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"*Guided Prosthetics Protocol For Immediate Loading And It's Correlation To The Literature's Standard Of Deviation.*"

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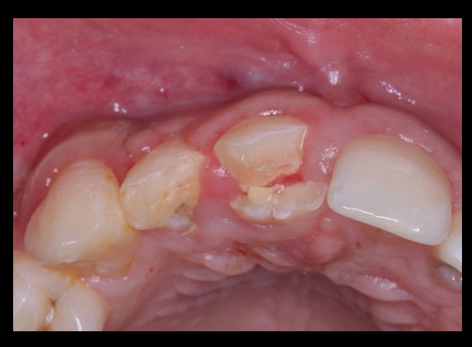
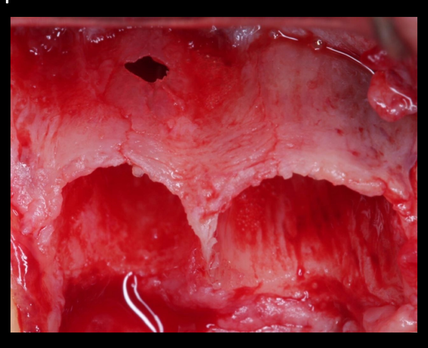
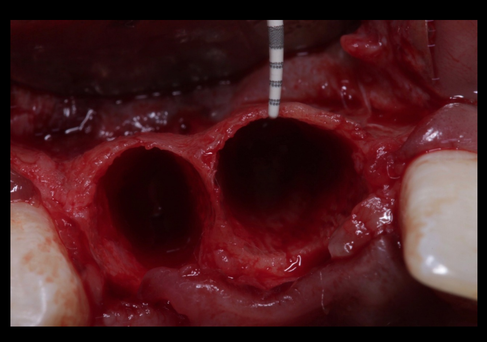
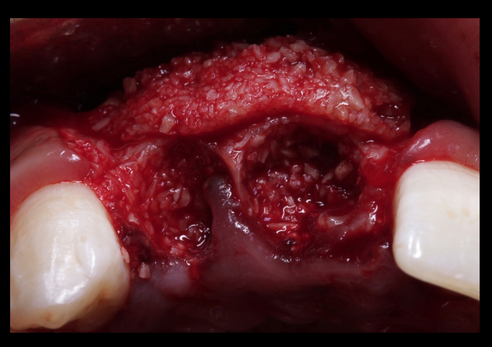
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Introduction:

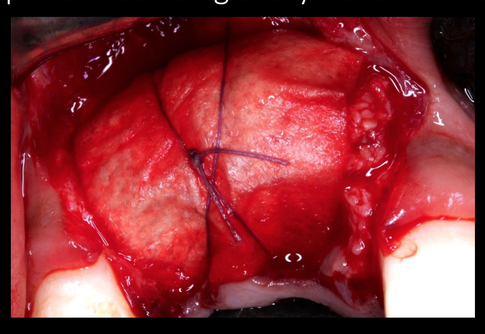
- Utilizing a Highly accuracy guided surgery system is becoming the standard in everyday practice, especially in cases where we are following the newer concepts in guided surgery like "*Guided Prosthetics*".
- Guided Prosthetics concept implies the usage of an accurate guided surgery system and prefabricated prosthetics , where the surgical guide acts as a tool to guide the implants in a position that is accurate enough for the prefabricated prosthetics to fit.

Purpose :

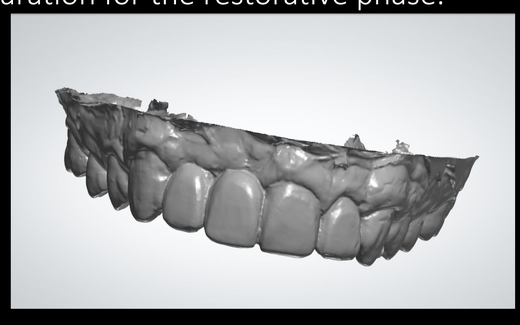
- this example is to showcase applying this concept in the Aesthetic Area. In this case Guided One day Implant Prosthetic Protocol was followed which enabled implant placement control (IPC) and Hex/Timing Control to enable the usage Indexed Abutments. In an attempt to place the implants with high accuracy that would allow us to fit the prefabricated screw-Retained prosthetics.

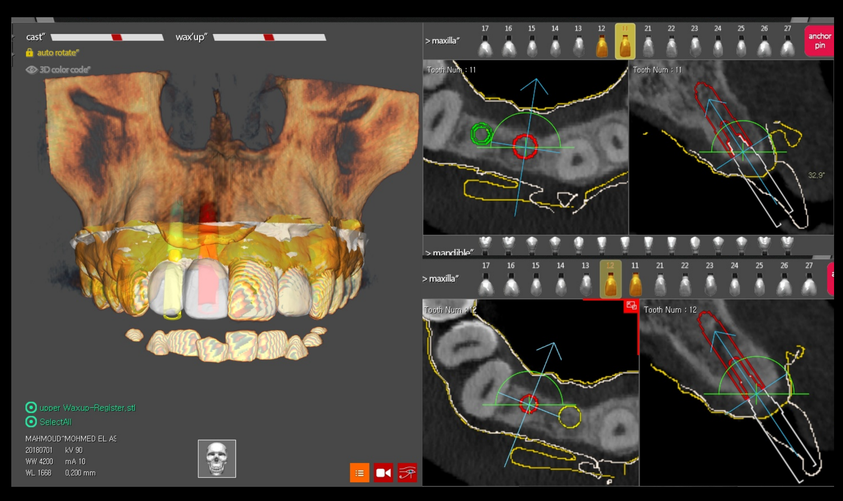
- Patient presented to the clinic after a traumatic injury which caused breaking of teeth 11,12 beyond repair. Teeth were extracted and "in and out" socket Augmentation was performed using sticky bone "mixture of Allograft and xenograft bone particulates mixed with iPRF" and covered with collagen membrane in preparation for the restorative phase.

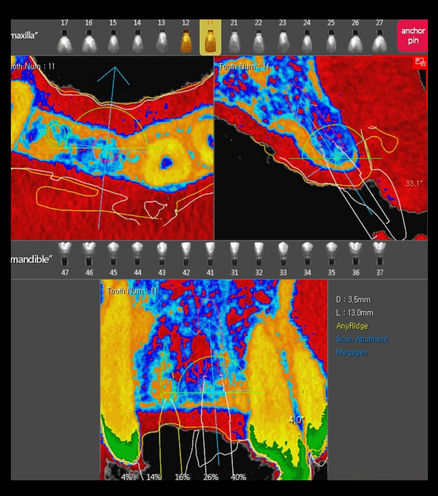


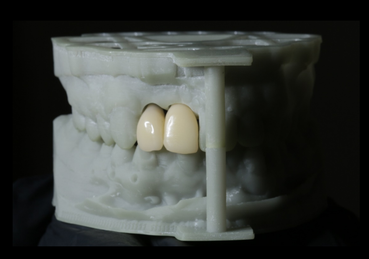
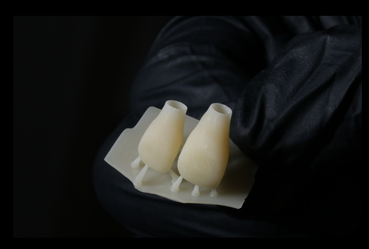


- A First CBCT was taken which showed a successful bone Augmentation procedure and confirmed an adequate amount of bone to place implants.
- Impressions were Taken and A Waxed up smile design was created manually and Digitized.

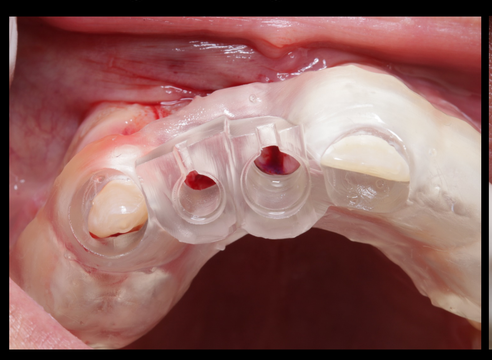


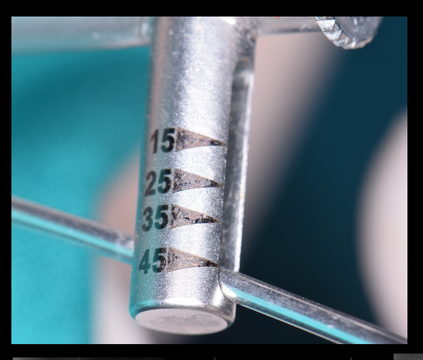




- Implant Planning was done Using R2Gate, Bone density Analysis showed D2-D3 bone density (Blue) which is good for immediate loading.
- A Digital analog model was designed with 2 Provisional restorations, all were **3D Printed** with Crown&bridge Photopolymerization Resin and bonded onto Hexed Titanium Bases.

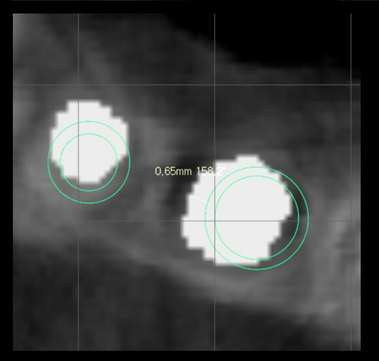


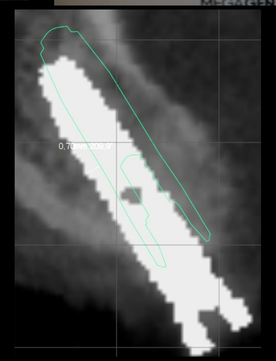
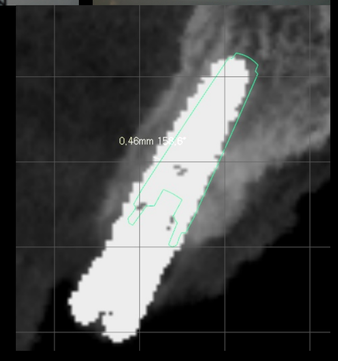









- Guided surgery was performed , and implants were placed with 45N/cm torque and 75 ISQ which is safe for immediate loading. Provisionals were tried in and put out of occlusion.
- A post Op CBCT was taken and showed deviation of 0.7mm for #12 and 0.45 for #11 B-L , and and 0.6mm M-D which is less than the standard of deviation in the literature (1.2mm) .

Results:

- Using this guided system Implants were placed with a standard of deviation less than 1mm in all directions (which is less than the standard of deviation in literature in Vivo studies (1.2mm), Prefabricated prosthetics fit with minimal adjustments needed.

Conclusion:

- Guided prosthetics protocol can be applied with the usage of an accurate guided surgery system with a standard of deviation less than numbers in vivo studies in the literature (1.2mm) after following immediate loading criteria in regards to ISQ and insertion torque values set for safe immediate loading.

References:

1-The relationship between resonance frequency analysis (RFA) and lateral displacement of dentalimplants: an in vitro study (Pagliani L, Sennerby L, Petersson A, Verrocchi D, Volpe S & Andersson P ,Journal of Oral Rehabilitation 2012).
2-Implant Stability Quotient (ISQ) vs Direct in Vitro Measurement of Primary Stability (Micromotion): Effect of Bone Density and Insertion Torque (Paolo Trisi PhD, Teocrito Carlesi DDS, Marco Colagiovanni DDS, Giorgio Perfetti MD, DDS) (Journal of Osteology and Biomaterials, Volume 1, Number 3, 2010).
3- Guided surgery: accuracy and efficacy. (Vercruyssen M, Hultin M, Van Assche N, Svensson K).
4- CAD/CAM-guided prosthesis for immediate loading of bone-grafted maxilla: a case report. (Kupeyan HK1, Shaffner M, Armstrong J).