Surgical Protocol for Simultaneous Dental Implant Placement and Extraction of a Retained Root: A Case Report

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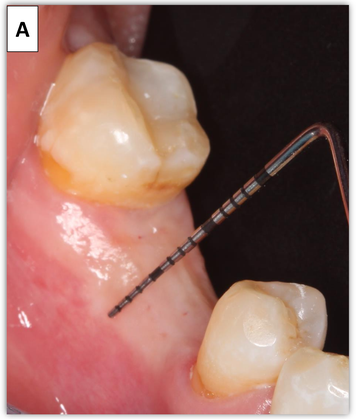
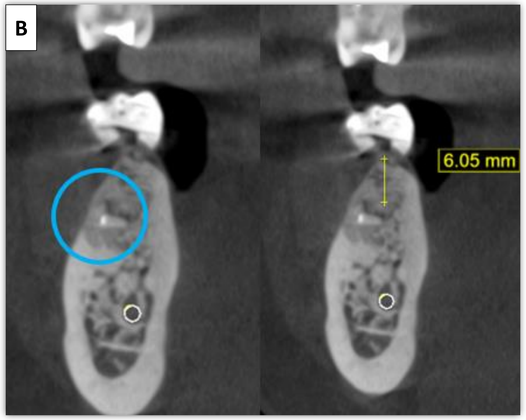
Introduction

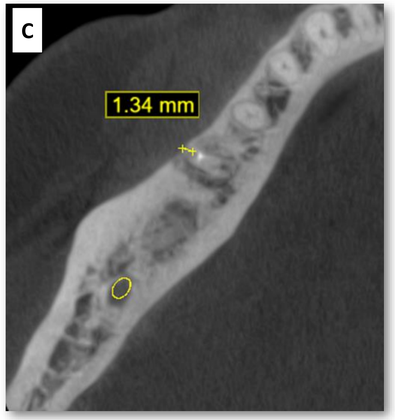
During dental extraction procedures, it is common to encounter intraoperative complications, with root fracture being a notable one. Retained root fragments that go undetected during implant placement can potentially serve as a source of pathogens in the etiology of periimplantitis. The purpose is to present a surgical protocol the simultaneous placement of a dental implant and the extraction of retained root.



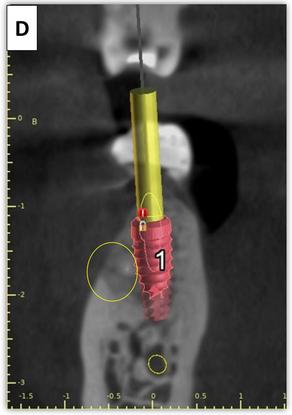
Tissues analysis



Reteined root



Vestibular distance



Implant planing

E **Implant 4.6**

Implant type	Tapered plus conic
Conection type	Internal hexagonal
Body diameter	4.6 mm
Heigth	12 mm

Implant feature

Case presentation

A 49-year-old female patient presented for dental implant placement at the site of a missing tooth (4.6). Clinical analysis of the partially edentulous ridge revealed a thick phenotype and an adequate amount of keratinized tissue. Preoperative assessment of hard tissues was conducted through cone-beam computed tomography (CBCT), enabling analysis of dimensions and the presence of a retained root on the vestibular side of the ridge was identified.

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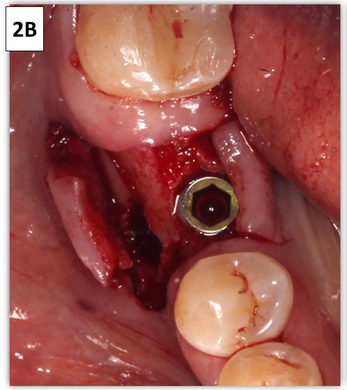
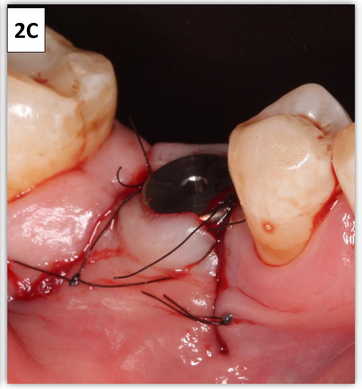
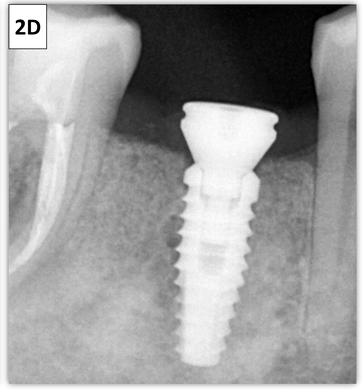
Lateral window Technique



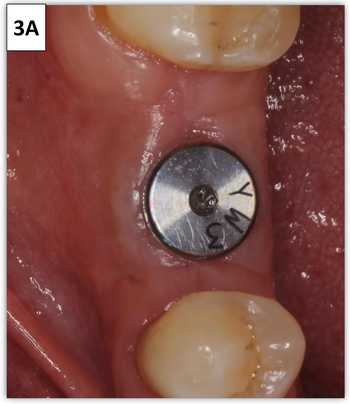
Implant placement



Healing abutment

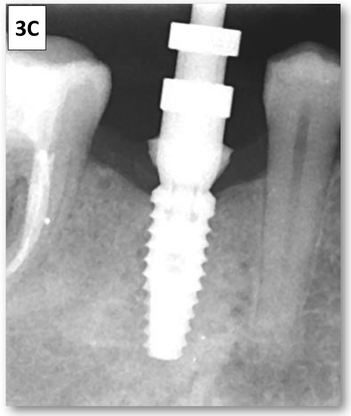


Final radiography



Oclussal view of 12 weeks

Lateral view of 12 weeks



Direc pick-up coping

Methods

A semi-restrictive analog guide was used, crestal and two vertical incisions over the edentulous ridge were made. Full-thickness flaps were used on the vestibular and lingual. The drilling sequence was initiated, and before implant placement, an osteotomy was performed through a facial lateral window to remove the retained root with an apical elevator. The dental implant was placed with an initial torque of 40 N/cm². Finally, a healing abutment was placed, and the flaps were approximated with simple interrupted sutures.

Results

Over a 12-week follow-up period, clinical evaluation revealed the absence of edema, erythema, suppuration, and bleeding. We observed adequate growth of keratinized tissue. Radiographically, in the non-critical bone defect (Fig. 2D) the filling of the same was observed (Fig. 3D).

Conclusion

This approach of extraction of a retained root, using the vestibular lateral window technique, provides an effective minimally invasive solution for the successful management of similar cases in order to decrease the probability of peri-implantitis.

References