T32 Dental Centre

3D PRINTING ENHANCES DENTAL SURGERIES AND DELIGHTS PATIENTS

"3D printing has helped our dental surgical center by enabling us to perform more accurate, precise operations while saving our practice time and money as well."

– Wong Keng Mun, T32 Dental Centre founder and managing director

CASE STUDY

Surgical guide produced on a Stratasys 3D Printer.

THE LIMITATIONS OF 2D IMAGES

Since its founding in 2005, Singapore-based T32 Dental Centre has become a leading provider of dental services in the Southeast Asian region. A key factor in the company's success has been its continuing adoption of the latest innovative technology. However, it was only recently that the company was able to take a giant leap forward.

Traditionally, dentists and doctors have depended on flat, 2D images to guide them through difficult and often painful dental surgeries. As a result, the doctors were limited in their ability to know exactly where to operate and place necessary implants.

Since then, technology has expanded to include 3D imaging and personalized data. Doctors can now scan a patient's jaw, see exactly where the problem lies, determine its severity, and formulate a course of treatment. But this process was expensive and prolonged because some of the assets required for each surgery had to be created in Europe at a premium price.

The Value of 3D Printing

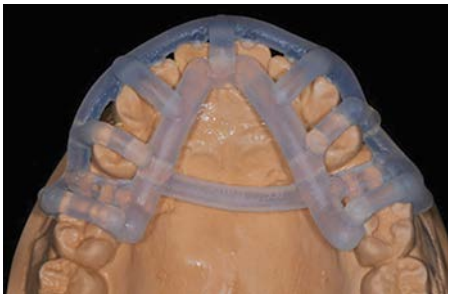
T32 added an Objet Eden260V 3D Printer from Stratasys to its technology mix. This 3D printer builds plastic objects layer by layer using data from computer-aided design (CAD) files that are personalized for each patient. With it, doctors at T32 can now create customized surgical guides in the office in just a few hours. The guides are placed onto the patient's teeth before surgery to pinpoint the exact angle and depth needed for the procedure and correct placement of the implant. Additionally, doctors can print precise copies of a patient's jaw so that they can perform "dry run" surgeries prior to handling difficult cases.

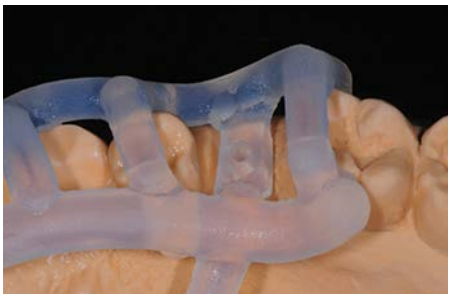
Using the Stratasys 3D Printer, doctors at T32 know what to expect before beginning a surgery so they can create comprehensive treatment plans that address any challenging or critical decisions beforehand. The models and surgical guides also reduce guesswork and the possibility for human error. As a result, surgeries are faster, more accurate, and according to patients, less stressful and painful.

The comments of Yam Weng Fei, an implant surgery patient at T32, are typical. He says, "I was impressed with how smoothly the procedure went. It was minimally invasive and more comfortable – I hardly felt anything. I think using the 3D model definitely helped make the surgery successful and I would highly recommend it to others."

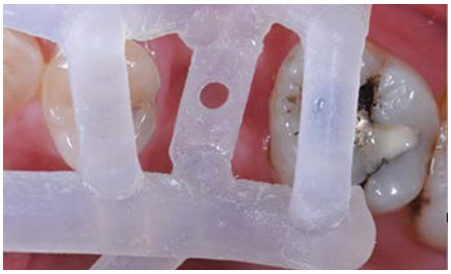
Wong Keng Mun, T32 Dental Centre founder and managing director adds, "3D printing has helped our dental surgical center by enabling us to perform more accurate, precise operations while saving our practice time and money as well."

Photo showing the patient's mouth before surgery.





3D printed surgical guide on dental model prior to surgery.



During surgery the guide pinpoints the location and angle for drilling.

After drilling, the implant is placed into the patient's mouth.

Photo showing the patient's mouth after surgery.

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