Diagnosis and Treatment Plan

For

[redacted]

Regarding 3 implants – sites 46, 45, 35

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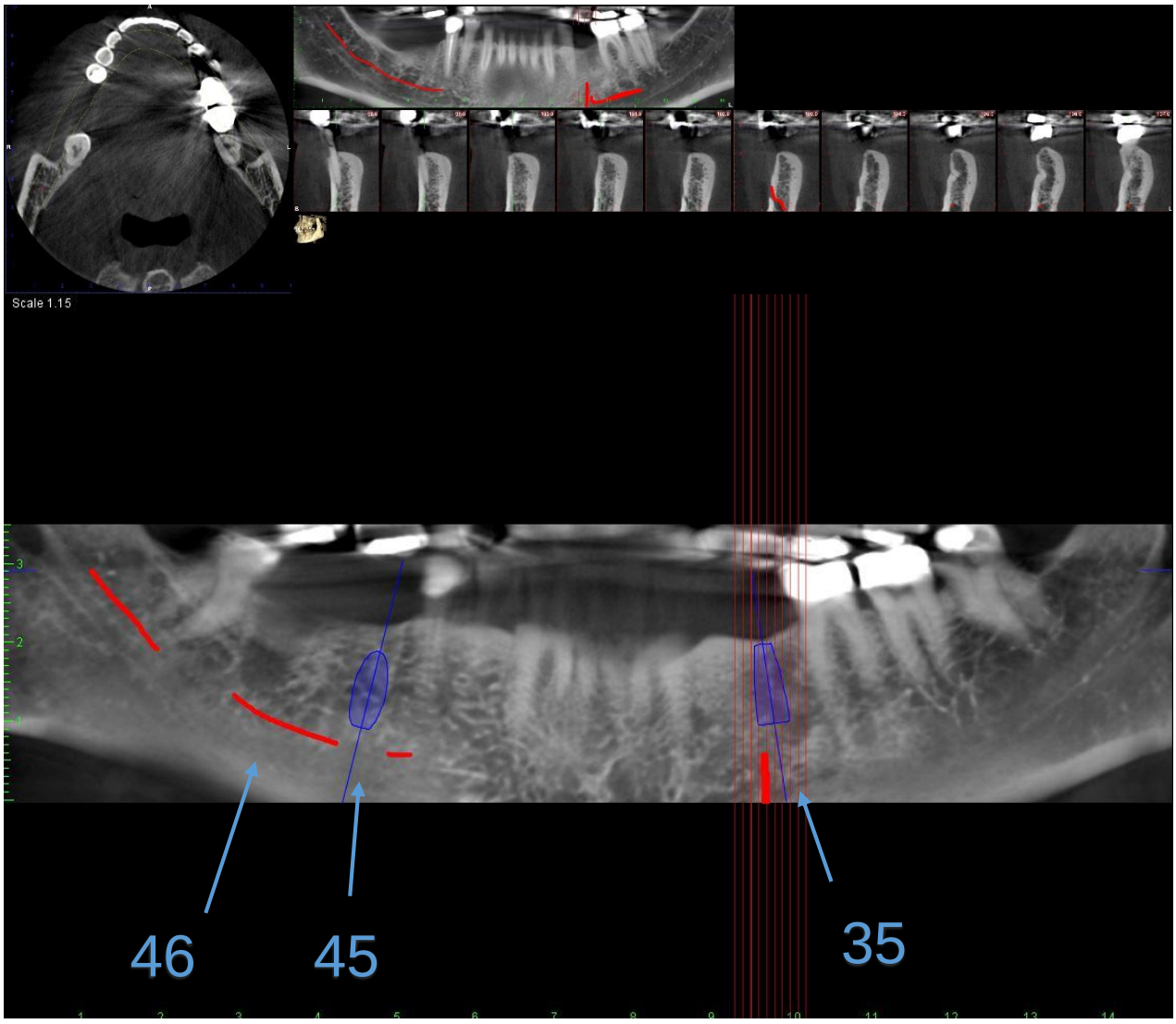
Initial Appearance

CBCT scan was taken to explore 3 sites for implant placement.

1. Tooth 35 (lower left premolar) site
2. Tooth 45 (lower right premolar) site
3. Tooth 46 (lower right molar) site

Analysis of 35 Site



Overview and OPG view

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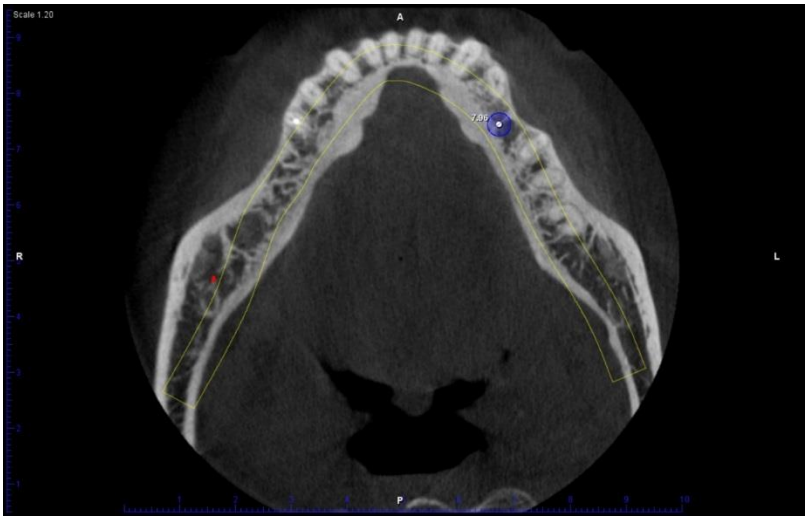
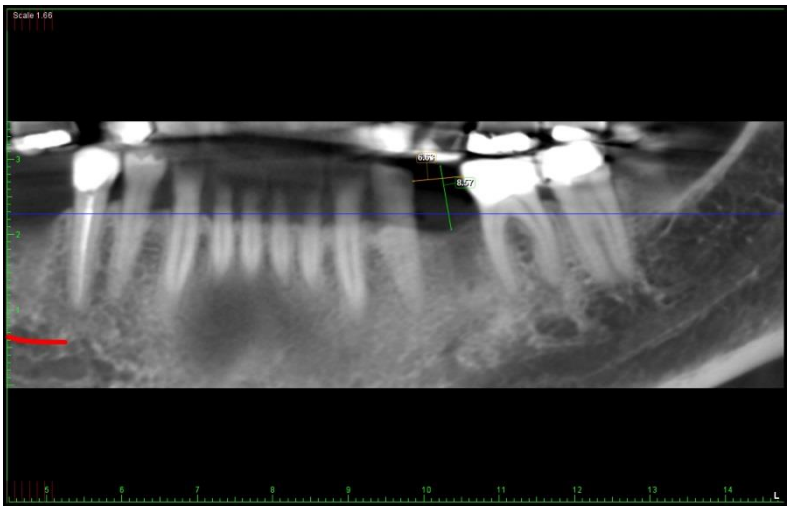
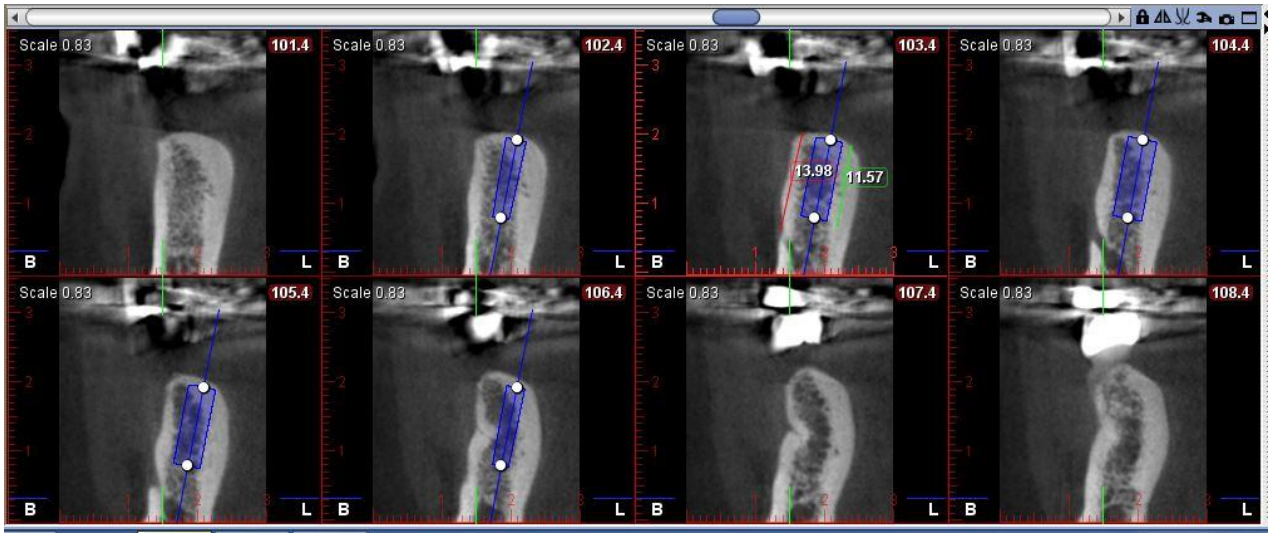


35 Horizontal section



35 Height and width assessment



35 implant superimposed on coronal section

Tooth 35 Cone Beam CT analysis

Note – measurements on CT “xray” are colour coded to correspond to the coloured text below.

1. Crown height space = 8.57 mm – healing abutment selection = 4mm height
2. Mesial-distal tooth width = 6.63mm
3. Vertical space to landmark (inferior alveolar nerve) = 13.98 mm – Implant selection 11 mm length – to confirm with xray on day.
4. Bucco Lingual = 7.96 mm
5. Implant selection = 4.2 mm diameter
6. Angulation – moderate to severe buccal root torque due to mandible shape

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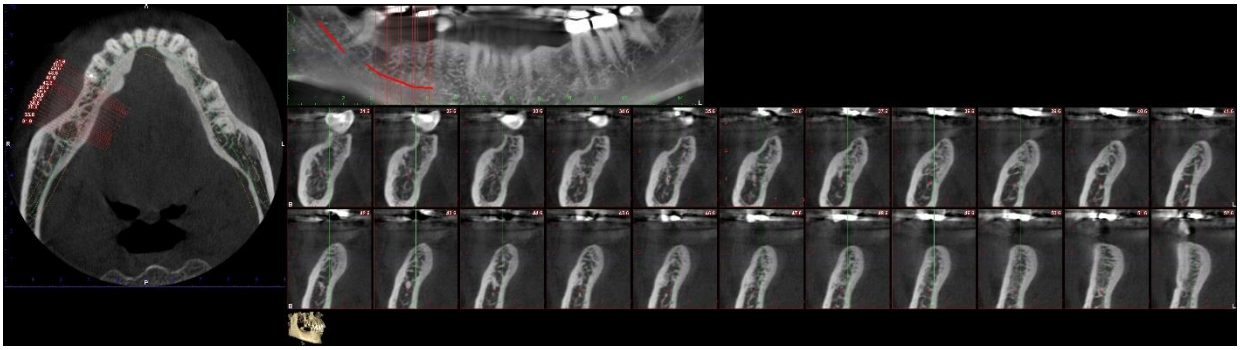
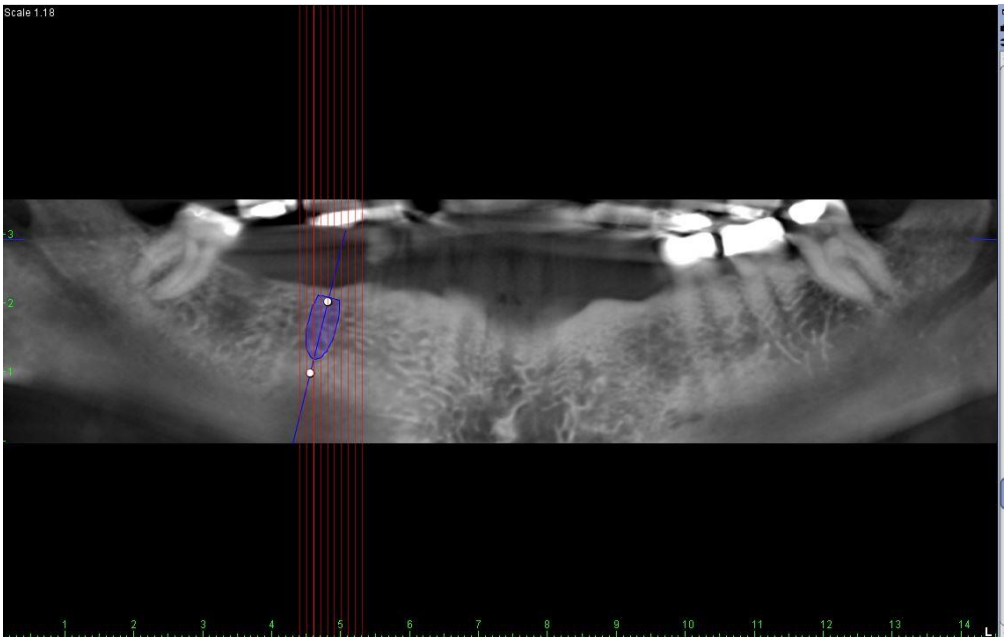
Site 46 and 45 analysis



45, 46 overview



Tooth 45 Panoramic view of implant site with 11.5mm length 5mm diameter implant

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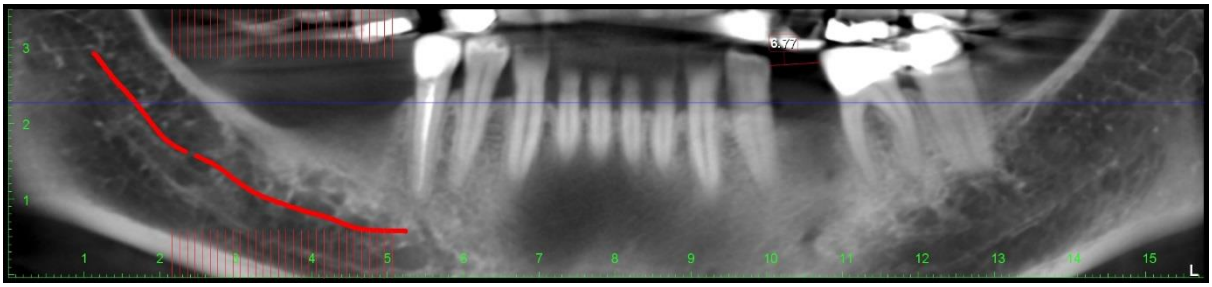
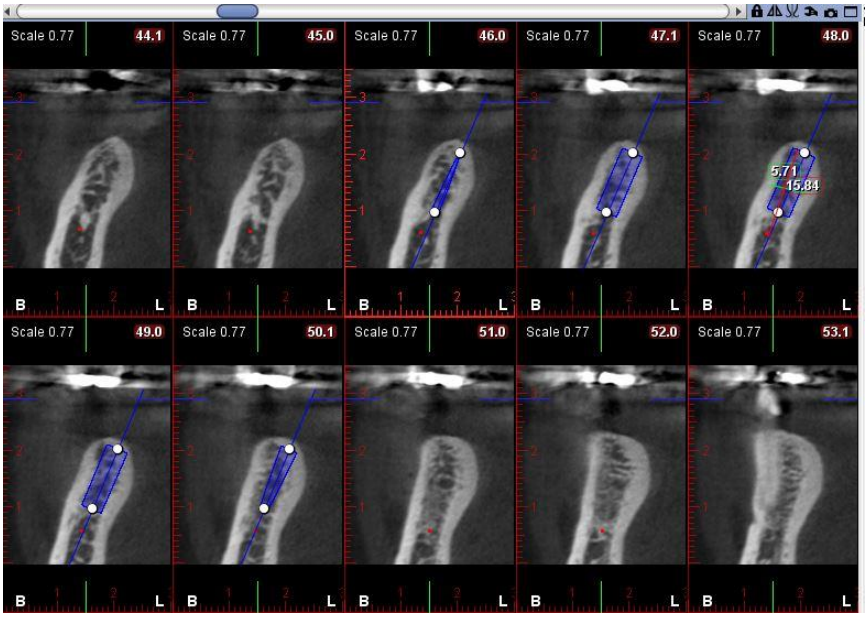
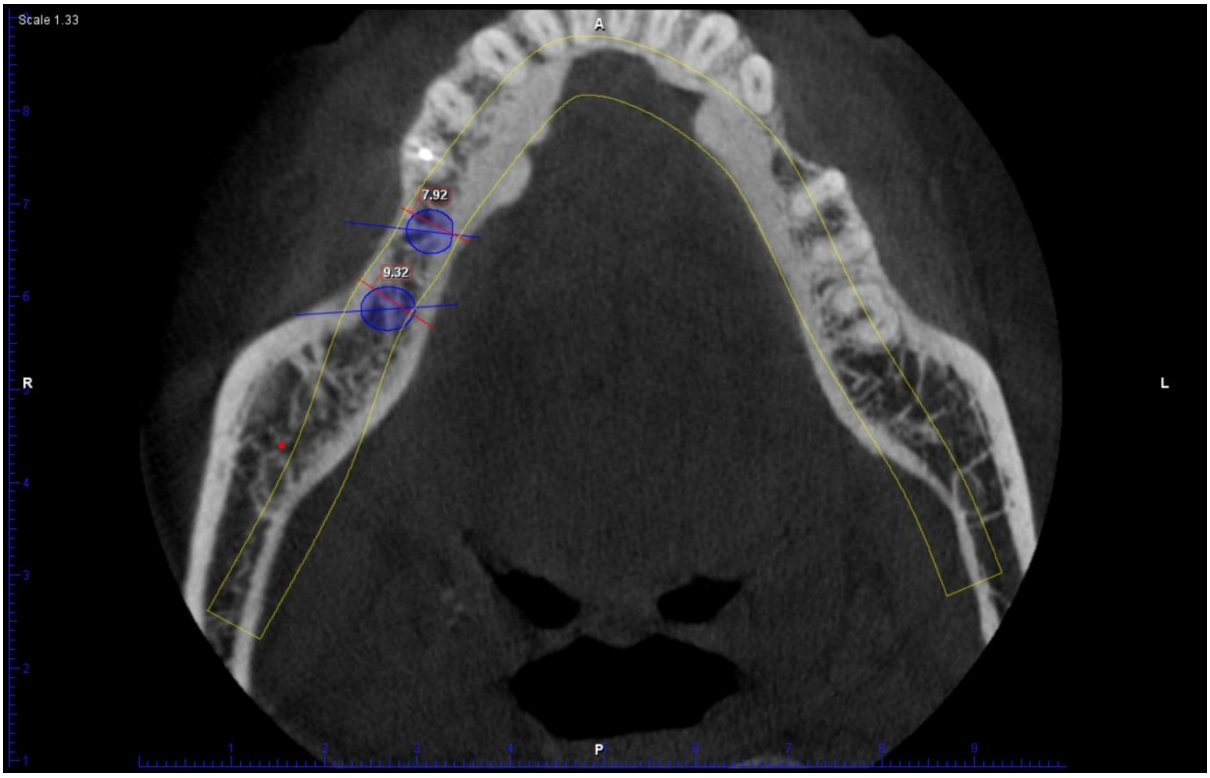


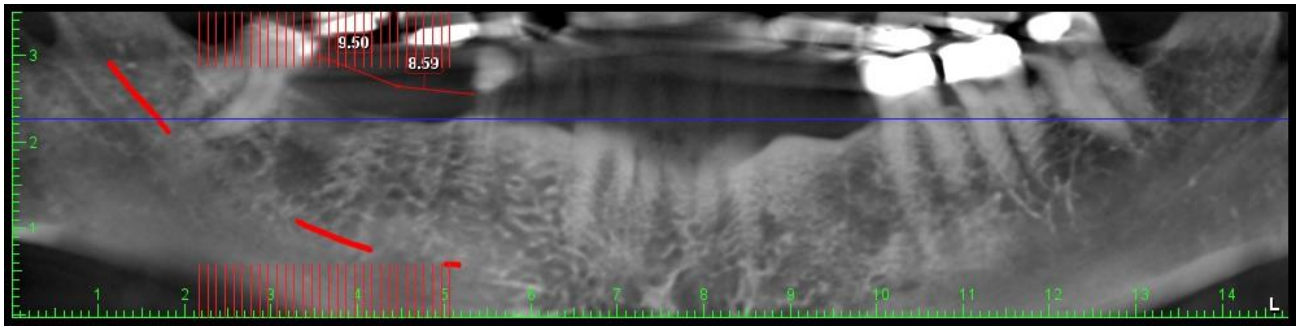
45, 46 Inferior alveolar nerve analysis



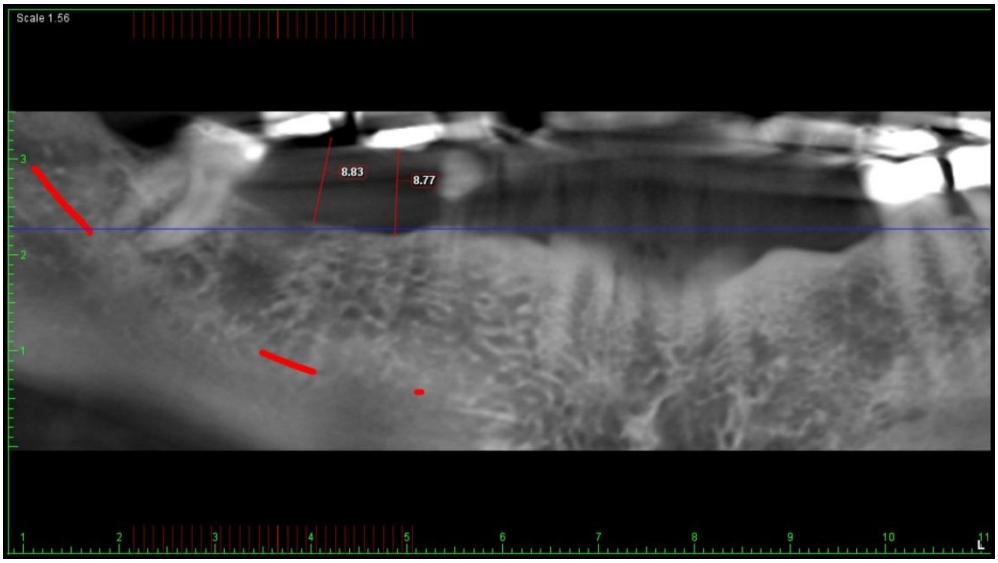
45 implant superimposed on coronal sections



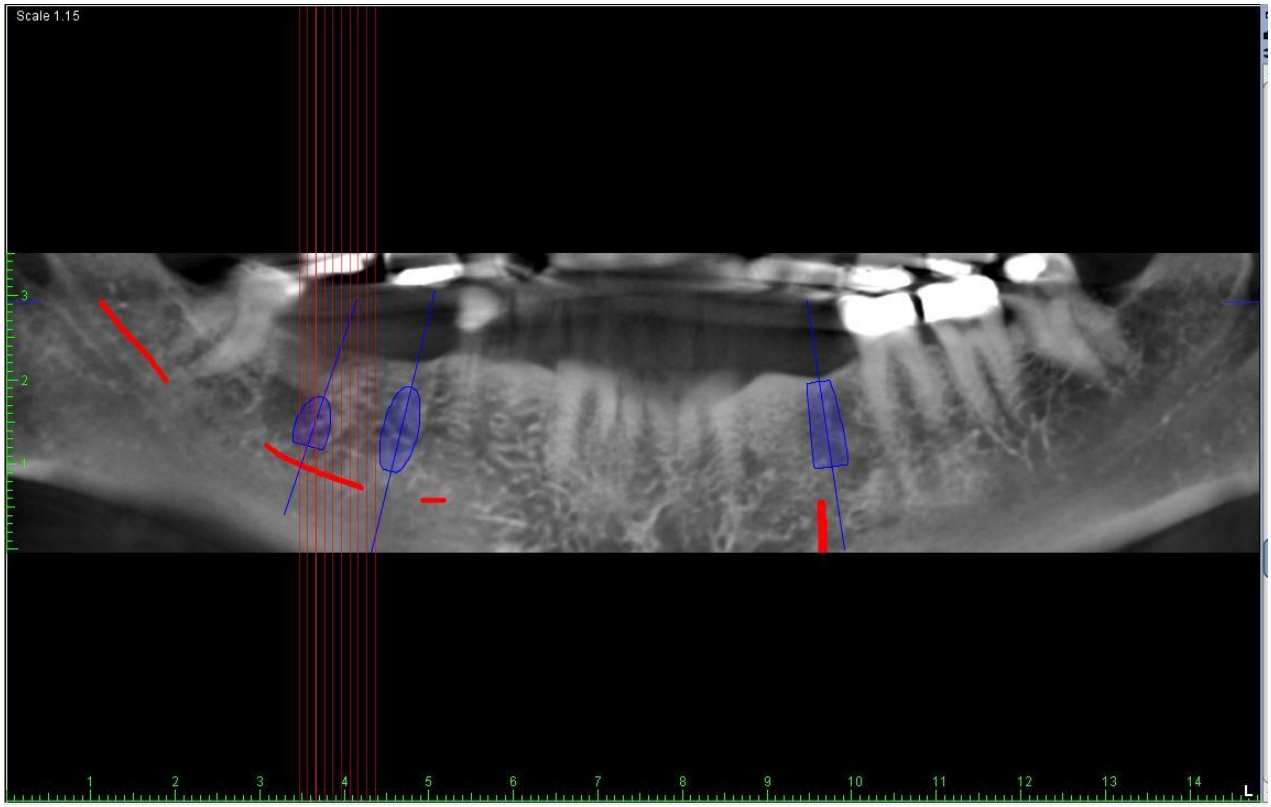
45, 46 implant superimposed on horizontal sections



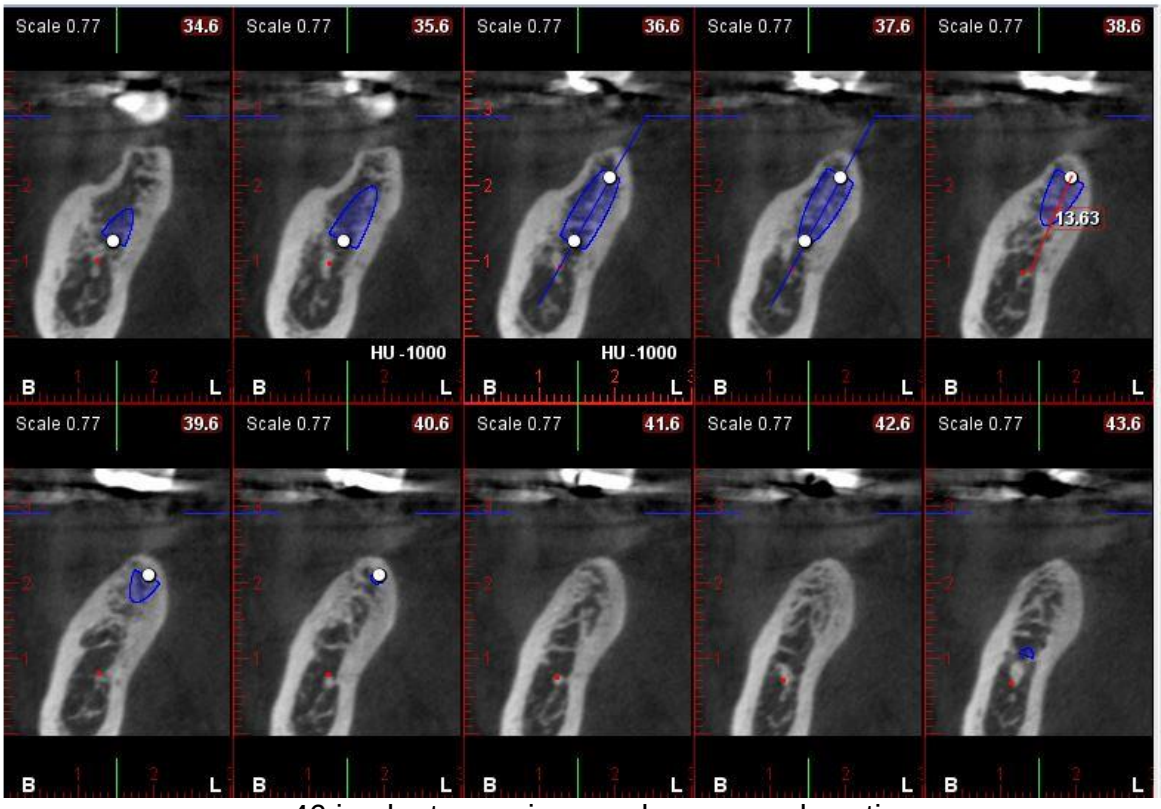
45,46 OPG view with tooth widths



45,46 OPG view with tooth heights



OPG view with implants and IAN + mental nerve



46 implant superimposed on coronal sections

Tooth 45 CBCT and Model analysis

1. Crown height space = 8.77 mm – healing abutment selection = 4mm height
2. Mesial-distal tooth width = 8.59mm
3. Vertical space to landmark (inferior alveolar nerve) = 15.84 mm – Implant selection 11 mm length – to confirm with xray on day.
4. Bucco Lingual = 7.92 mm
5. Implant selection = 4.2 mm diameter
6. Angulation – moderate to severe buccal root torque due to mandible shape

Tooth 46 CBCT and Model analysis

1. Crown height space = 8.83 mm – healing abutment selection = 4mm height
2. Mesial-distal tooth width = 9.5mm
3. Vertical space to landmark (inferior alveolar nerve) = 13.63 mm – Implant selection 10 mm length – to confirm with xray on day.
4. Bucco Lingual = 9.32 mm
5. Implant selection = 4.2 mm diameter
6. Angulation – moderate to severe buccal root torque due to mandible shape

Dental Evaluation

Patient [redacted]

Occlusion - class II occlusion, with no obvious lateral interferences.

Loading on teeth- no significant signs of brusism/clenching with occlusal wear.

Dental (restorative) space - Adequate dental space for implant placement – no supererruption of opposing teeth. No tipping of adjacent teeth. Crown height space in ideal range of 8-12 mm.

Bone evaluation

Bony space (quantity) - Satisfactory 3D bone for implant placement – see analysis.

Bone quality – Satisfactory quality 3D bone - to be confirmed during implant placement.

Skeletal Maturity - Patient has reached skeletal maturity – no problems anticipated. Please let us know if you think you are still growing in height.

Medical evaluation

Medical history provided by patient reveals the following -

Heart disease, rheumatic fever/heart murmur/valve difunction/prosthetic valves - nil
Bleeding disorders/ blood dyscrasias – nil
Diabeties – Nil
Pregnancy – Not applicable
Allergies – Nil
Medications – especially Bisphosphonates eg. Fosamax, Actonal, Boniva, blood thinners (asprin or warfrin)
Kidney disease – nil
Liver disease – Nil
Prosthetic joints – nil
Smoker – non smoker
Problems with previous surgery including dental – Nil

General Limitations of Implants

Aesthetics

Screw retained crowns. Our practice favors screw retained crowns on implants. This will mean that there will be an access channel to the screw which we will fill with a white filling. Ie. This will look like a white filling on the biting surface of the tooth. If you do not want this then we can make a cement retained crown with no imperfections on the surface, but the crown and implants will then be less retrievable for repairs.

Gingival contour. Some changes to the gingival contour (gum line) will be expected – the gum line will not be as high as with a natural tooth because some gum tissue is lost at tooth extraction. - Because this is a back tooth it should not be very visible, but may mean that you have some gaps where the gums have receded – it is essential you floss/brush to keep these clean.

Smaller crowns. Implants are usually restored with crowns which are slightly smaller than natural teeth. This is to minimize sideways forces on the implants which do not cope well with horizontal forces. When restored properly they may also be marginally "flatter" than the adjacent teeth. Unless you are specifically looking for this, it is usually hard to spot visually.

Crown height space : implant ratio issues Patient has slightly greater ratio but result should still be highly satisfactory because it is not far outside ideal ratio.

Movement of adjacent teeth. Implants are fixed in bone – they do NOT move. Natural teeth do move (slowly) with time – this is a normal physiological process that occurs with age. This means that sometimes spaces will open between your implant and the natural teeth. Fillings can be placed to try and fill these spaces.

Treatment alternatives considered

Bridges. – not ideal because of damage to adjacent teeth - risk of nerve damage + tooth weakening. Success rates lower than single tooth implant

Dentures – not ideal for single tooth replacement, very unlikely to be satisfactory outcome for patient.

No treatment - cosmetically, functionally not ideal. Will place more strain on remaining teeth, will allow adjacent teeth to move faster, and bone atrophy in region.

Potential Complications

General surgical – every surgical procedure does have inherent risks. Risks of implant placement are not greater than having a tooth removed provided implant placement is well planned.

Bleeding/bruising – a problem especially if you are taking warfrin/asprin. Generally less than with extraction.
Damage to nerves – this is a real risk, but a low one as we have taken care to analyze location of major nerves.
Infection – please take antibiotics as prescribed 3 days prior to surgery. Smokers and uncontrolled diabetics are at higher risk of infections.
Pain and discomfort – should be minimal – less than tooth extraction.

Early Implant complications - Failure to integrate (implant doesn't "take"). Of course, this can sometimes be due to surgical error but it is more likely to be due to infection or failure of patient to adequately care for the implant (see below). It can also just be due to plain bad luck or underlying medical/patient factors – the human body does not allow 100% success rates with any surgical procedure.

Long term complications with crown/implant.

- Crown complications - it is rare, but just like any restoration, crowns can chip or break in the long term – expect a crown to last 15-20 yrs. These can be replaced/repaired easily if the crown is screw retained (as opposed to cemented)
- Implant complications – "peri-implantitis" is the progressive loosening of implants. Generally speaking this is related to how well the patient cleans the area, as well as how heavy they bite on the implant. Heavy biting may also lead to component fractures in implants, screws and crowns, which is why we often suggest splints/mouthguards be worn at night time for heavy grinders.

Success Rates

In spite of the failures listed, success rates are very high compared with any other surgical procedure in the human body. The literature states 95- 97% 10 yr success rate for single tooth implant (Goodacre et al. 2001 literature review). Success rates drop slightly (to 90-95%) at the back of the mouth, and in the upper jaw.

Care of implant - immediately following placement

- Avoid placing pressure on the implant site.
- Keep up good oral hygiene by brushing and flossing
- Do not smoke
- Do not drink alcohol within first 48 hrs
- Take antibiotics as directed
- Do not disturb stitches – they are absorbable and fall out by themselves after a few days
- Take panadol but NOT asprin or ibuprofen – pain should be minimal
- Minor “spotting” of blood is normal
- Contact the surgery if you have any concerns

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Treatment plan

Appointment 1. Impressions for Study models and/or xrays/CT scans/Cone beam scans. (this has already been done). This report is generated and given to you. Please contact me if you have any questions regarding this report.
Note, a consent form including costing follows this report, this needs to be signed before we perform appointment 2.
Note, a script for a course of antibiotics follows this report. Please start taking at least 1 day prior to appointment 2. PLEASE CHECK FOR ALLERGIES TO ANTIBIOTICS PRIOR TO TAKING and inform us of any allergies.

Appointment 2. Placement of implant. Depending on each individual case, this may be a "single stage" or "two stage placement". Most times we aim for single stage which means we place a "healing abutment" to help mould the gum tissue then we can proceed to appointment 3. If a two stage placement is required, we will need to see you for an additional short visit before stage 3 to access the implant and place a "healing abutment".

Appointment 3. Follows 1-6 months after implant placement (highly variable depending on quality of bone) to take an impression of the implant for crown fabrication. A relatively simple appointment - no anesthetic is required.

Appointment 4 . Follows a minimum of 2 weeks after appointment 3. Custom crown is placed. Once again, no anesthetic required.

Maintenance. It is essential that you see a dentist for routine checkups – usually 6 monthly, to maintain the implant and crown (as well as your other teeth)

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Dr Alan Lam agrees to provide implant placement and restoration of implant to [redacted] for the fee of $**3800 for each implant including crown.** Treatment is expected to take **2** months, with appointments outlined above. The initial implant placement fee of $**2000 for each implant** is due at the placement appointment. The remaining treatment fee to be divided into **2** payments of $**900 for each implant crown.**

It is expected that the patient will maintain their implants and wear appropriate appliances, and take medications as instructed.

By signing below,

- **I accept that I am responsible for the payment of this account agree to the above terms and conditions.**

I also acknowledge that I have

- **read and understood the above patient report,**
- **have ensured that any medical conditions have been reported to the dentist,**
- **give consent to proceed with the treatment plan**

_____ _____

Patient date

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