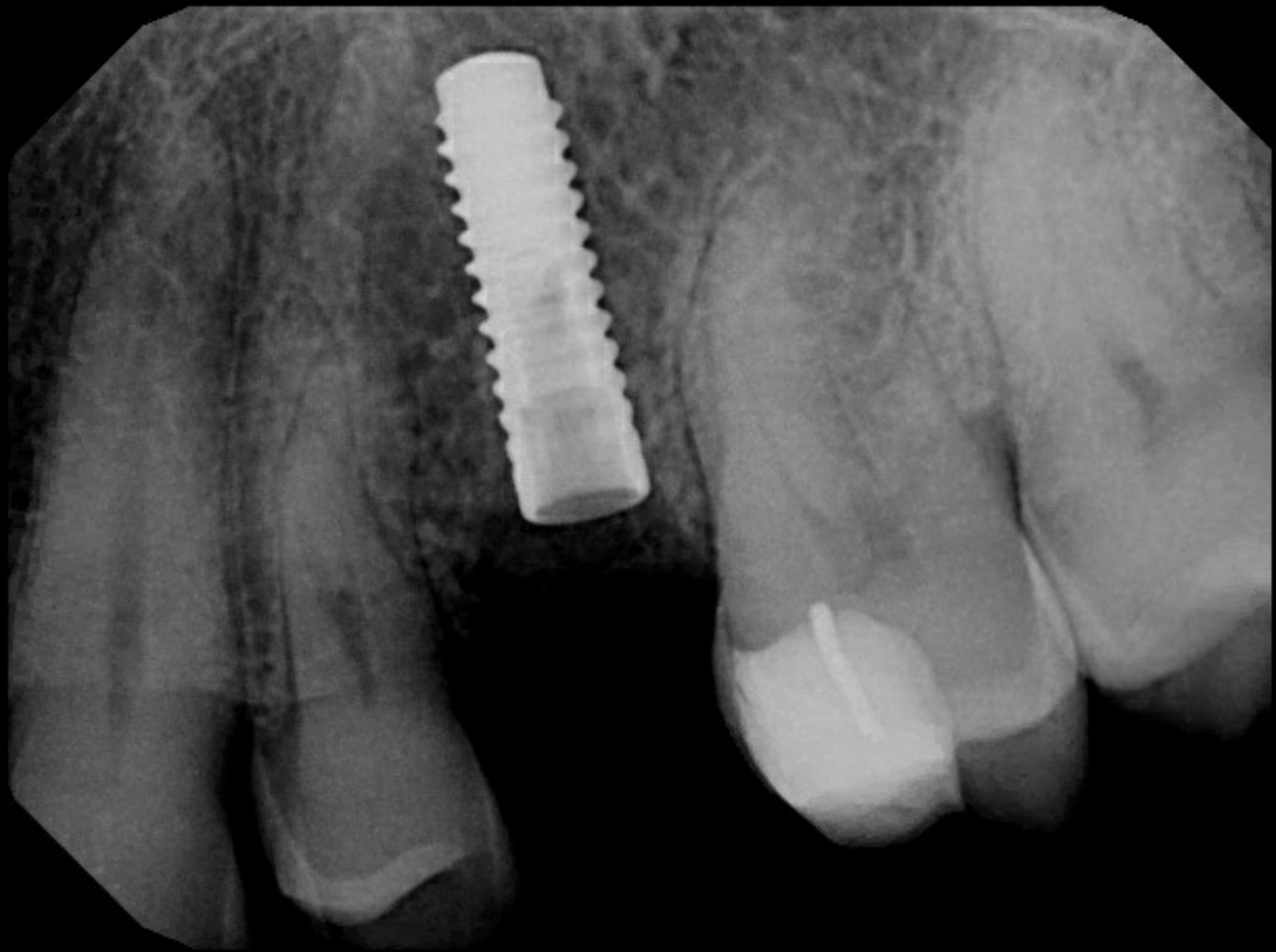


Figure 1: Broken screw in the implant.

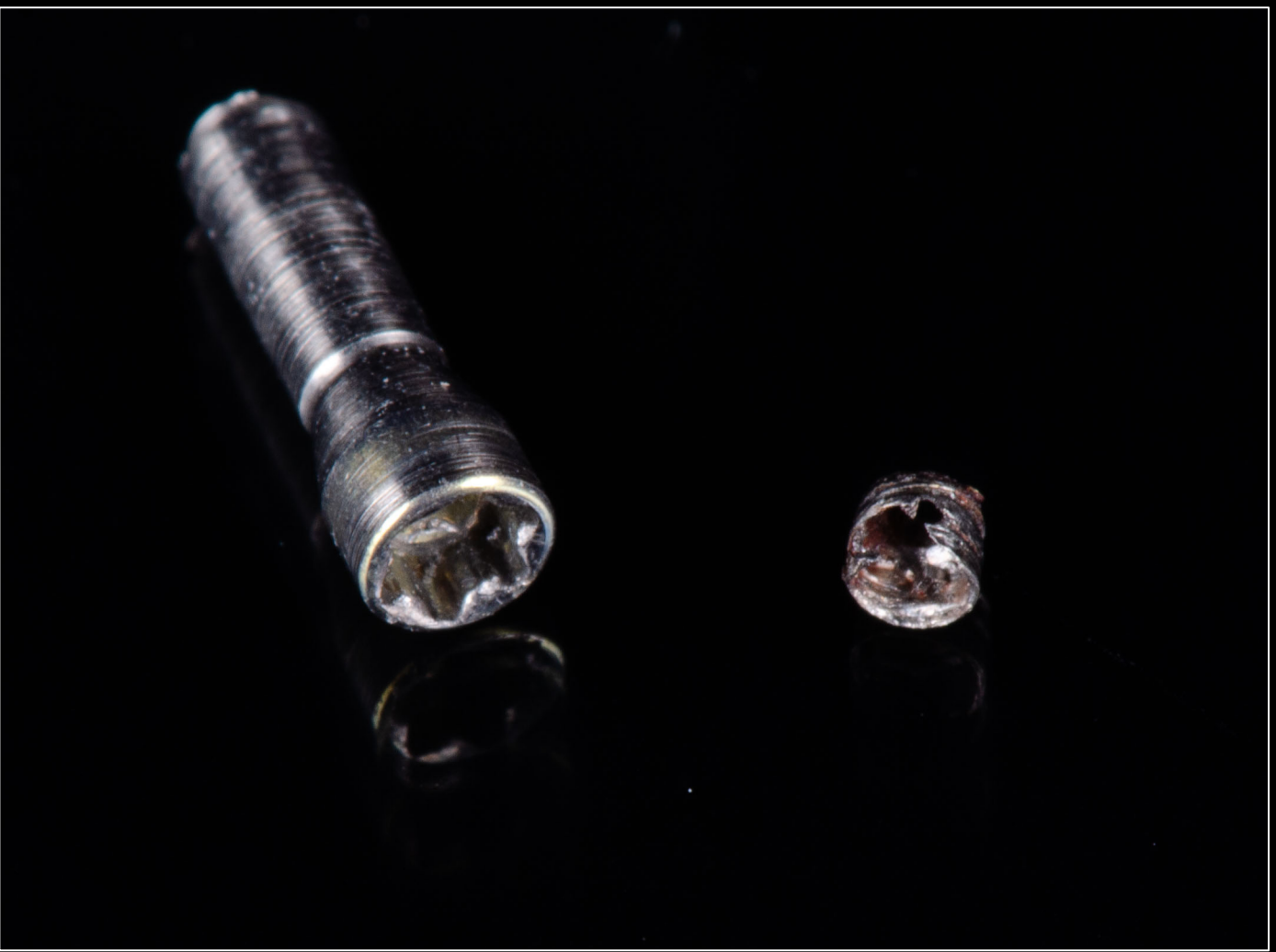


Figure 2: Broken screw retrieval.



Methods

- This action was continued until the tap reach the resistance (*Figure 5*).
- The residues were irrigated with saline in the internal connection of the implant after every tap was used .
- The internal implant threads were checked by fitting a temporary abutment (*Figure 6*).
- Digital impression was taken by using a scan body and the intraoral scanner (*Figure 7*). STL file was sent to the laboratory for screw-retained zirconia crown fabrication (*Figure 8*).
- The final implant crown was made with a broad contact area to prevent any rotation force and occlusion was checked and adjusted.



Figure 5: Re-tapping the internal threads of dental implants .

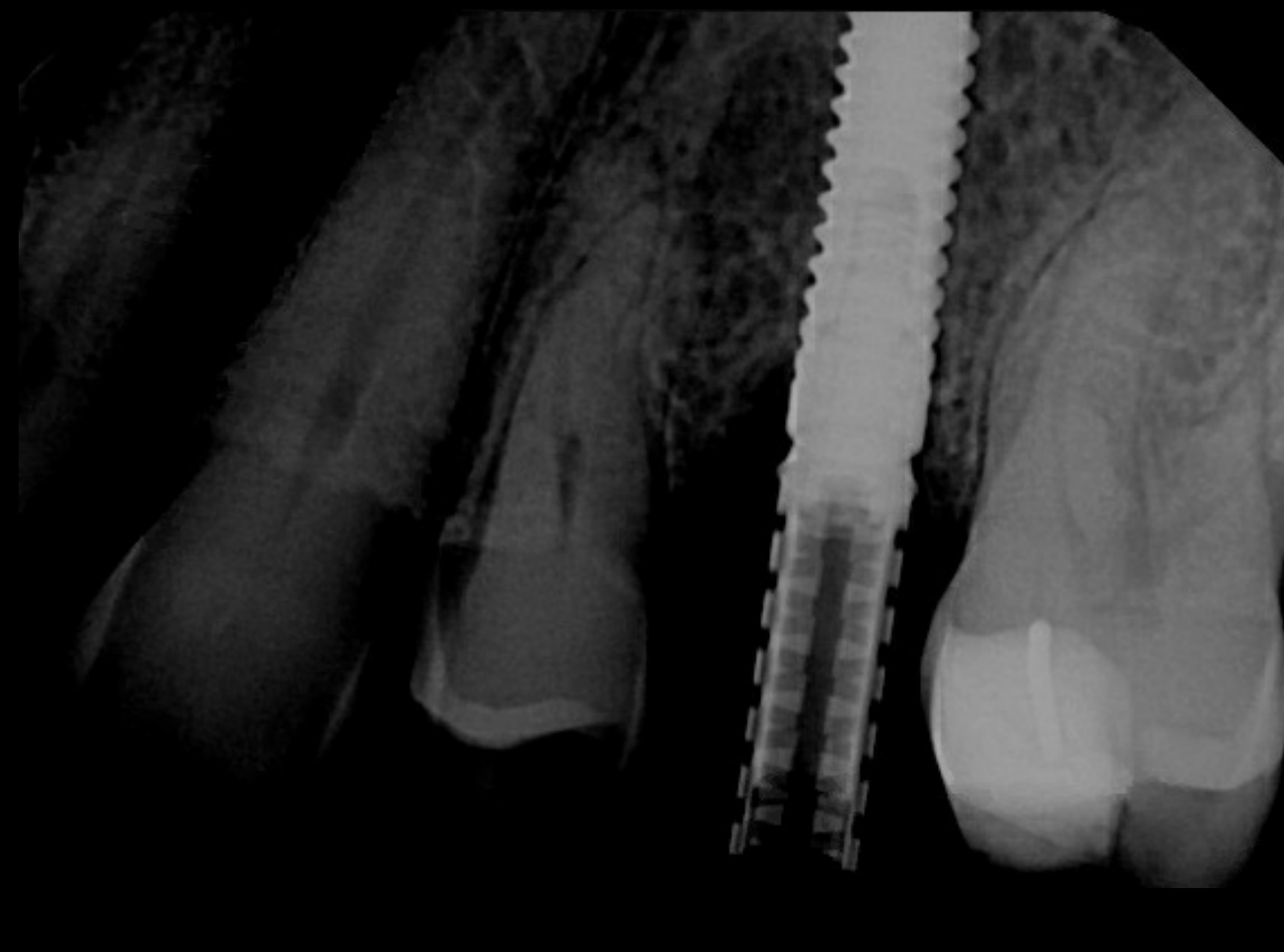


Figure 6: Temporary abutment was seated fully without marginal gap.

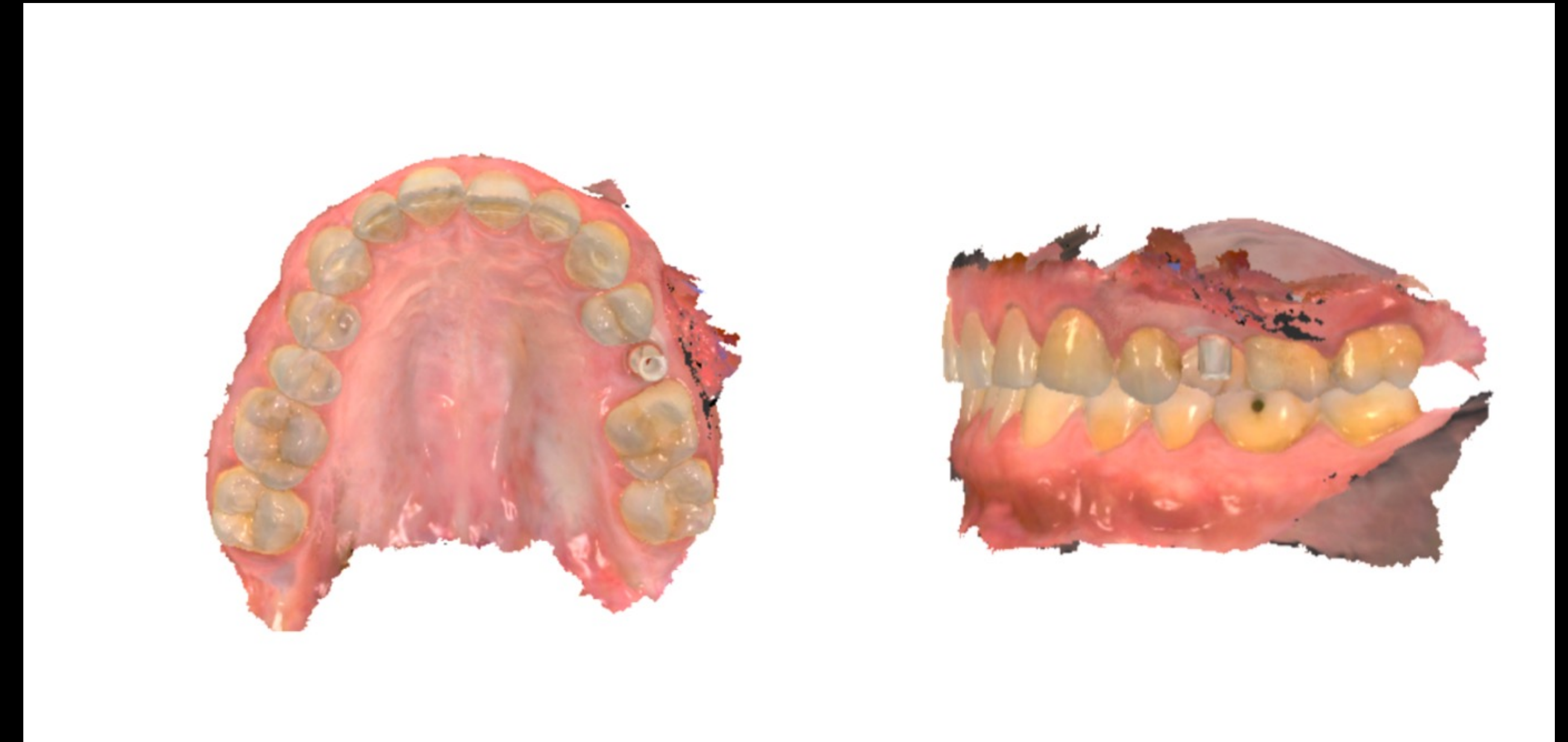


Figure 7: Digital impression was taken with scan body.



Figure 8: Screw-retained zirconia crown



Figure 9: The prosthetic screw was torqued with torque wrench

Results

The temporary abutment was seated fully without any marginal gap. The final implant crown was torqued to 25Ncm with no marginal gap detected both clinically and radiographically at the time of crown delivery (*Figure 9 and 10*). After 3 months of follow up, no marginal gap, bone loss, or prosthetic complications were detected clinically and radiographically (*Figure 11*).



Figure 10: Clinical photos and radiograph after implant crown delivery.

Conclusion

Re-tapping of the implant's internal threads could be an alternative conservative solution after fractured screw retrieval for more patient comfort and minimal morbidity. Therefore, more long-term studies need to be conducted to find out the longevity of the salvaged dental implant after the screw retrieval and internal threads re-tapping.

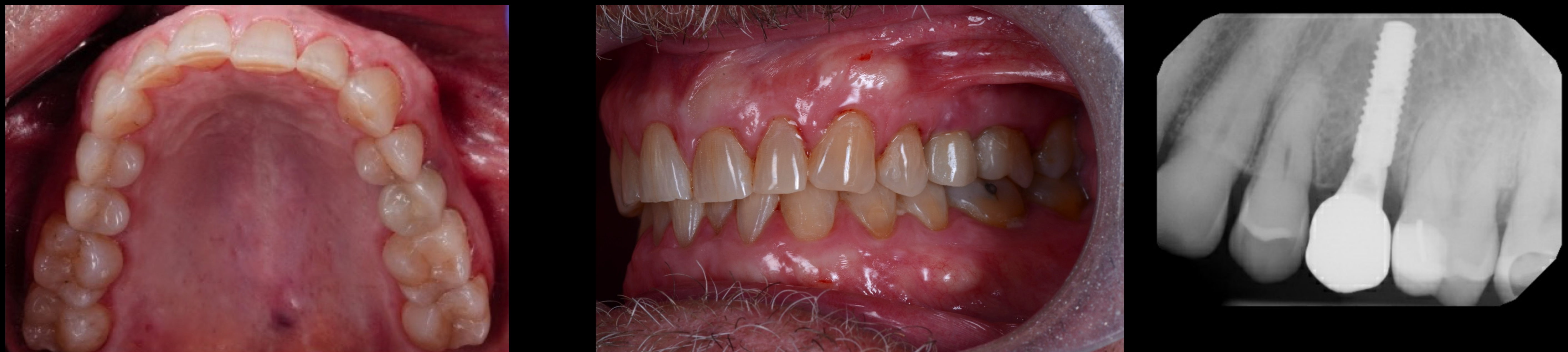


Figure 11: Clinical photographs and radiograph of 3 months follow up.

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