# An unexpected opportunity...

## Dr Parm Gill from Thorndon Dental Surgery in Wellington, New Zealand, discusses a multi-disciplinary case, which required some creativity to achieve optimum results

A 49-year-old female patient presented as an emergency following a fracture to an upper bridge. She has been a patient of the practice since 2004 after immigrating to New Zealand from the UK, and under my care since 2009. Her oral health was generally very good, she experienced minimal bleeding on probing, had no apparent decay, was a non-smoker and consumed a minimal amount of alcohol.

### Emergency treatment

The patient had fractured a bridge on the UR2-UR3 while eating, and visited the practice in a distressed state in the afternoon of the same day. Recementation was not a viable option as the UR3 had completely broken off subgingivally (Figure 1). The patient wasn't in pain, so some alginate impressions were taken for a temporary acrylic denture to replace the UR2 and UR3. Removable and fixed options were discussed; including fixed and removable porcelain bridges, and an extraction/immediate implant bridge supported by a fixture on the UR3. The patient preferred the latter option as she hated the idea of having a removable prosthesis, as well as the idea of having her tooth ground down for a cantilever or fixed-fixed bridge.

The extra and intra-oral examinations revealed no abnormalities around the soft tissue and minimally restored dentition

**Dr Parm Gill** graduated from the University of Otago, New Zealand in 1995, going on to work in Australia, New Zealand and London. During his time in the UK he obtained two fellowships with the Royal College of Surgeons of England and The Royal College of General Dental Practitioners. Upon his return to New Zealand in 2007, Dr Parm developed an interest in the area of implant dentistry, he became a certified Inman Aligner user in May 2012.
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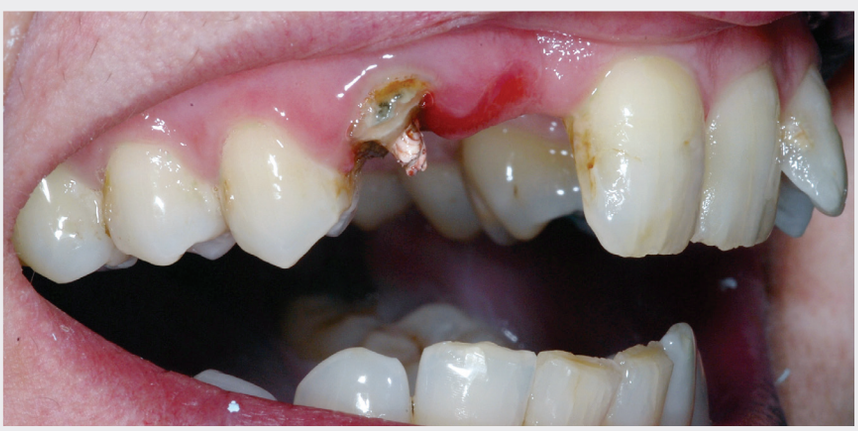

Figure 1: Presentation

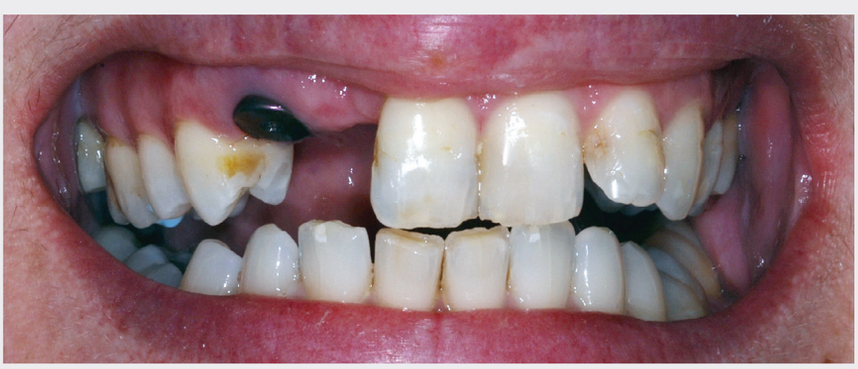

Figure 2: Before aligner treatment, post implant placement

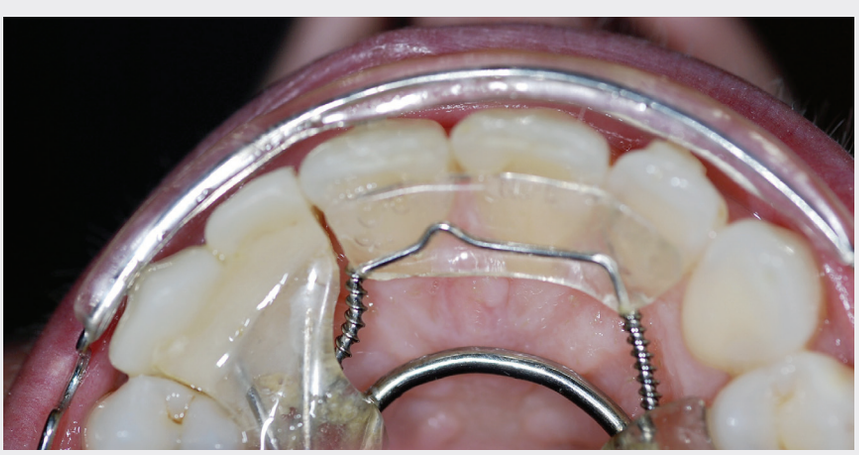

Figure 3: Inman Aligner with denture teeth

with only a few composite and amalgam fillings present. The UR8, UR2, UL5 and LL5 were all missing and a two-unit cantilevered post core/bridge was present from UR3 to UR2 over a root-filled UR3.

Periapical radiographs confirmed no abnormalities with the root-filled UR3, or in surrounding teeth. The UR1, UL1, UR4 and UR5 were all vital with no tenderness on palpation and there was no apical pathology/tenderness associated with the fractured UR3. The patient had a Class 1 skeletal, with a 4mm overjet and 50% overbite profile. The UL2 was proclined and the UR1 and UL1 were retroclined with a slight vertical tilt towards the left when viewed facially.

## Further treatment

Just before Christmas, an acrylic two-tooth denture was provided for the patient as a temporary solution. A month later, atraumatic extraction of the root of the UR3 was performed, followed by curettage of the bony socket and immediate placement of a 14mm Straumann bone-level SLActive implant of 4.8mm diameter (Figure 2). To allow uninterrupted osseointegration, the patient was advised not to wear the partial denture for one week. At this point, she also requested whitening treatment to facilitate the construction of a lighter-shaded implant bridge.

Once the patient's tooth whitening treatment was completed a month later, her primary concern had become the anterior crowding that affected the UR1, UL1 and UL2. Presenting an unexpected opportunity for further treatment to achieve the ideal smile, I suggested various orthodontic options including fixed braces, Invisalign and the Inman Aligner. The patient was pleased with this option and agreed to proceed with treatment due to its ease of use and the shortened treatment time frame. Impressions were taken and sent to the Inman Aligner certified lab (Pearl Healthcare www.pearlhealthcare.com.au) for the technician to design the appliance and the the acrylic UR2 and UR3 (Figure 4).

In order to fit the appliance, IPR (interproximal reduction) was performed using blue strips (0.12mm) on the UL1, UL2 and UL3. Most of the IPR was concentrated on the acrylic UR2 as this was less invasive on the natural tooth structures and it helped to correct the retroclination of the UR1 and UL1. Composite anchors were also placed on the mesiopalatal surfaces of the UR1 and UL1.

The results were very aesthetically pleasing even at this stage, and the most conservative approach was effective for treating the tilting centrals (Figure 3).

The patient returned to the practice every two weeks for the next three appointments, when a further 0.22mm of IPR was performed progressively on the UL1, UL2, UL3 and mesially on the UR2. A composite anchor was also placed on the labial surface of the UL2.

By May, the palatal bow required adjustment to allow the UL2 to move more palatally into the arch. At the end of the month, impressions were taken for a twistflex retainer from UR1 to UL3, and this was fitted a week later. The occlusion was checked and periapical radiographs demonstrated great integration.

An impression was taken two weeks later for the implant bridge and the patient was provided with a removable stiff upper

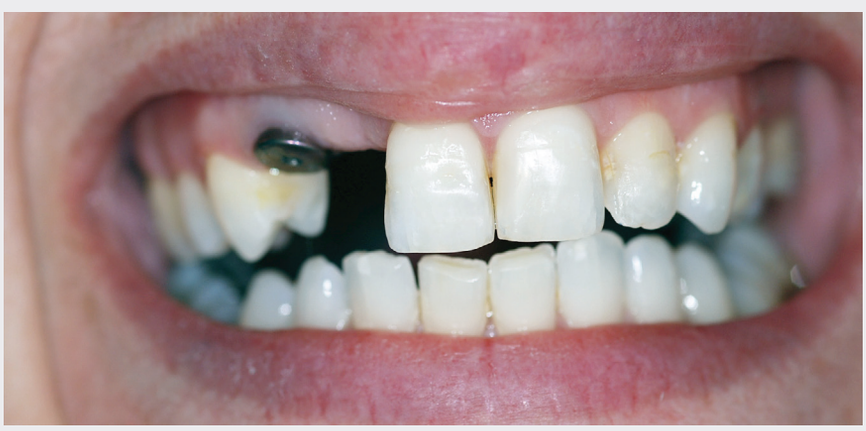

Figure 4: Post whitening treatment

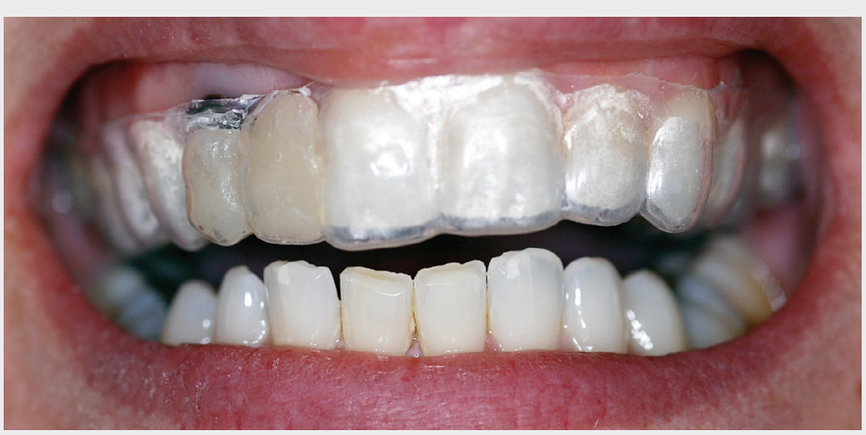

Figure 5: Stiff retainer with denture teeth for aesthetics

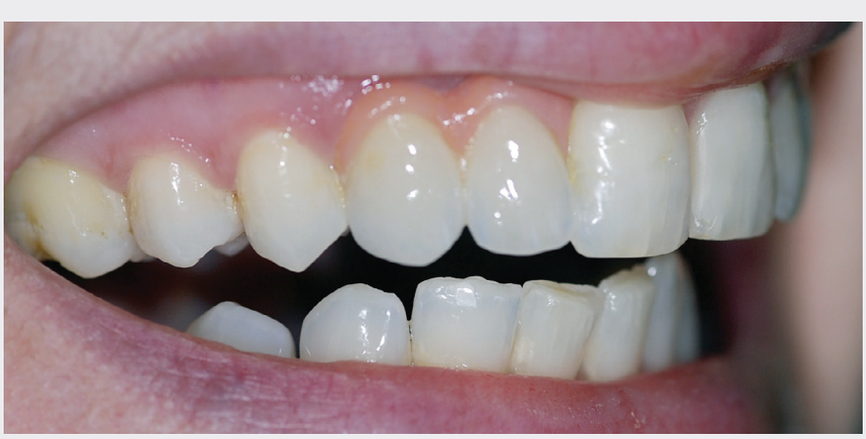

Figure 6: Final results of bridge

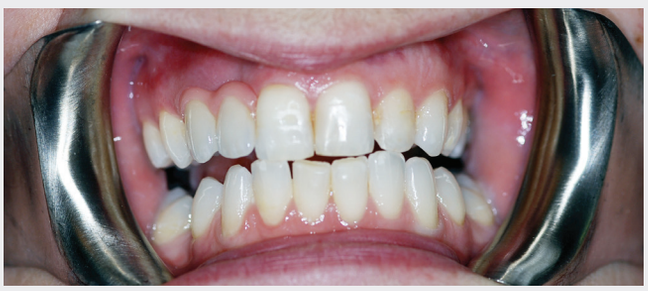

Figure 8: Final results

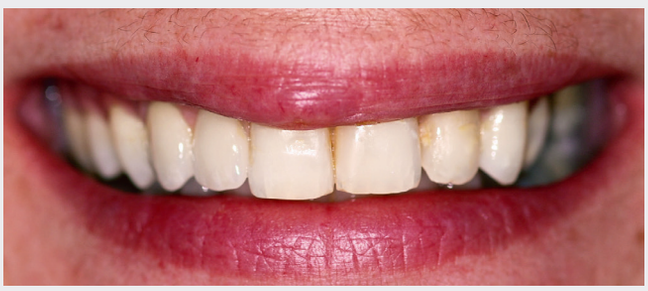

Figure 9: Final results

retainer containing two plastic teeth (UR2 and UR3) for cosmetic purposes (Figure 5). After two months, the implant bridge framework and unglazed porcelain was tried in. The lost gingival contour was restored with 1.5mm pink composite around the bridge to ensure symmetry with the UL2 and UL3.

Twelve days later, the final implant bridge was screwed into place at 30Ncm and the final clear upper retainer provided. As the photographs demonstrate, the results were aesthetically satisfying and the patient was delighted with the final outcome. (Figures 6-9)

## Conclusion

This was quite a straightforward case with some ingenuity from the technician to incorporate some denture teeth into the Inman Aligner appliance, serving a dual purpose of cosmetic replacement and tooth movement. It worked very effectively in such a quick timeframe and the results were exceptional.

I started my first Inman Aligner case in May 2012 and have since successfully completed more than 40 cases and am encouraged by the predictability of the treatment outcome. This is definitely something I feel I will be providing to patients for a while to come.

For more information on the Inman Aligner and training courses, please visit www.inmanalignertraining.com or call 0845 366 5477