

Preserving Teeth, Postponing Implants: A Prosthodontic Perspective on Endodontic Management of Severely Traumatised Teeth

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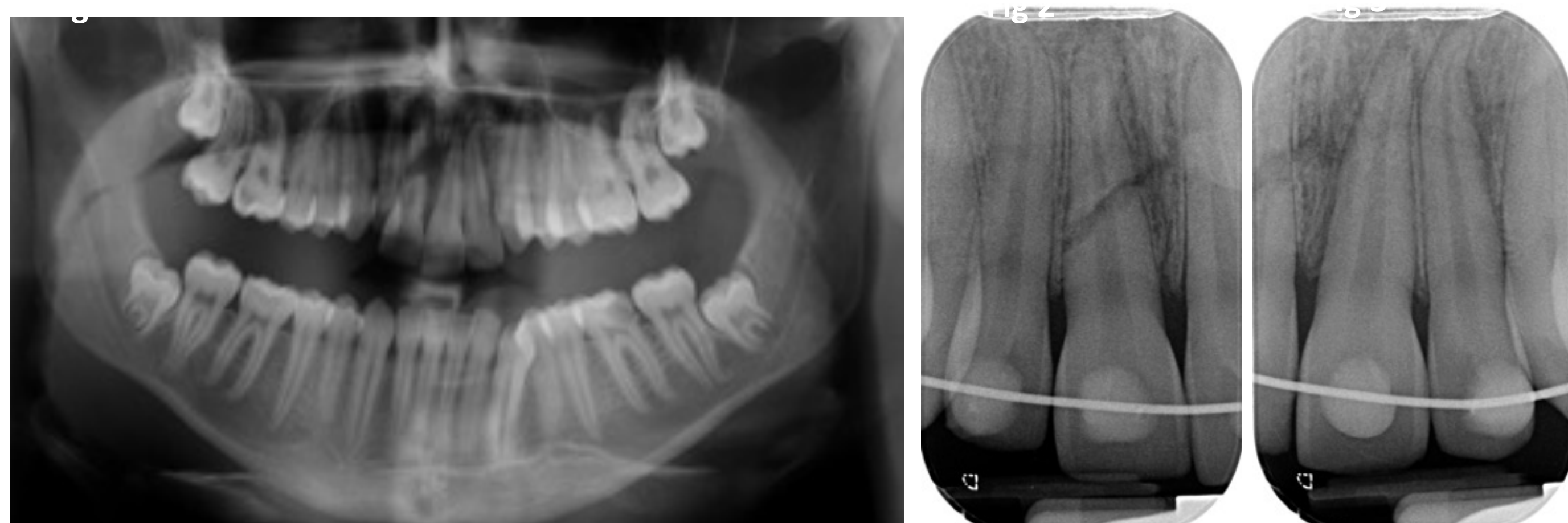
BACKGROUND AND AIMS:

- Luxation injuries are the most common dental injuries¹, often resulting in complicated sequela, poor outcomes and an increased treatment burden.
- With proper diagnosis, treatment planning and follow-up, teeth with severe traumatic injuries can be preserved, delaying need for prosthetic replacement.
- Preserving natural teeth offers significant benefits, emphasizing the importance of incorporating conservative management in prosthodontic planning

CASE REPORT:

Presentation:

- A 17-year-old patient presented to A&E with severe lateral luxation injuries
- The coronal portion of UR1, UL1 and UL2 were palatally displaced resulting in a severe crushing injury to the PDL on the palatal side and separation injury to labial side.
- OPG and Periapicals (PA), Fig 1-3, showed oblique root fracture of the UR1 at the mid-third level, UL1 and UL2 roots appeared sound



Acute management:

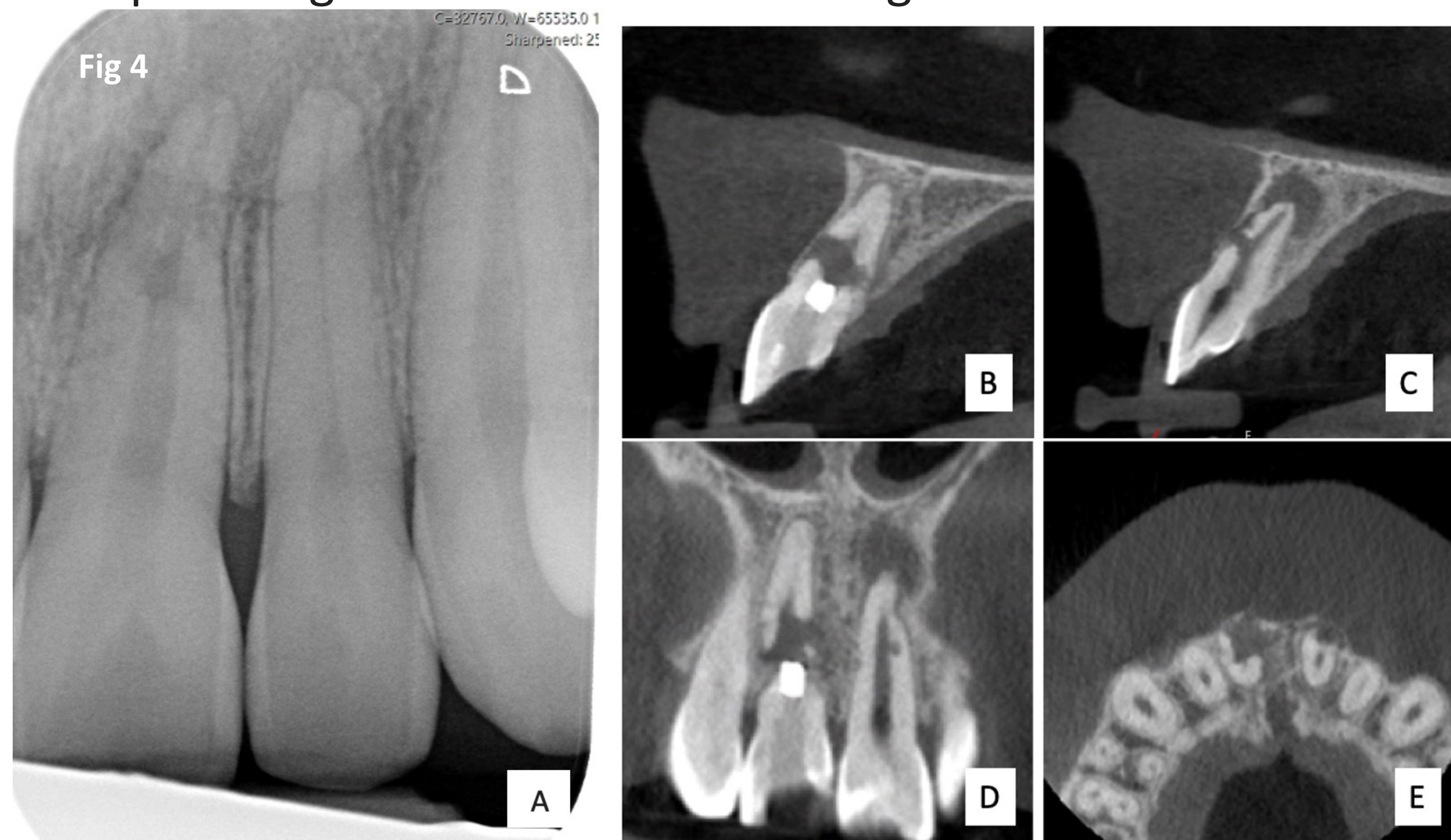
- Repositioning of teeth with 6 weeks provision of a flexible splint
- Extended splinting time due to coronal position of UR1 root fracture
- Pulpal necrosis of the UR1 at 4 weeks, endodontic treatment was completed in the coronal portion to the fracture with an MTA plug.

3 year trauma review:

- PA and CBCT imaging (Fig 4A-E) showed resorption in the mid-labial root of the UL1, fenestrating into the pulp, with a large PARL
- UR1 showed a root fracture, resorption between the two fragments with non-union.

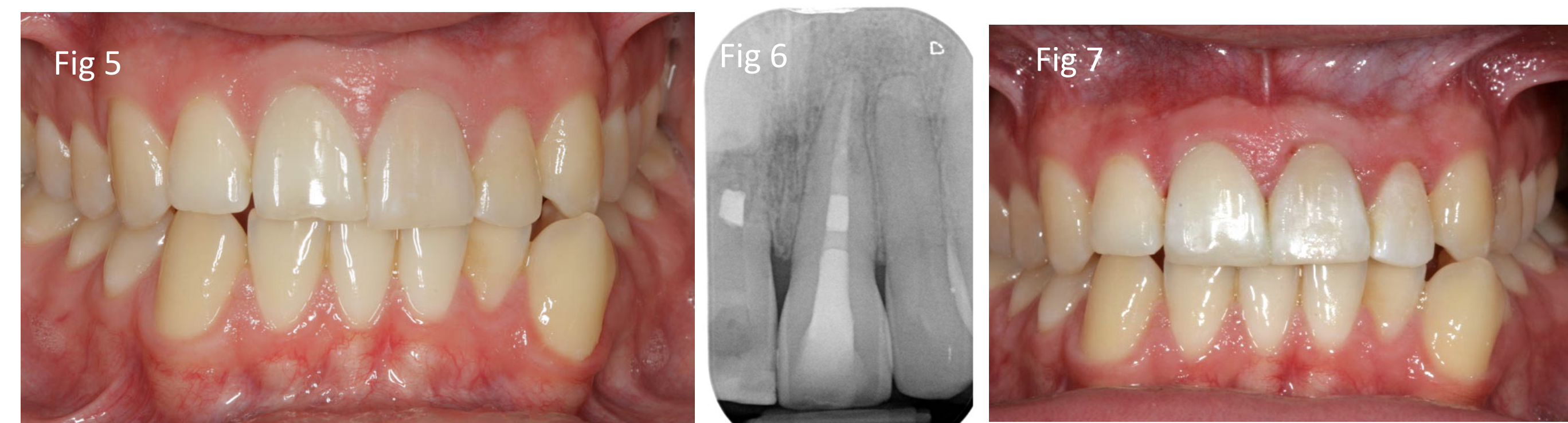
Diagnoses:

1. Chronic apical periodontitis and external root resorption of UL1
2. Mid third root fracture of the UR1 with separation of the coronal and apical fragments due to continued growth of UR1



Discussion with patient

- Poor long-term prognosis of the UR1 and UL1 was explained
- Despite poor radiographical findings, clinically there were no signs of any concern with excellent white and pink aesthetics. (Fig 5)
- Due to excellent aesthetics, no signs of infection or mobility and no symptoms, patient opted to maintain the UR1 and UL1.
- Orthograde endodontic treatment of the UL1 was completed, Fig 6.



Aesthetic considerations

- Composite edge bonding of the UR1 was carried out to achieve symmetry of incisal edge lengths of UR1 and UL1 (Fig 7)
- Patient declined internal whitening of the UL1, considering the risk of external root resorption

8 years post trauma:

- Radiographs (Fig 8,9) continue to suggest poor prognosis of the UR1 with non union of root fragments, but showed good endodontic outcome of the UL1.
- Patient remained asymptomatic, no increased mobility of UR1
- Excellent pink and white aesthetics remained (Fig 10-12)
- Such perfect aesthetics would be difficult to restore prosthetically, especially in the anterior zone in a patient with a high smile line



DISCUSSION:

- This case shows the potential of correct, timely endodontic management to delay or defer prosthetic replacement. While implant-retained crowns provide predictable outcomes, preserving natural teeth offers superior aesthetics, supports alveolar ridge maintenance, and reduces the restorative burden².
- This is emphasised in young patients. This patient would be expected to have an average life expectancy of 70-80 years, meaning that an implant retained prosthesis placed in the second decade of life would have to last 50-60 years.³ Furthermore, extraction of the upper anterior teeth and prosthetic replacement would not guarantee an aesthetic outcome similar to what the patient had, certainly in terms of the pink aesthetics.
- By retaining the patient's natural teeth for at least 8.5 years, potentially extensive and invasive treatment was avoided in the short to medium term and has potentially reduced the complexity of subsequent fixed prosthodontics. Integrating such considerations into treatment planning ensures a balance between conservative and restorative approaches.

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