

SURGICAL GUIDES FOR IMPROVING DENTAL IMPLANTATION

Qobiljonov J. Q.

Tashkent State Medical University

Abstract

This article analyzes complications that may arise during dental implantation and measures to eliminate them using surgical guides. Methods for preventing and treating complications using surgical guides are presented.

Keywords: Dental implantation, Surgical guide, Aesthetics, Function.

Introduction

Dental implants are widely used in modern dentistry to eliminate complete and partial edentia. However, the lack of use of surgical templates in All on 4 and All on 6 operations increases the risk of non-parallelization of the dental implant in some cases. Therefore, it is necessary to introduce the use of surgical templates into clinical practice. The preparation of surgical navigation templates is a multi-stage clinical process. Each clinical and laboratory stage requires maximum accuracy. Surgical navigation templates are necessary for accurate implantation and placement of dental implants in an orthopedically correct position. The use of surgical templates during dental implantation helps to prevent intraoperative injuries.

Relevance of the topic:

In the last 10 years, there have been many improvements in the field of dentistry. Especially in the field of dental implantation, surgical templates have become widely used, which has increased the accuracy of implant placement, the number of complications, patient health and the efficiency of the implantation procedure. The use of surgical templates in critical atrophy of the bones contributes to the successful completion of dental implantation, especially when installing pterygoid implants and zygomatic implants. This topic is of relevance and practical importance in practice, as it increases the long-term stability of the implant and the efficiency of the overall treatment process.

Main part:

Surgical cast is a three-dimensional partotype of the patient's jaw with special holes for future implants.

Surgical casts come in several types depending on how they are made.

*Acrylic

*Polymerized

*Plastic

*Cad/Cam technology

A high-precision surgical cast made using a 3D printer.



With the help of surgical impressions, it is possible to see not only the placement of the implant, but also the placement of the future dental crown. In patients with complete and partial edentia, it is possible to achieve high results by placing a temporary dental crown on the patient in a short time using multi-units after All on 4 and All on 6 operations.

A 53-year-old male patient presented to the clinic of Tashkent State Medical University complaining of bleeding gums, bad breath, falling dentures, food debris, and aesthetic defects. The patient reported that his teeth had begun to break at the age of 28 (diabetes mellitus was diagnosed).

On examination of the oral cavity, redness and swelling of the gums were detected, and bleeding gums were detected on palpation. Figure-1

Radiological diagnosis and scanning of the oral cavity.

At this stage, the patient was referred for 3D X-ray imaging and scanning of the dental rows (SHINING 3D AORALSCAN 3 WIRELESS) which is useful for creating a surgical impression and analyzing the primary prosthesis.



Figure-1. The patient's mouth position when applying dentures. Figure-2 X-ray image of the patient

Diagnostics, virtual planning and treatment plan development stage.

Treatment plans were made through computer modeling. First, 3D X-rays and models of the dental rows with and without dentures were scanned from the patient. Figure-3 The collected data was sent to the clinical laboratory, and implants were placed taking into account the location of the gums, bone, and teeth using the computer modeling program (3Shape Implant Studio), and the obtained virtual data was discussed with the patient. The surgical copy was printed on the Shining 3D AccuFab-D1s printer. Figure-4

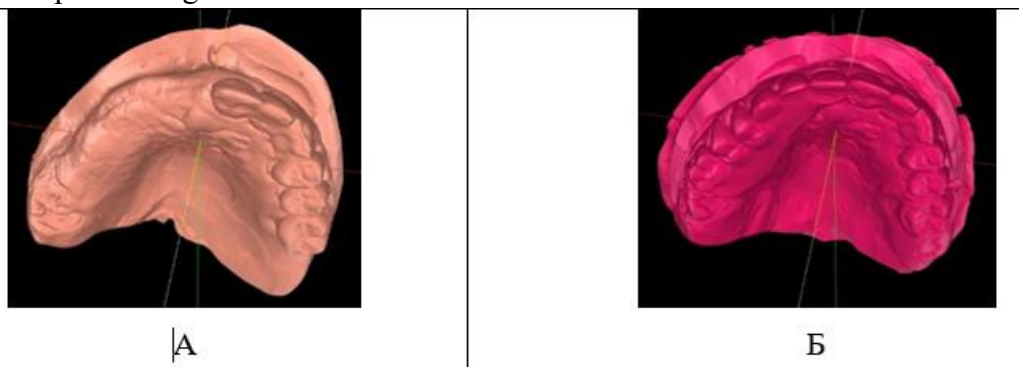


Figure-3. Patient's mouth without dentures (A) Patient's mouth with dentures (B)





he following treatment plan was developed in consultation with the patient. All teeth in the upper jaw were extracted and prepared, and 4 B&B implants were placed in the upper jaw using the All on 4 method using a surgical copy. Figure-5

A temporary denture was placed on the patient within a week after the surgery.

After 3 months, the temporary dentures were removed and permanent teeth were placed.

Figure-4.5

Planning the implant site.

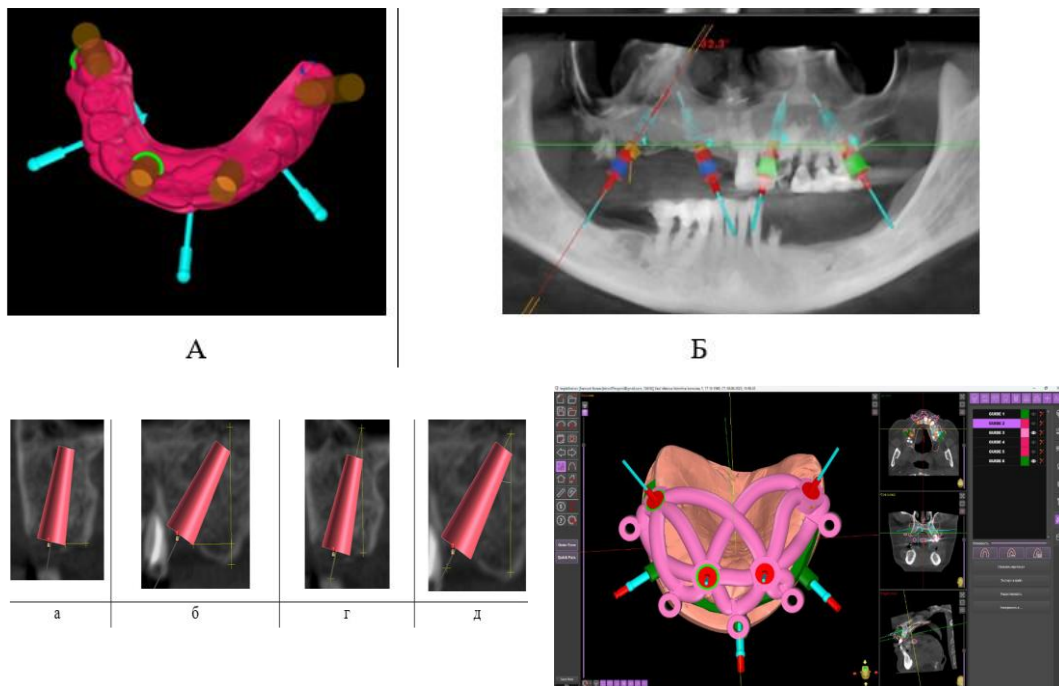
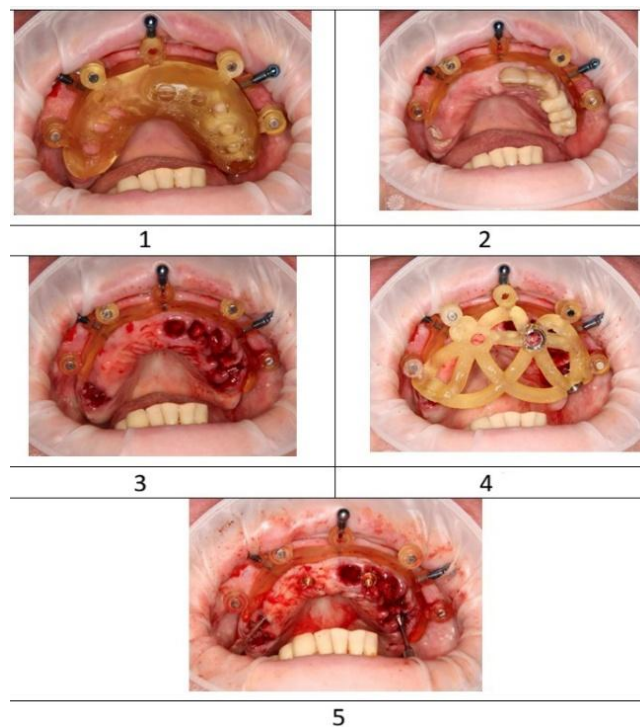
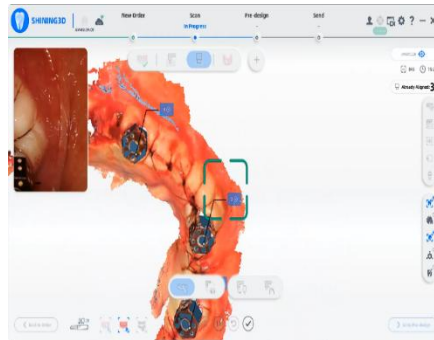


Figure-6 Dental Implant Surgery Using a Surgical Copy



- 1- Placing the surgical copy in the patient's mouth and securing it with pins.
- 2- Removing the upper part of the surgical copy.
- 3- Extracting teeth 1.1, 2.1, 2.6 with the surgical copy in place.
- 4- The process of placing the copy intended for osteotomy.
- 5- The dental implant is installed (Torque 40-60 N/Sm2) and the Multiunit is tightened on the implant (Torque 20 N/Sm2) 3- After a day, the patient is given a temporary prosthesis.

After the surgery, the patient was referred to an orthopedist for the placement of dental crowns. Scan markers were placed on the multiunits and an electronic copy of the patient's mouth was taken. Figure-7



Temporary titanium abutments are installed on the multiunits and fixed with magnetic holders. After 3 days, temporary (PMMA) teeth are ready on cobalt-chromium-plated titanium bars based on the electronic copy taken from the patient. Figure-8



Conclusion:

Surgical replicas not only reduce the time of dental implantation, but also help the patient have aesthetically and functionally perfect teeth with high accuracy and in a short time.

