As previously stated, a critical requirement for this protocol is that a realistic, accurate, life-size model of the maxillary bone to proper scale is fabricated using 3D printing technology with the surgical planning software. The digital imaging and communications in medicine (DICOM) data from the 3D scan first is exported from the imaging device and then imported into the implant planning software. Through the use of the software, a simulation of the implant placement is performed to generate customized surgical guides for the placement of the implants. Computerized tomography (CT) scans are utilized for the planning process.

In the current protocol presented in this study, 3D computerized tomography (CT) scans of the maxillary bone are obtained using a cone-beam CT scanner. The 3D DICOM data are then imported into the implant planning software (Sirona Implant Studio version 4.3.1.1, Sirona Dental Systems, Bensheim, Germany) for the simulation of the implant placement. The software allows for the virtual placement of the implants in the maxillary bone, taking into account the anatomic landmarks, the sinus, and the surrounding structures. The virtual planning is performed by a trained prosthodontist, who has experience in implantology. The virtual planning is then validated by a board-certified oral and maxillofacial surgeon.

The virtual planning is then transferred to the operating room using the surgical guides. The surgical guides are designed to be used with a manual drill, which is guided by the surgical guide to ensure accurate placement of the implants. The surgical guides are fabricated using 3D printing technology, ensuring that they are accurate and can be used for the placement of the implants.

In the operating room, the surgical guides are used to guide the placement of the implants. The implants are placed using a manual drill, guided by the surgical guide. The placement of the implants is performed under local anesthesia, and the surgical site is sterilized using standard surgical techniques. The surgical procedure is performed by a board-certified oral and maxillofacial surgeon, who has experience in implantology.

The surgical procedure is performed under local anesthesia, and the surgical site is sterilized using standard surgical techniques. The surgical procedure is performed by a board-certified oral and maxillofacial surgeon, who has experience in implantology. The surgical procedure is completed, and the surgical site is closed.

The patient is observed postoperatively, and the surgical site is examined for any signs of complications. The patient is discharged after 24 hours, and the surgical site is examined for any signs of infection. The patient is followed up at regular intervals for the next 6 months, and the implant integration is evaluated using conventional radiographs and computerized tomography (CT) scans. The implant integration is evaluated using conventional radiographs and computerized tomography (CT) scans.

Overall, the zygomatic implant placement using the zygomatic implantology technique is a valid and reliable technique for the placement of zygomatic implants. The technique is safe, accurate, and provides excellent esthetic and functional outcomes. The zygomatic implantology technique is a valuable addition to the armamentarium of implantologists, providing them with an additional option for the treatment of patients who are not candidates for conventional implant placement.

References: