

4-unit bridge supported by 2 implants using digital workflow



Solutions featured:

3Shape TRIOS
3Shape Dental System
3Shape Implant Studio



Fig. 1.

Case information

Male patient 50 years old.
 Patient would like to replace the upper anterior teeth.

Treatment plan

1. Removal of the upper incisors
2. Placement of 2 implants to support bridge
3. Provisional denture while healing
4. 4-unit bridge construction

Intended final outcome: Screw retained 4-unit layered zirconia bridge supported by 2 Co-Axis implants

Treatment description

Patient presented with mobile upper anterior teeth which were protruding facially. Embarrassed by the appearance and uncomfortable with the movement. (Fig. 1)

TRIOS scan (Fig. 2) and CBCT scan made. Scan data aligned and combined in Implant Studio. (Fig. 3)



Fig. 2.

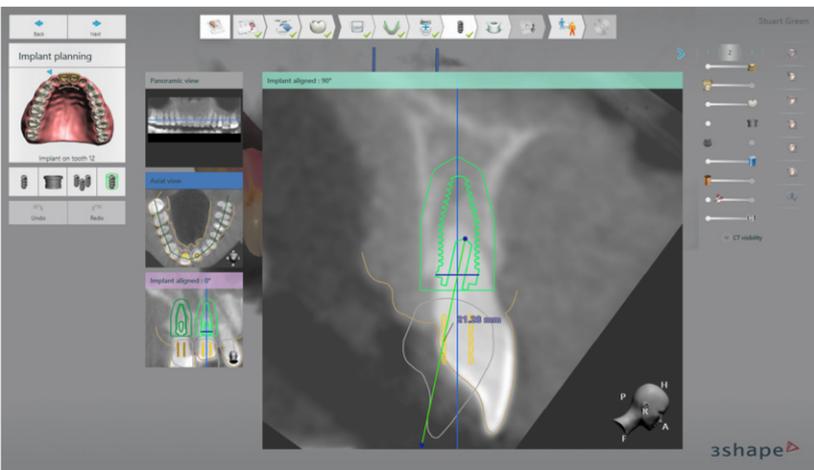


Fig. 3.



Fig. 4.

In Implant Studio, the upper incisor teeth are virtually removed and new teeth are planned. Various implants were tried to see if they could be placed to support a 4-unit bridge. None of the “standard” implants were appropriate as the screw access channel would emerge through the facial surface. This was not acceptable as direct screw access to the abutment screw is needed to simplify the prosthetic treatment and keep the prosthesis retrievable. (Fig. 4, 5)



Fig. 5.

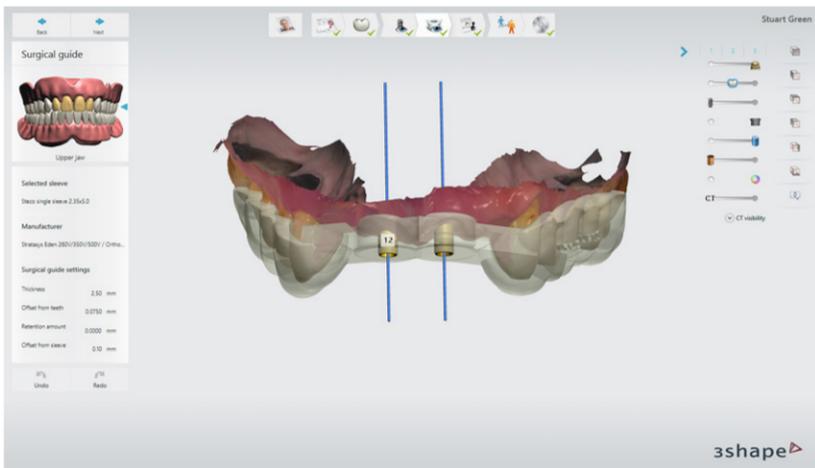


Fig. 6.

Only acceptable implant was the Co-Axis implant from Southern implants. Co-Axis implants incorporate an angle change between the body of the implant and the abutment screw. Implant Studio was used to simulate the placement of the implant and select the correct implant (several different angle versions are available). A guide was then made (Implant Studio) to place the implants at the correct location and angle. (Fig. 6)

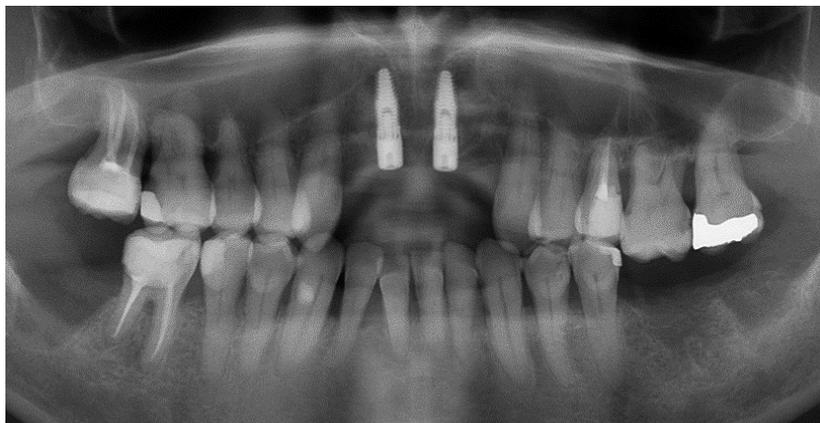


Fig. 7.

The surgery was performed and left to heal for 4 months. The patient used a temporary denture in the interim. (Fig. 7)



Fig. 8.

Once healing was complete, scan bodies were placed and a TRIOS scan made. (Fig. 8) The abutments and bridge were design in Dental System and then milled. (Fig. 9)



Fig. 9.



Fig. 10.



Fig. 11.

The zirconia framework was sintered and layered before being assembled with the abutments and delivered to the patient. (Fig. 10, 11)

Summary

Patient was treated in a predictable and expedient manner using implants that are uniquely suited for this type of challenge. While there was adequate bone volume it was not in the correct location. Normally bone augmentation would be required to add bone in the correct location or compromises with the implant super-structure would be incorporated to compensate. In this instance however both of those were avoided by accurately placing the angle-correcting implant (Co-Axis from Southern Implants). This transitioned the patient from un-aesthetic, mobile upper front teeth to stable and aesthetic teeth in a more timely, less costly and with reduced morbidity.

About Dr. Philip Tan

Dr. Tan graduated from University of Melbourne with his dental degree, then worked full time in private practice for 2 years before going on to further education. He received his Prosthodontic training and degree in the USA. He worked in America for several years before returning to Melbourne to practice here. Dr. Tan's expertise and attention to detail is also recognised throughout the international dental community. He is the recipient of multiple prestigious awards including the Pierre Fauchard Academy Award, the University of Melbourne Prosthodontics Award, and The American Academy of Fixed Prosthodontics Tylman Award. Dr. Tan's articles have been published in multiple scientific journals and he is a reviewer in several Prosthodontic Journals. He is an internationally sought-after lecturer on the topic of aesthetics and the use of implants and technology in restorative dentistry.

The benefits of digital technology for Dr. Tan and his patients

1. Reduction in the number of patient visits as there is no longer a separate scan for radiographic templates
2. Shorter surgical visits
3. Surgeon able to better focus on the patient rather than the position of the implant
4. Excellent outcomes due to simplified restoration construction with correct contours and structure
5. Ability to construct provisionals prior to implant placement or the construction custom healing abutments for control of soft tissue contours from the time of implant placement due to Dental System integration
6. Consistent data transfer between 3Shape software modules without loss of information

The benefits of digital technology for Dr. Tan and his patients

Dr. Tan: "As a clinician, working digitally enables me to plan ahead virtually. When I can do my planning onscreen (3Shape TRIOS® scans and Implant Studio), I am able to visualize implant positions. This makes the treatment more predictable and promotes a realistic outcome.

When working digitally, you might spend more time with your planning in the beginning. But as a result, you spend less time carrying out the treatment. Because of this, working digitally fields a better outcome.

In addition, working digitally helps me provide my patients with a better understanding of the proposed treatment. I can share with them onscreen how the treatment will proceed.

Importantly, because all placement decisions have been pre-determined, surgery time is lessened. This mean a faster and more comfortable treatment experience for my patients."

About 3Shape

3Shape is changing dentistry together with dental professionals across the world by developing innovations that provide superior dental care for patients. Our portfolio of 3D scanners and CAD/CAM software solutions for the dental industry includes the multiple award-winning 3Shape TRIOS intraoral scanner, the 3Shape X1® CBCT scanner, as well as market-leading scanning and design software solutions for both dental practices and labs.

Two graduate students founded 3Shape in Denmark's capital in the year 2000. Today, 3Shape employees serve customers in over 100 countries from 3Shape offices around the world. 3Shape's products and innovations continue to challenge traditional methods, enabling dental professionals to treat more patients more effectively.

Let's change dentistry together

www.3shape.com

3shape 