# Case Report

## Lower Full Arch Immediate functional Loading

## Using SURE Protocol® & TRATE Implants


- Dr Sacheev Nanda

**SURE Protocol ®**

Single Unit Retention and Restoration Protocol is a methodical approach to the use of single piece implants for oral rehabilitation. This Protocol has been successfully been used to improve results of simple daily cases and also treats complicated full mouth cases with minimal residual bone.

<u>Retention Protocol</u>

The Surgical philosophy of the SURE Protocol is Primary Stability and Prosthetic Convenience. These features are very easily got by using the next generation of single pieces implants that have been designed and manufactured in the high quality facilities of TRATE.

The self threading apex of the Basal Implants and the anti rotation cuts help provide excellent stability at time of insertion and also over the osseointigration phase. The neck design offers resistance to peri-implantitis. The narrow crestal diameter allows insertion in areas where the crestal bone is as thin as 2mm. The single unit design and apical load distribution design ensures crestal bone integrity.

The Compression Implants provided by TRATE also have some unique features that help produce long term stable results. The Deep compressive thread allows maximum bone implant contact and ensures sufficient space to maintain bone vitality even in narrow ridges. This compressive architecture is an enhanced version of the 30 year old compressive thread which has given consistent long term results.

Restoration Protocol

TRATE Single unit implants have a remarkable property that the abutment angulation can be adjusted by 15 degrees after placement. The proprietary neck design of the implant allows this to be possible by a simple bending motion, and yet is strong to withstand insertion torque and masticatory loads.

The Prosthetic accessories provided with the implant further compliment the systems commitment to prosthetic excellence.

Case:

Female – 68 years old

Lower edentulous Mandible , with a thin ridge

Patient complains of ill fitting dentures and refused complicated bone grafting and delayed loading treatment plans suggested to her from other doctors.

Medical history – well controlled diabetes

Treatment Plan: To use TRATE Basal SS and Compression Implants to provide an immediate functional loaded prosthesis within 7 days, in a simplified, efficient and effective technique. SURE Protocol was the technique of choice.

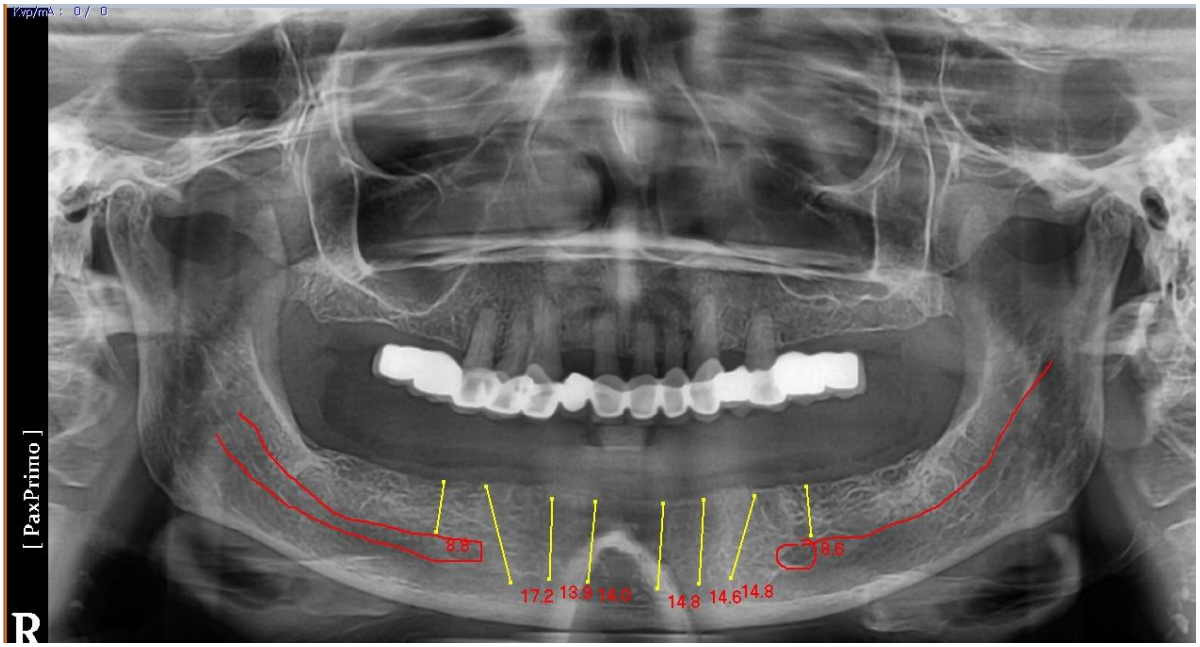
Pre Operative OPG


Pre Operative Intra Oral Photographs

The residual ridge was narrow, width got by trans mucosal osseous probing was 2.5mm in the anterior region and 3.5mm in the posterior region. TRATE Basal SS implants were selected for the anterior region as they are ideally suited for narrow healed ridges, they combine the versatility of the Basal implants with the dependability of surface treated titanium for better hard and soft tissue integration. The apical part of the Basal SS is textured to as to have better osseointigration while the abutment and the shaft is anodised in a neutral Gold so as to provide better soft tissue integration and emergence aesthetics.

In the posterior region Compressive implants were planned. Even though the ridge is narrow a 3.0mm diameter compressive implant can be placed as the deep grooved compressive thread allows bone the required thickness so that the vitality of bone is not affected.

<u>Pre Surgical Planning</u>

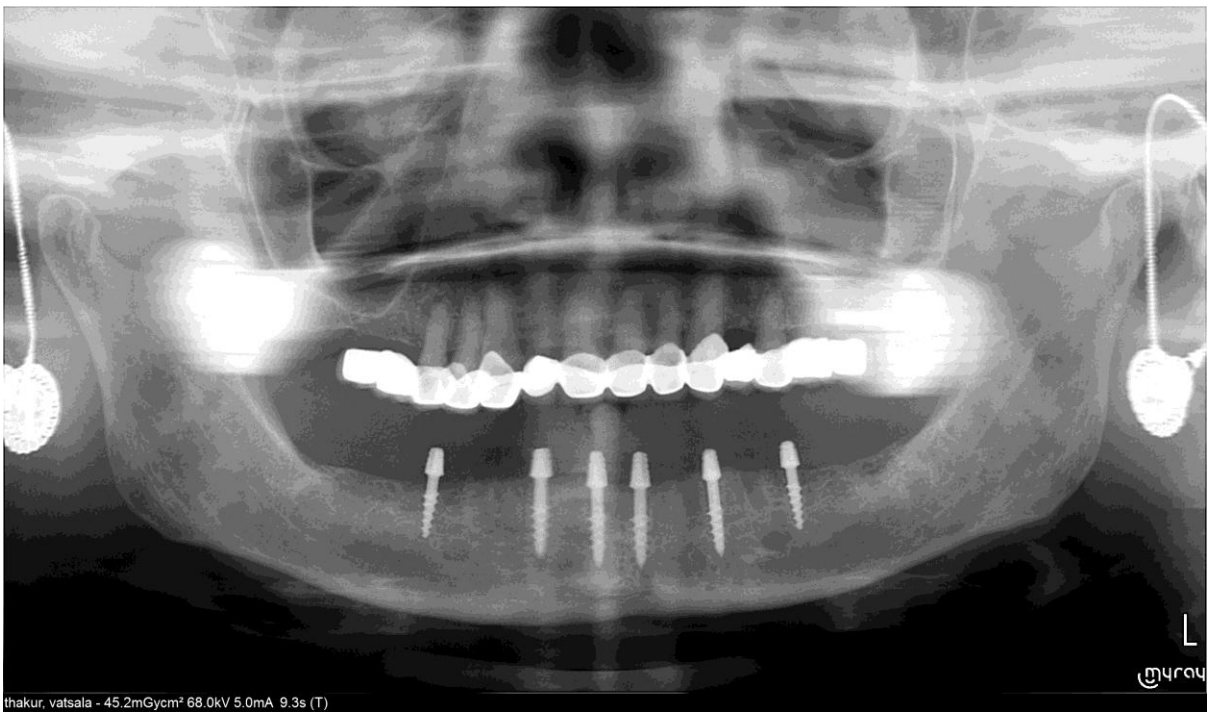


Procedure

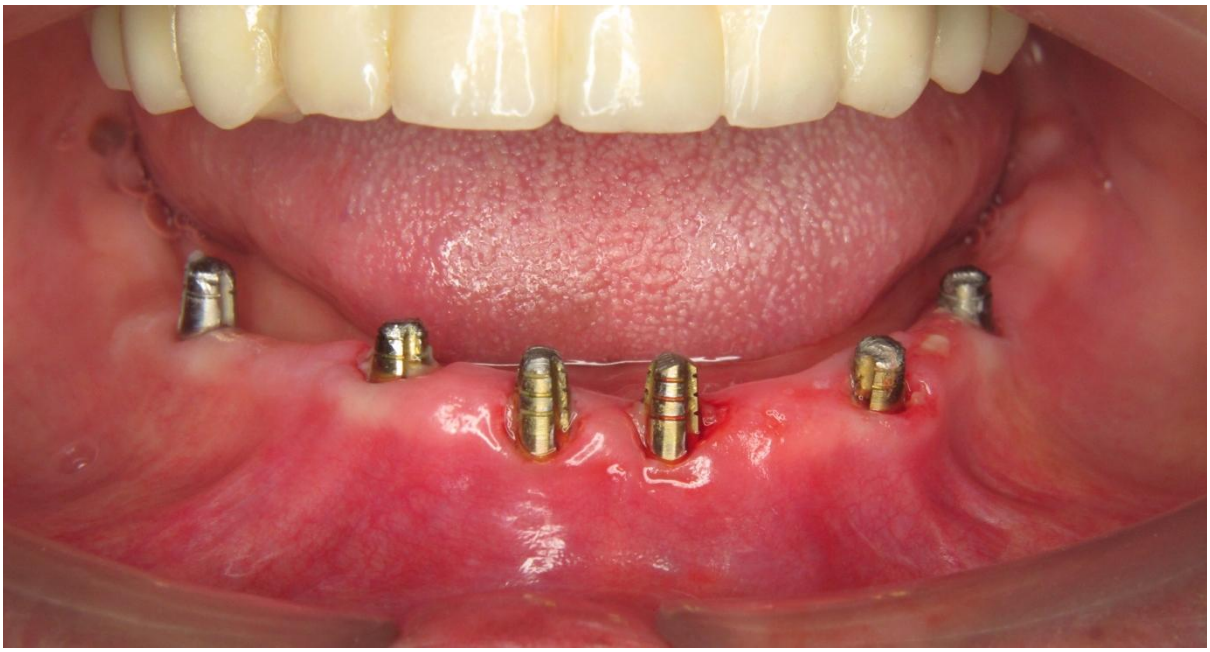
SURE Protocol implant insertion criteria state that a minimum of 6 Implants are to be used to support a 12 unit single frame bridge. The progressive increase in insertion torque is achieved through the drilling protocol refined by SURE Protocol and available in TRATE system. For the Basal SS implants placed in the anterior region the first drill is the DB2020 - a precision drill that only has an apical cutting tip - this improves drill stability and maintains drill direction, this drill is taken up to the pre planned length of the implant to be inserted, which is ideally till the apex perforates the second cortical. Followed by the D2016 up to desired length , then the Basal SS 3516 Implant is inserted with a torque ratchet , with the setting at 70 Ncm . SURE Protocol states for minimal bone trauma the insertion torque must not exceed 75Ncm , no additional benefit is seen to insert implants at torques higher than 75 Ncm . Patients most often feel added discomfort intra op and post op when this level of torque is exceeded.

Posteriorly , the compressive Implants were placed after just a single drill of DC3016 upto 10 mm, due care is taken to maintain insertion torque within 70Ncm , if required additional drilling or an oscillating insertion pattern is used with the implant being rotated anti clockwise 2 times for every 3- 4 clockwise turns , this allows bone time to expand and prevents implant from locking.

Post Operative

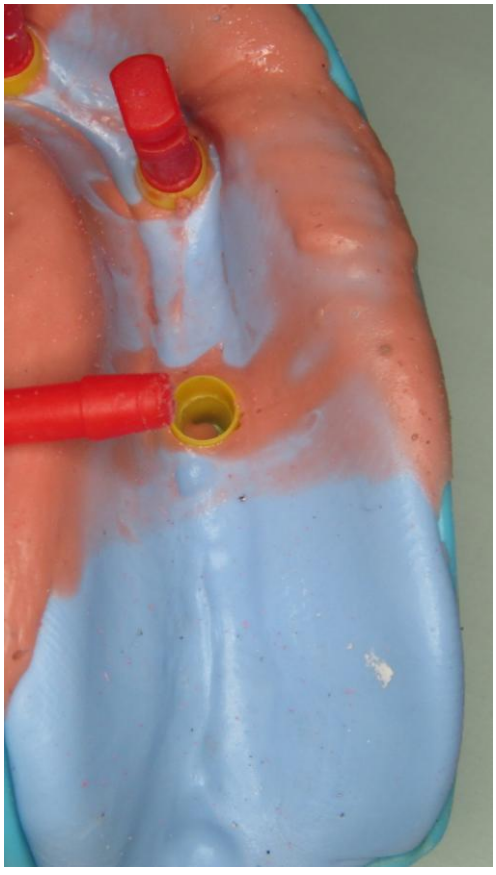


Post Operative Intra Oral Picture



Impression Procedure & Prosthesis (SURE Protocol)

SURE protocol states that all implants must be passively splinted in a reliable and rigid manner so as to prevent any micro movement at the bone implant interface. Osseointigration is the key for long term success of any implant restoration, and osseointigration is adversely affect if micro movement at bone implant interface exceeds 80 microns.



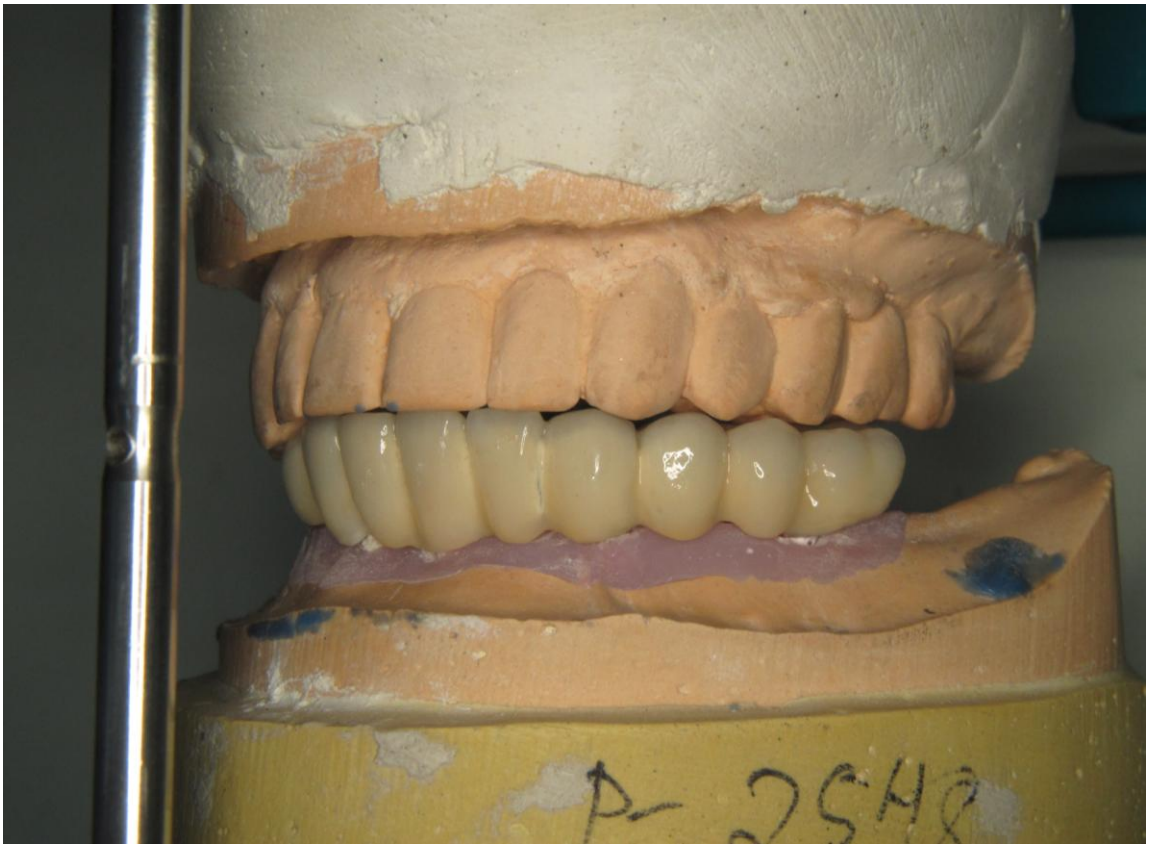
The abutments are adjusted intra orally by bending to make them parallel (if required) , then the height can be reduced using the guide rings on the abutment. The lower impression is then taken using the transfer caps that snap fit onto the abutments and a putty pick up impression is taken.

The implant analogues are then also adjusted in height according to the guide rings on them , corresponding to the implant and then placed into the transfer copings which are now embedded in the impression, and the model is now poured using gingival silicon and stone.

The burn out caps are placed on the analogues and modified as need and waxed up to create the metal frame. Using the burn outs ensure a perfect fir onto the abutment intraorally.

Once the metal frame is cast and finished an intra oral try in is done to verify the fit and vertical dimension. A new bite registration is done and sent to the lab. A pick up impression can also be taken at this time to inform the lab about any corrections in the casting or final finished prosthesis as required.

Casting



In this case we are giving the patient a metal ceramic cemented prosthesis. The pontics are designed with a modified ridge lap design to ensure maximum hygiene and aesthetics. The prosthesis must not in any instance press on the gingival as this creates a micro space that is non cleanable , a small space enough for water /saliva / mouthwash to easily pass between the prosthesis and gingiva is essential to ensure a long term stable result. This must be explained to the patient at the first consultation itself.

Post cementation instruction for hygiene and maintenance must be given to the patient. Daily use of water pick /water jet with mouth wash / warm water. Also first 6 months the occlusion must be re calibrated as an edentulous patients chewing patterns changes in the months following them receiving the new fixed prosthesis. A group function with minimal lateral overlap , minimal lateral and anterior guidance  (15 degrees) is ideal occlusal scheme . This reduces any detrimental forces on the prosthesis and the implants and help prevent any crestal bone loss and any ceramic fractures also. SURE Protocol occlusion concepts will be discussed in another article and is outside the scope of this article.

Summary:

We were able to provide a definitive long lasting fixed prosthesis to this patient in 3 appointments in the span of 7 days. A blood less , suture less surgery meant a quick and painless recovery for the patient who's wish for fixed teeth were granted in a very patient friendly yet scientific approach using the SURE Protocol and TRATE Dental Implants.

As a result of her good experience the patient has decided to replace the failing upper prosthesis.