

**CASE STUDY**

**ON**

**3D PRINTED SURGICAL**

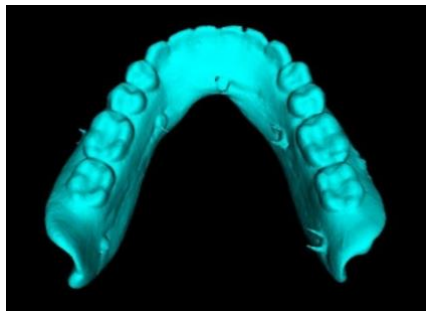
**TEMPLATES**

## Case Back Ground

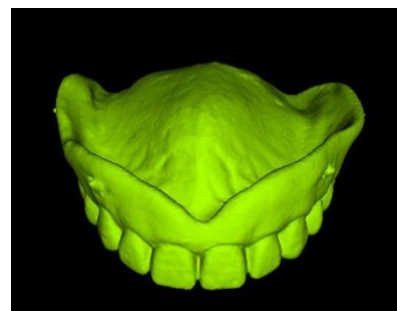
This is a case study of 66 year old male who lost most of his mandibular and maxillary teeth. After considering various alternatives the patient decided to go with All on Four implant placement. In All on Four implant placement the 4 implants placed should support the loads on a whole denture with teeth. The doctor approached think3D team for planning and fabrication of 3D printed surgical guide. Below is the step-wise approach to how we solved the problem.

## Process

- **Inputs**
  - CBCT Scan of patient wearing denture (with radiographic markers / gutta percha markers)
  - CBCT Scan of denture only
  - Stone model

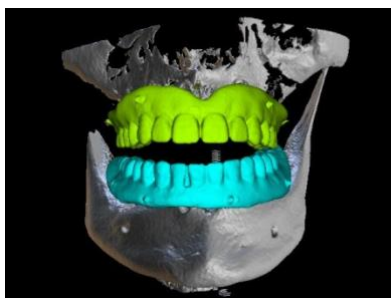


*Scanned Maxilla*

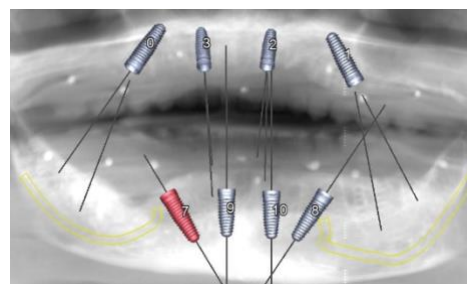


*Scanned Mandible*

- **Planning**
  - Identification of nerve and sinus
  - Alignment of CBCT and Scan appliance
  - Implant positioning



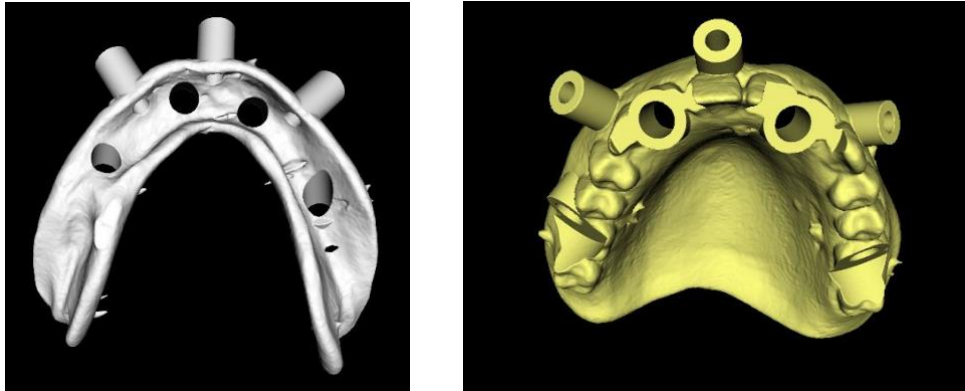
*Model Alignment*



*Planning n Placement Of Implants*

## Design Approval & iterations

- Approval from surgeon after verifying the 3D model from different angles based on the planning images provided



3D models of surgical templates, ready to be fabricated

- **Fabrication**
  - 3D Printing as per the approved design and addition of metal sleeves as per requirement



3D printed surgical templates, fitted in patient mouth

- **Results**
  - Surgery went successfully in less than 40% of the typical time required for the same. Being a guided surgery with pre-planning, it allowed flapless surgery.



Post fitment of implants, as per the plan

## Annexure

### About Dental Surgical Guides:

Dental surgical guides are the fixtures used to drill holes with precision for implants to be placed on Mandible or Maxilla. They are patient specific as the defect varies from patient to patient. Also the jaw bone i.e., Mandible and Maxilla vary in size and shape aspects. The mandibular bone or maxillary bone available for the operation is surrounded by nerves, sinus which should not be disturbed unless required. Though the quantity, quality and density of bone can be seen using Cone Beam Computed Tomography (CBCT) scans, they may not serve as the best resource for 3d positioning and imaging.

### Our offerings at thinkLIFE

Our team comprising of medical practitioners, radiologists and engineers work cohesively to give the apt solutions required for the patient. We use 3d imaging software to plan the implants and print them using 3D printing technique to create the guides patient specific.





## **CONTACT US**

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