

Full arch implant care: the evolution continues (Part 2)



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As mentioned, and demonstrated in Part 1 of this series, it is now possible to pre-fabricate a definitive implant supported bridge (milled titanium bar with acrylic teeth) prior to surgery and be able to place it for the patient at the same visit as the teeth are removed and implants placed. As shown with Patient 1, this treatment works for restorations based upon 4 relatively parallel implants in good bone volume. Unfortunately, patients do not always present with such favourable clinical conditions and there are times when additional implants may be required, the implant placement is not parallel or an intermediate prosthetic abutment is desirable. The following two cases show the application of the pre-fabricated immediate bridge to a wider range of clinical situations.

Patient 2

This patient presented with an upper Kennedy Class III partial denture which he found uncomfortable. The partial denture had a substantial tissue borne section, the vertical dimension was over-closed and the occlusal plane was disrupted (Figure 1). The surrounding teeth were periodontally

compromised and has large restorations present with recurrent decay. After a discussion about the different treatment options and their pros and cons the patient elected to have an Aurora implant bridge.

The planning process involves a CBCT scan to determine bone volume, impressions and a try-in to ascertain the correct tooth position before finalizing the appropriate implant position. Given the limited bone volume and the patient's desire to avoid a bone graft, 4 implants were planned for the anterior maxilla to retain the Titanium/acrylic fixed bridge replacing teeth 15 to 25. The distal implants required a distal tilt to avoid impinging on the maxillary sinus while still maximising the anterior-posterior spread of the implant platforms. The restoration was also planned to fit to prosthetic abutments rather than direct to the implant fixtures.

The surgical guides were made along with the final bridge. Test surgery was performed on a printed model and the bridge fitted to confirm there were no errors in the manufacturing process (Figure 2).

Surgery was conducted under a

general anaesthetic where the teeth were removed, selected areas of bone recontoured, implants were placed, prosthetic abutments were placed and finally the restoration was placed. The patient returned for 3 reviews over the course of 4 months before the bridge was removed and implant integration verified (Figure 3). The cleansable design of the prosthesis and a diligent patient ensured that the prosthesis was well maintained (Figure 4.).

Patient 3

The patient presents with a debilitated dentition (Figures 5 & 6) where most of the upper teeth were not restorable. There was also a component of dental phobia and inability to tolerate dental impressions which lead to the neglect of the upper teeth. The patient had tried a partial denture in the past and was not able to tolerate it as it was bigger than the teeth being present in the mouth. Therefore, she requested a fixed bridge on implants as she saw this as a more comfortable and tolerable solution.

Digital impressions were taken as well as photos for a digital smile design



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6

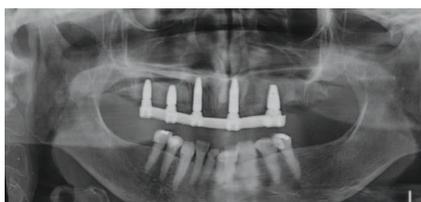


Figure 7



Figure 8

to determine the final tooth position. A CBCT was recorded and merged with the smile design to check for bone to support the restoration. The patient had adequate bone for 5 almost parallel implants spaced far enough apart to predictably replace from tooth 16 to 26.

Once consent was acquired the surgical guides and prosthesis was fabricated. Surgery was performed under general anaesthesia, during which the remaining teeth and tooth roots were removed, bone re-contoured, implants placed, prosthetic abutments placed and finally the prosthesis inserted. The process took approximately 2 hours in total.

The patient returned 3 times over 4 months for reviews after which the

prosthesis was removed and the implant osseointegration was verified. An OPG was taken to verify the fit of the prosthesis on the implant abutments (Figure 7.). The prosthesis was also modified to increase the amount of space between the intaglio surface and gingiva as the patient was not very adept at cleaning her new “teeth”. At the conclusion of the process the patient was able to smile again with confidence (Figure 8.). ♦

Part 3 will show the application of the implant bridge to patients who required grafting and how it can be used with both simultaneous as well as delayed grafting protocols.

For details on Dr Philip Tan's upcoming lecture events contact Rebecca: rebecca@specialistsmiles.com.au or 0432 144 534

About the author

Dr Philip Tan is a registered Prosthodontist from Melbourne. He completed his undergraduate education at Melbourne University before embarking on specialist prosthodontic training at the University of Iowa. Philip works full-time in his private practice in Cheltenham and enjoys providing all aspects of prosthodontic care. He is a passionate exponent of digital dentistry and lectures throughout Australia and internationally on the topic.

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