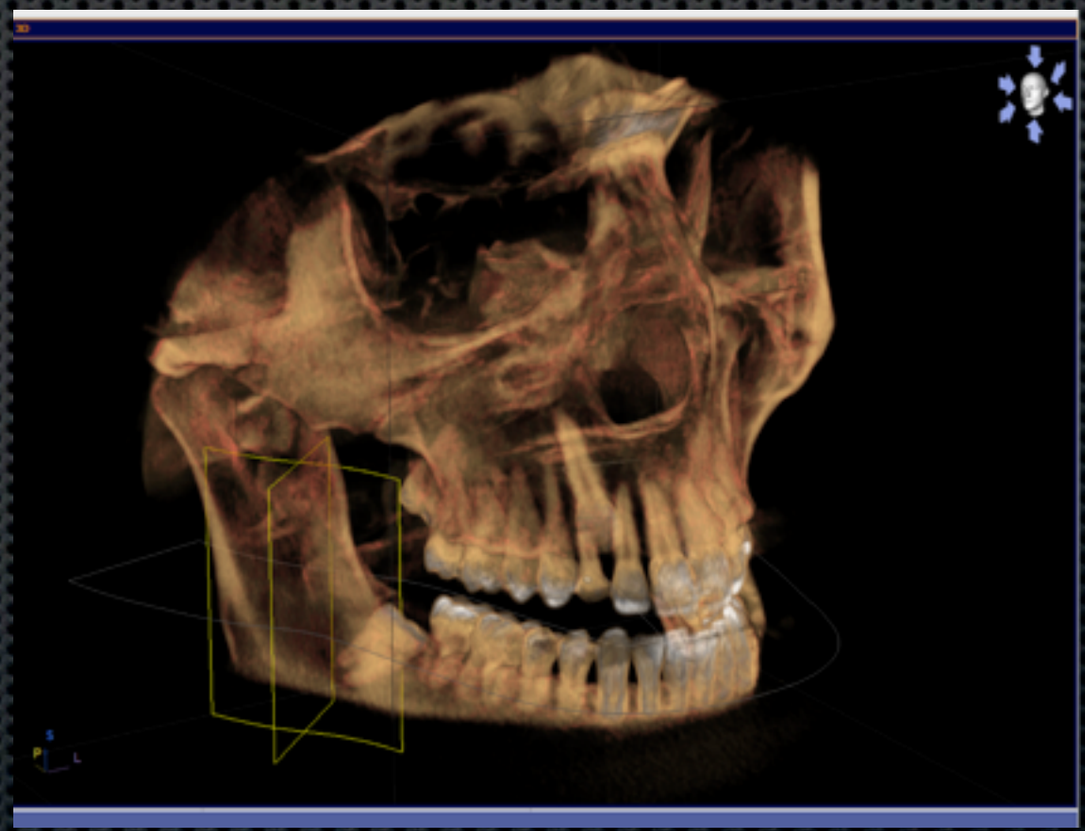
GALILEO

Imagine the possibilities

Clinical Aspects of the Galileos CBCT Unit

DR NILESH R. PARMAR

BDS (Lon) MSc (ProsthDent) UCL MSc (ImpDent) GKT



Aims

Clincal viewpoint on the Galileos CBCT system

When and where it is useful to have a CBCT

Clinical Cases

Scan Techniques

About me

- Qualified from Barts & The Royal London in 2004
- Senior House officer in Restorative Dentistry / Oral Surgery
- Masters in Prosthetic Dentistry Eastman Dental Institute 2007
- Masters in Clinical Implant Dentistry Kings College London 2009
- Winner Dentistry Awards Best Young Dentist in Eastern England

3D Cone Beam Imaging

DIAGNOSIS

patient education

Treatment planning

digital dentistry

Cerec connection

GALILEOS

- Installed in my clinic in 2009
- 5 surgery practice
- Southend on Sea, England
- 40 Miles from London
- Cerec 3D

GALILEOS

- Why did I choose a Galileos unit over all the others?
- Horizontal Collimation
- Reduces Dose by upto 15%

(University of Freiburg Preliminary Results)

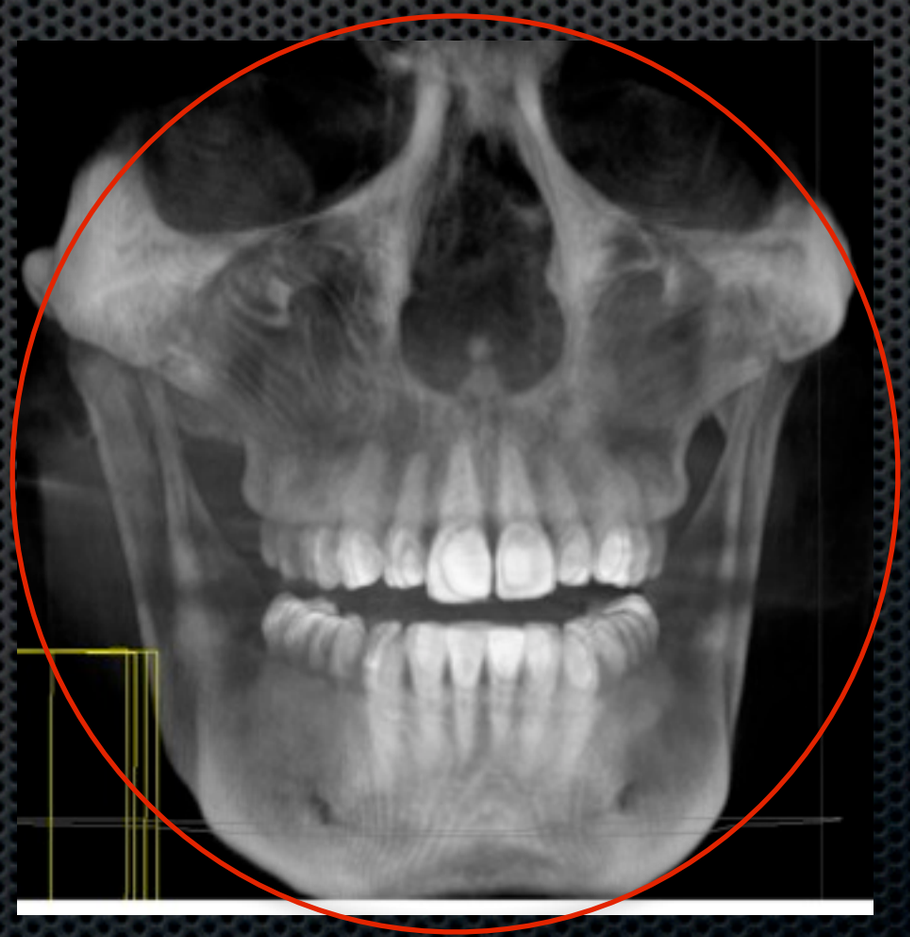
GALILEOS

- Why did I choose a Galileos unit over all the others?
- Horizontal Collimation
- Reduces Dose by upto 15%

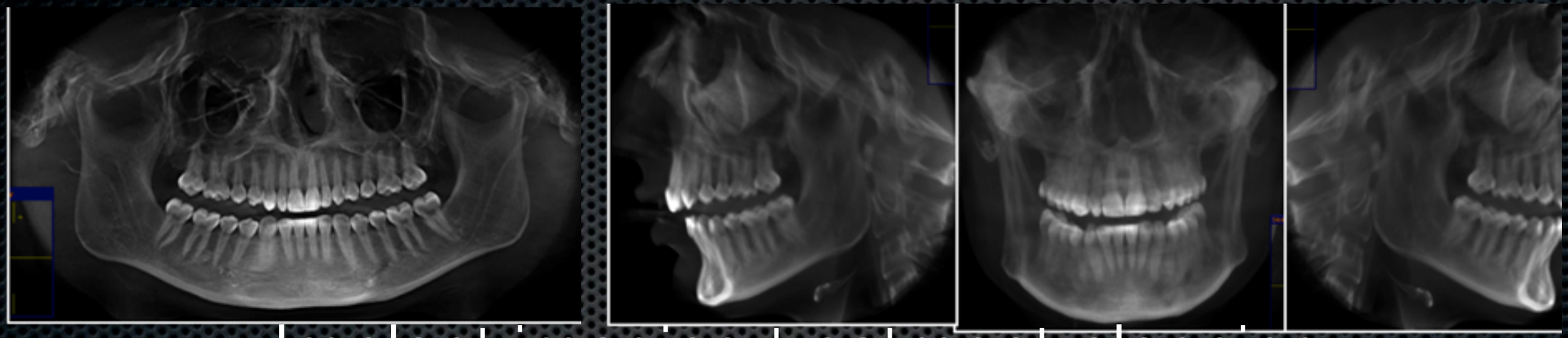
(University of Freiburg Preliminary Results)

Collimation

- Standard Field of View 15x15x15cm^3
- Collimation allows Sphere to be reduced in half



Applications



Implant imaging treatment planning

orthodontics

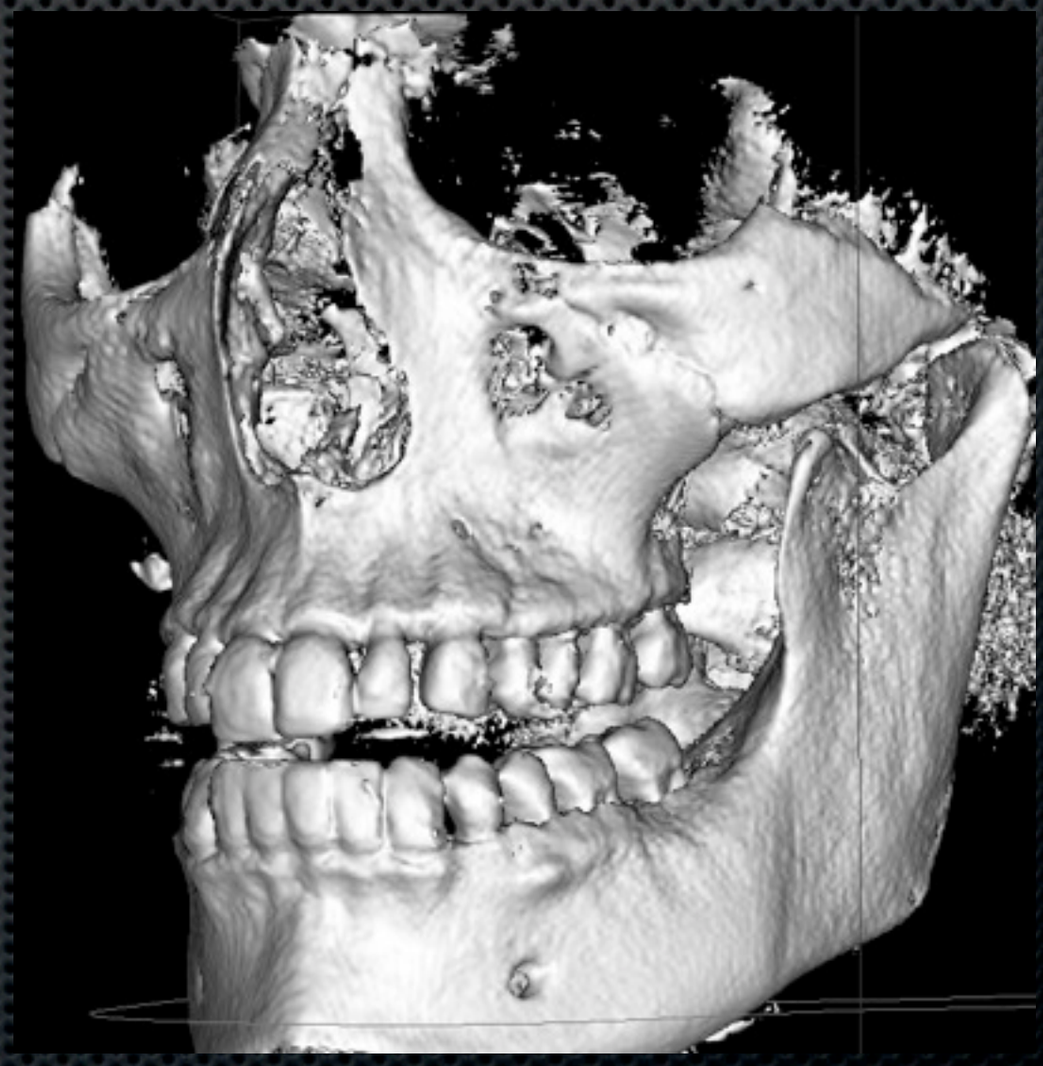
ceph,endo

pathology,

TMJ Imaging

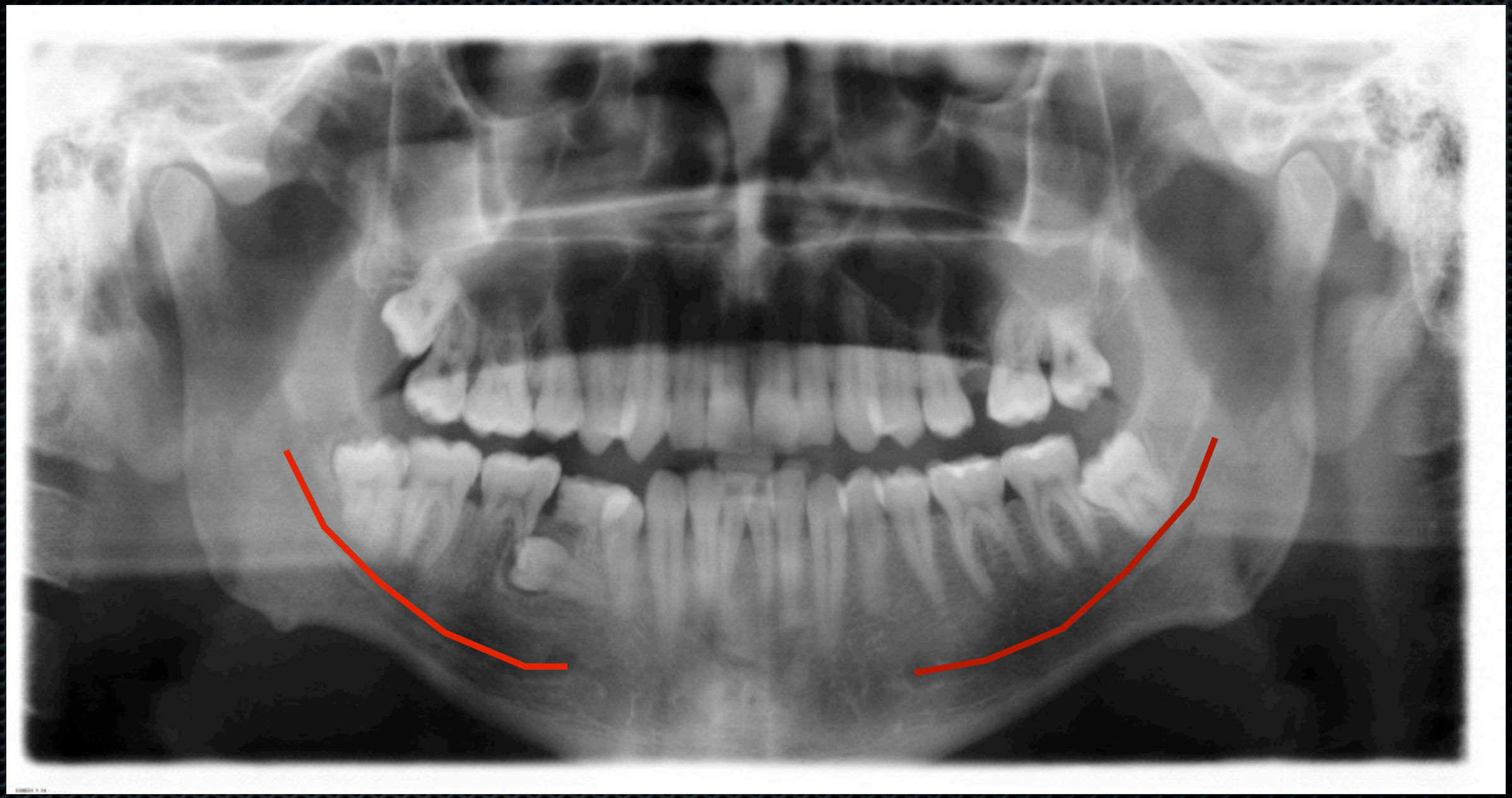
3rd molar relationships

CBCT For implant site assessment is currently the driving force



Anatomy

- What are we looking for?
- Width & Height of available bone
- Bone quality
- Relationship of the proposed implant site with other anatomical landmarks:
    - Inferior alveolar canal



Anatomy

- Floor of the maxillary sinus
- Location of the submandibular fossa (lingual artery and nerve)
- Root positions of adjacent teeth
- Absence of pathology in teeth adjacent to proposed implant osteotomy sites

Current techniques

- Is all of this information obtained reliably and numerically from our normal 2D imaging protocols?

Clinical Cases

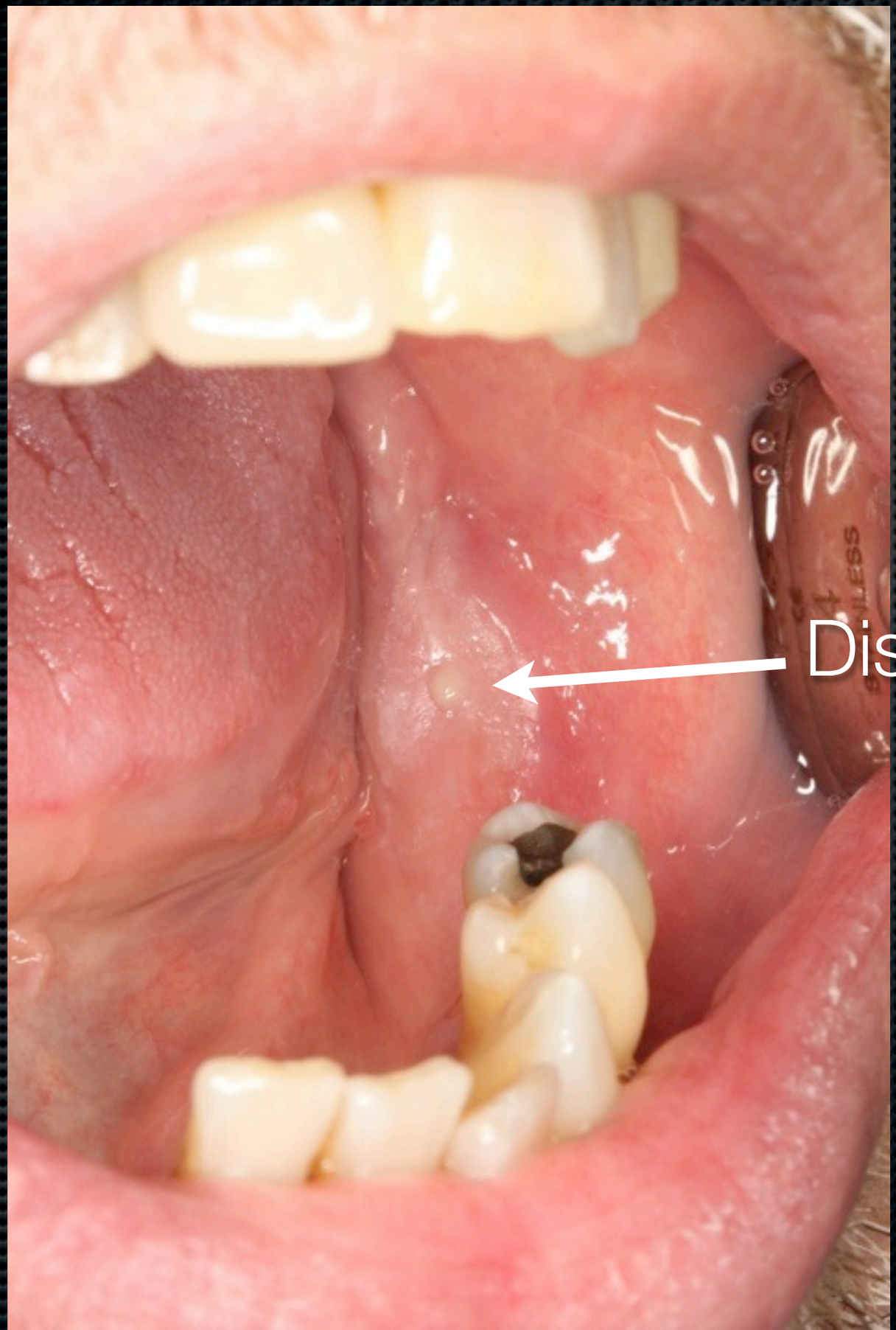
- Conventional DPTs have a magnification factor
- Panoramic Parallax

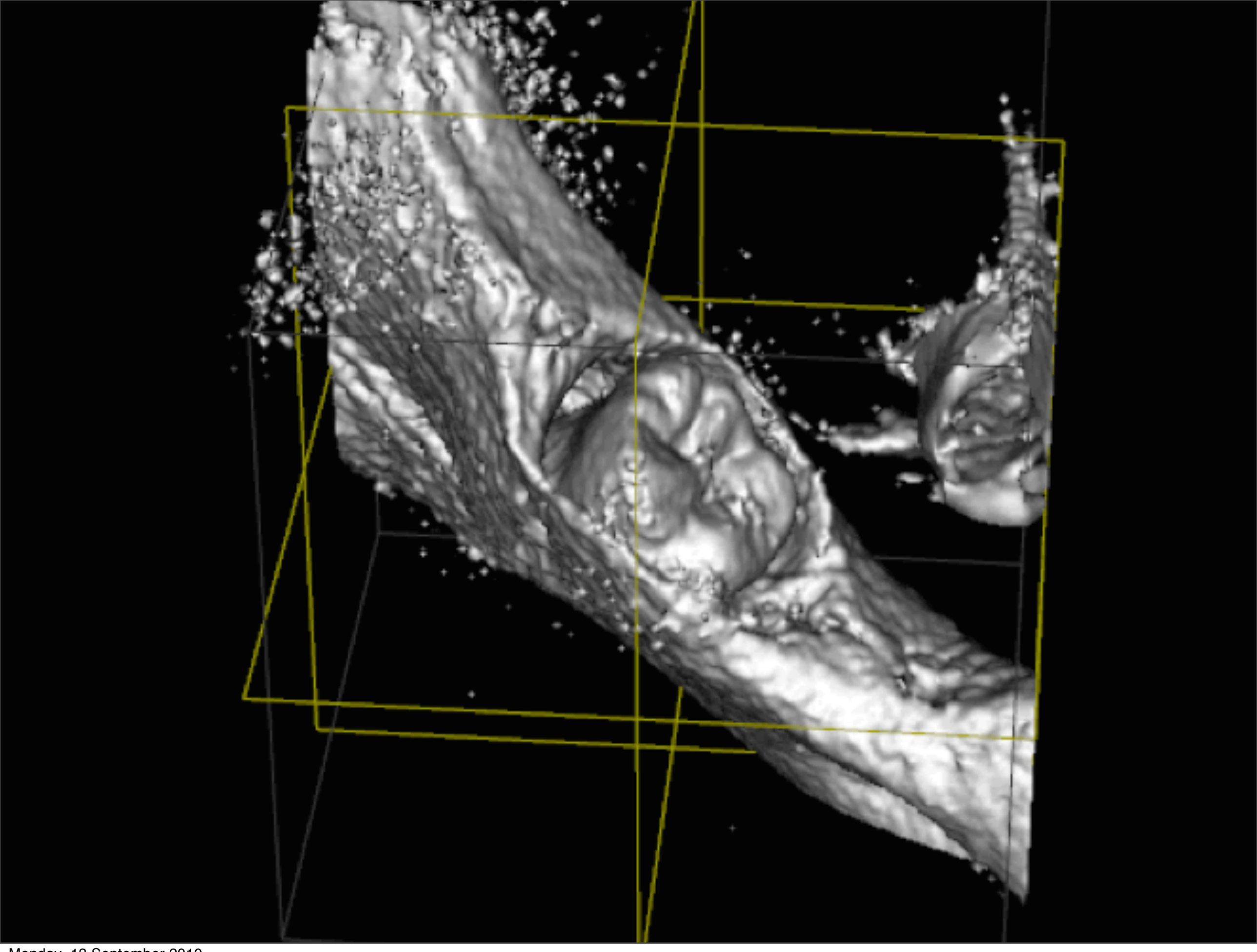
Case 1.

Clincal Case 1

- Implant planning and Wisdom Tooth removal
  - Mr X. attended my clinic for an implant consultation
  - Denture wearer
  - On-going pain LLQ
  - Foul taste

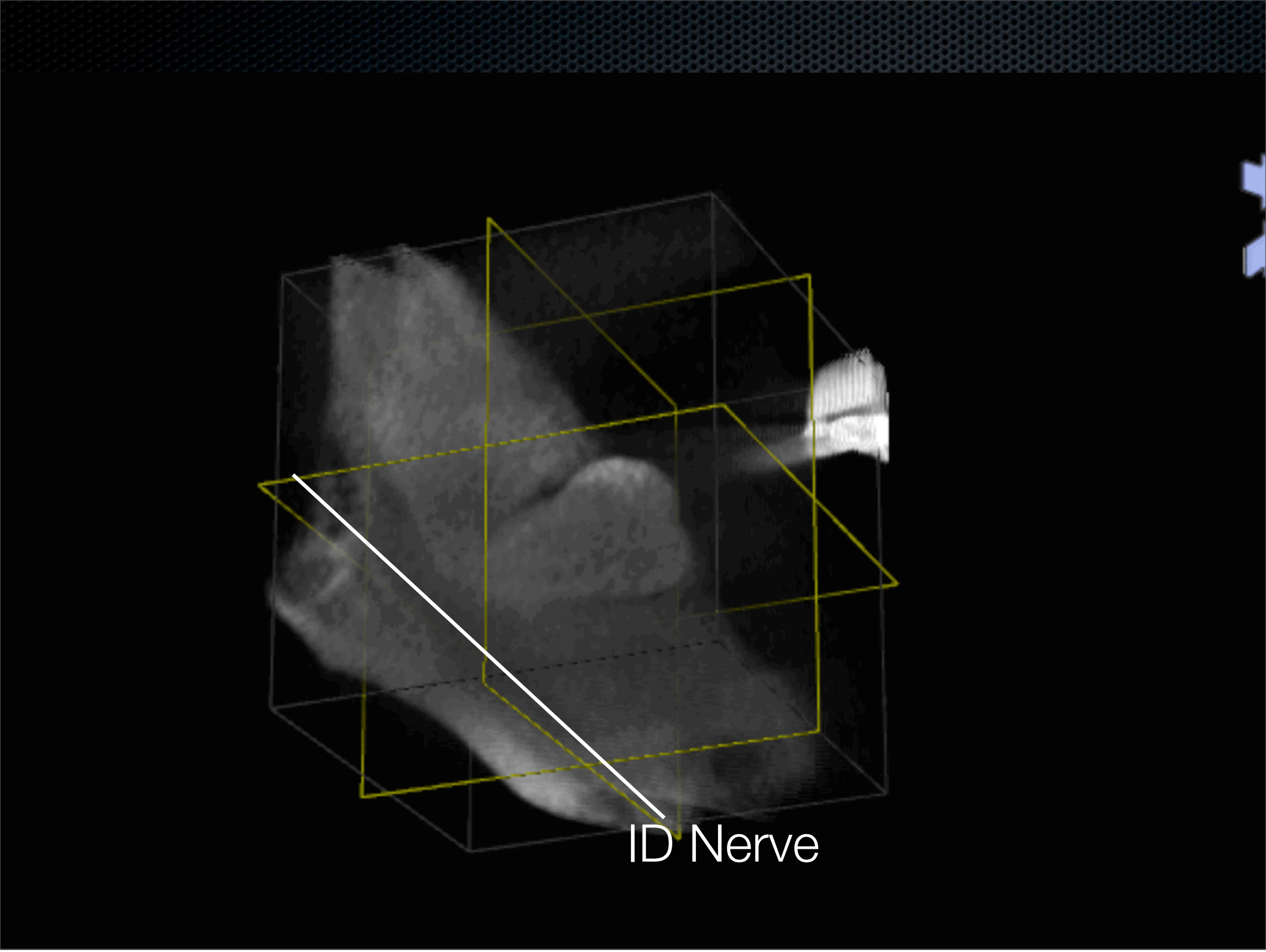
Discharging Sinus

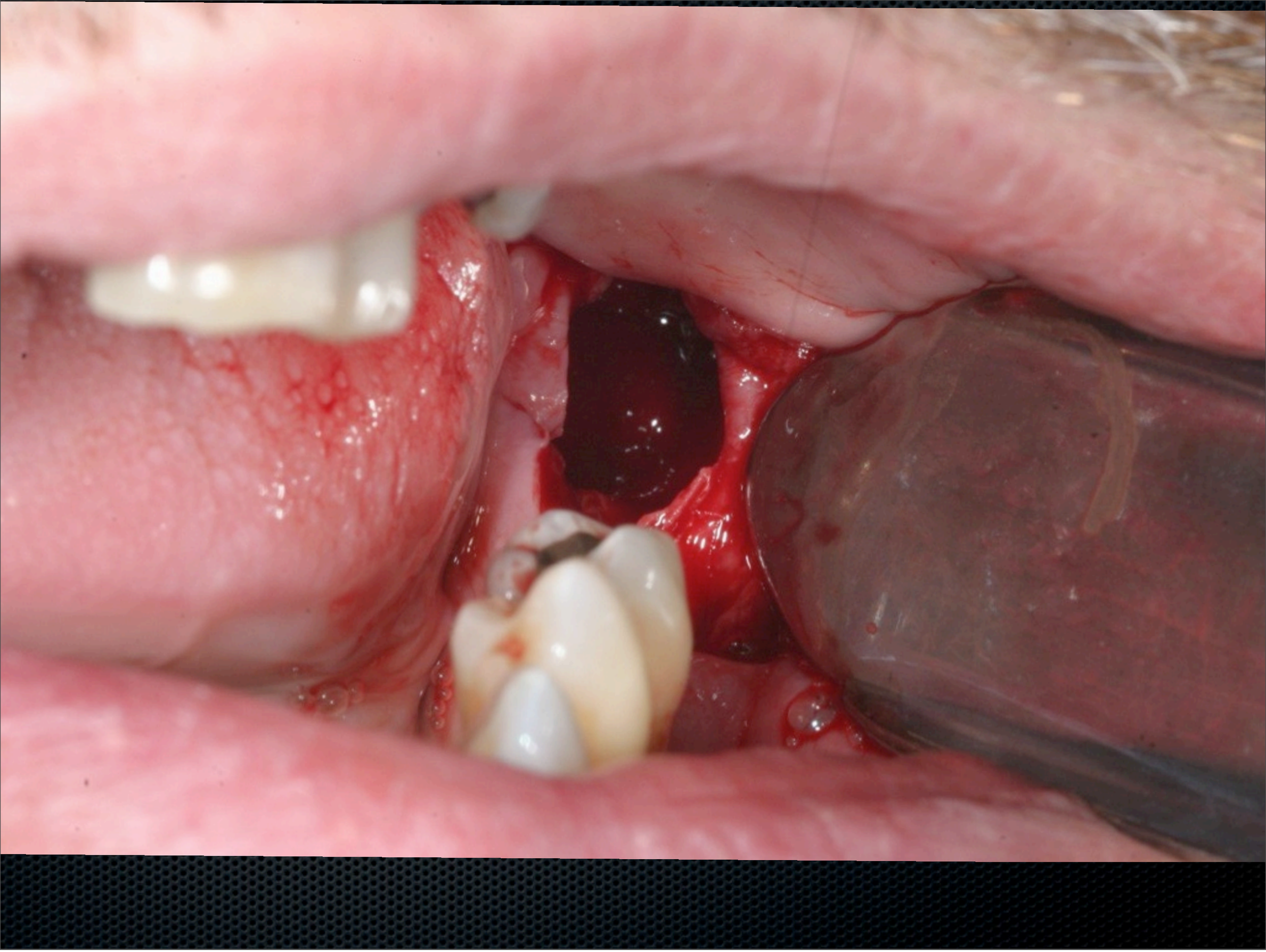

Discharging Sinus



oral
labial / buccal
1 cm
GALAXIS

5 cm
GALAXIS


ID Nerve



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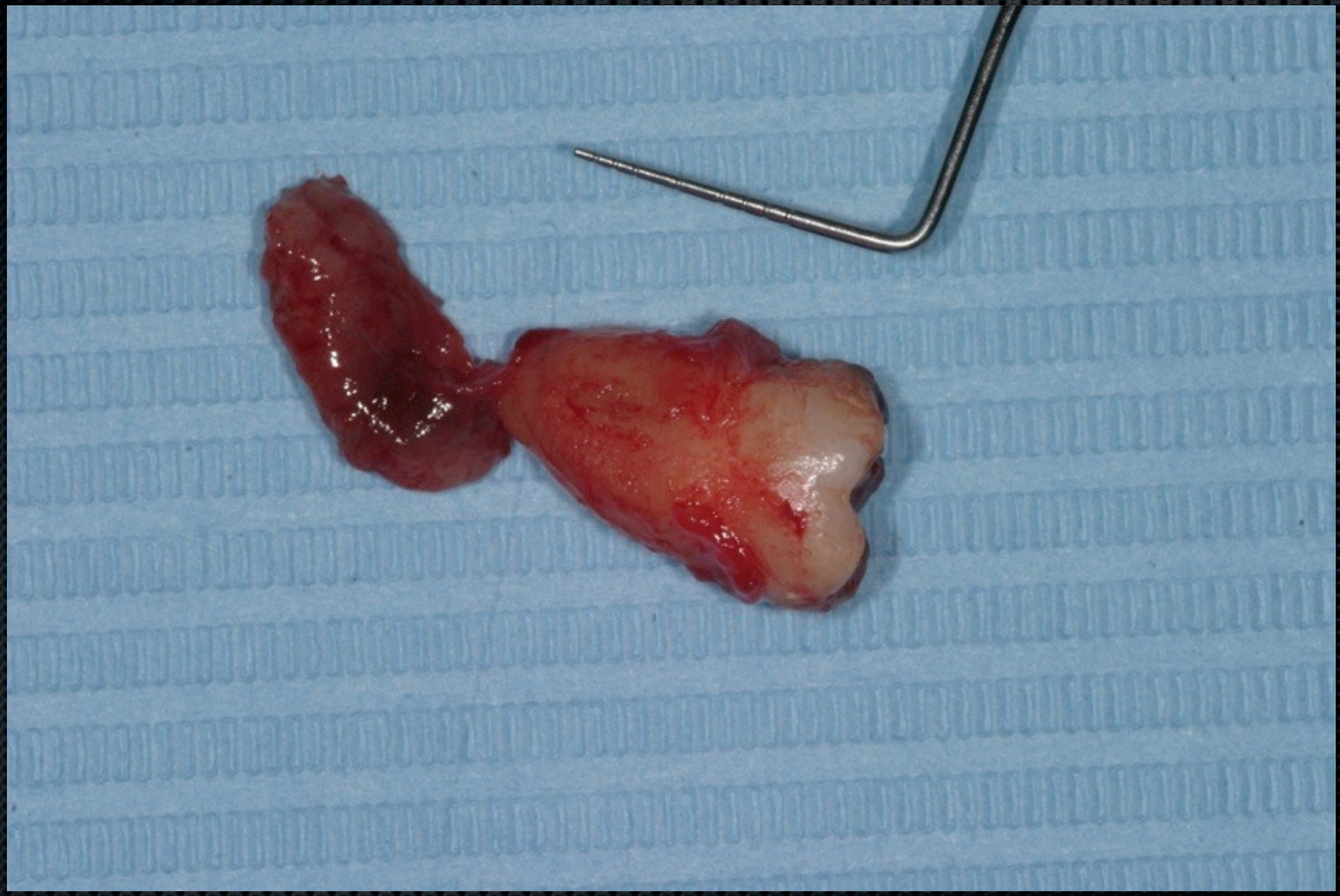


Did CBCT help in this case?

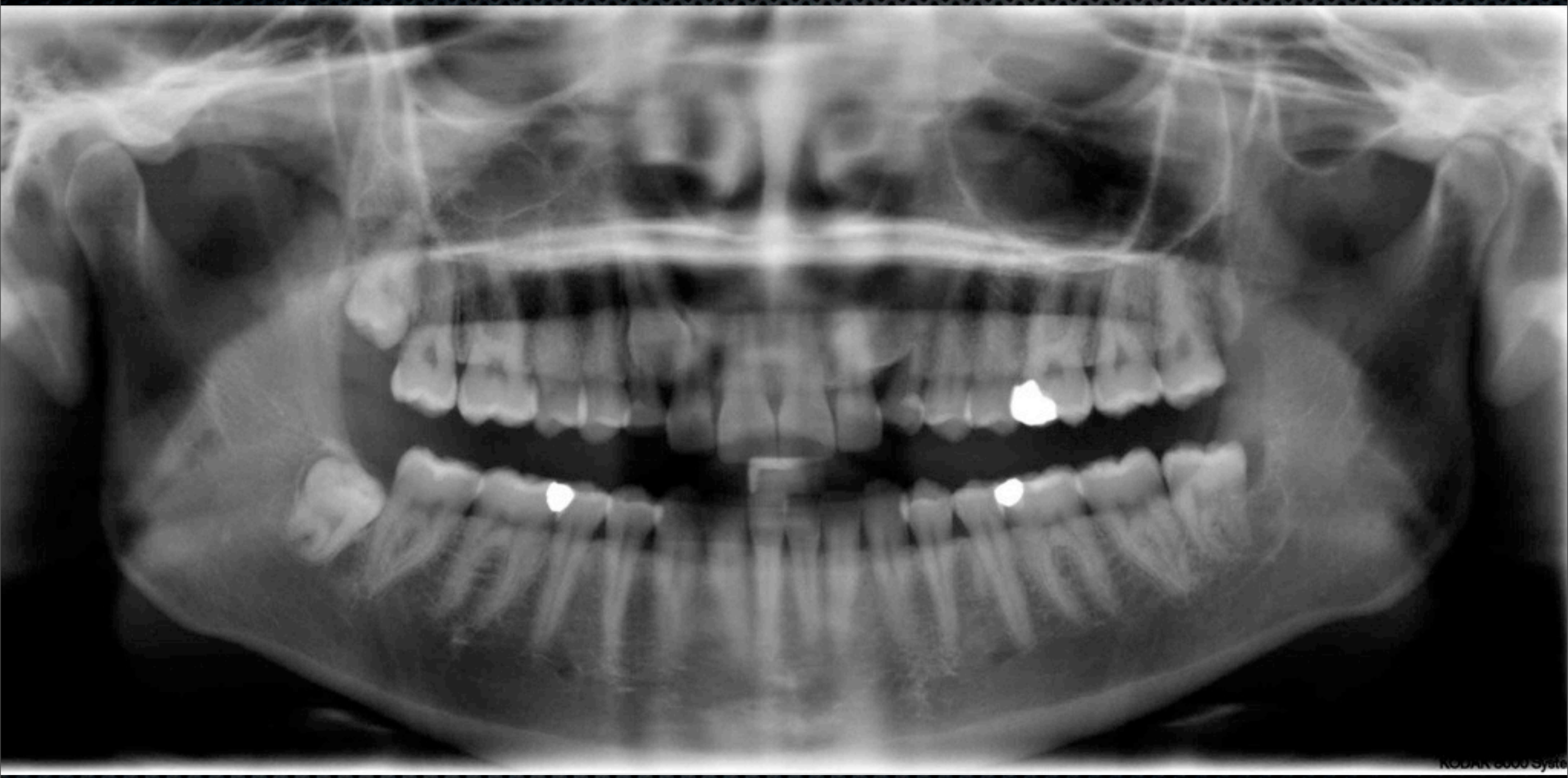
- Otherwise un-diagnosed buried wisdom tooth
- Size and extent of associated pathology
- Position of the id nerve
- Implant planning

Case 2.

Clinical Case 2

- Miss N attended for an implant consultation
- Retained upper C’s
- Poor appearance
- Requested an implant solution

Existing DPT



Clinical Case 2

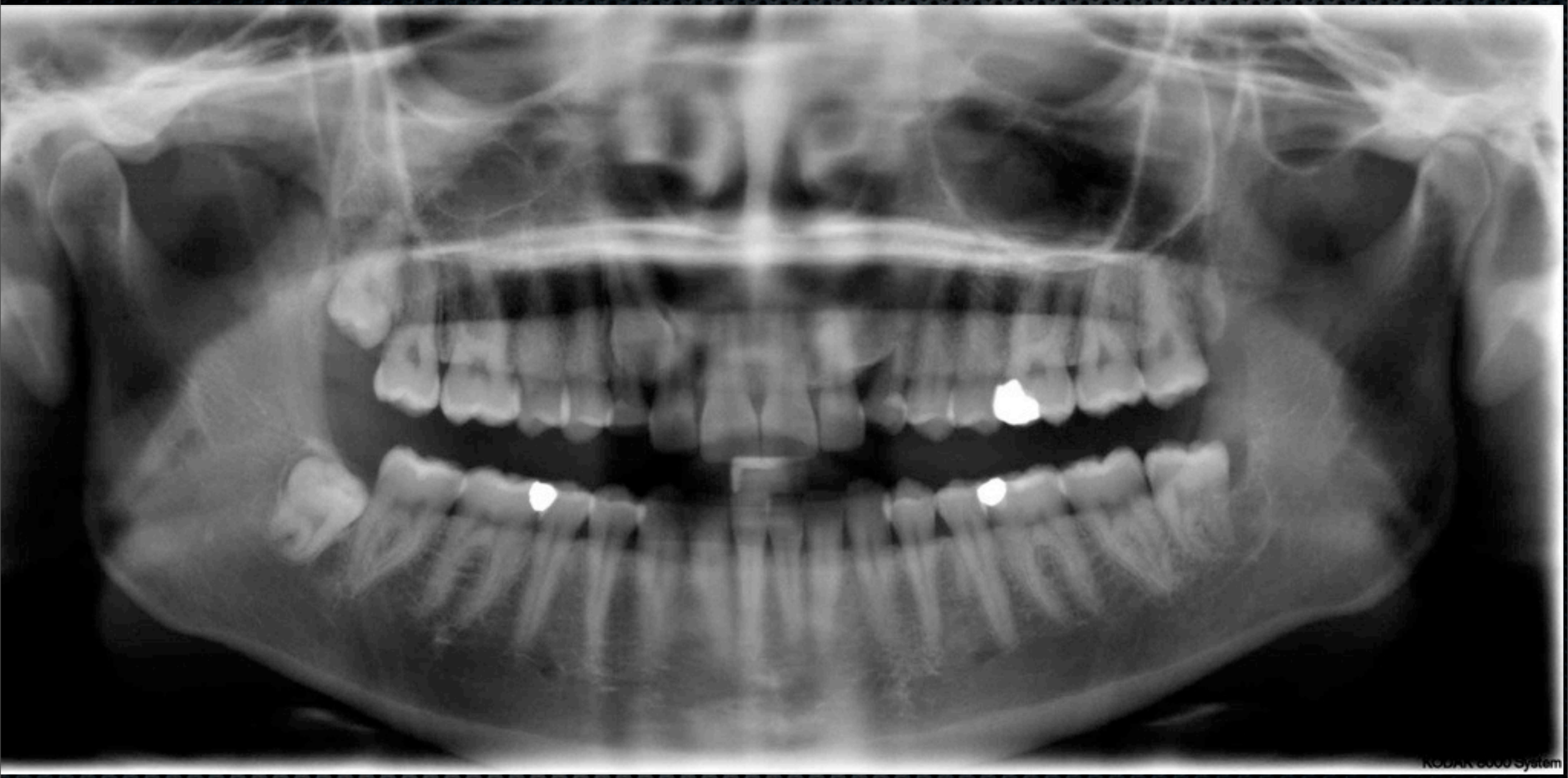
- Treatment options:
  - Extraction of retained C's
  - Orthodontic Alignment
  - Provision of a prosthetic replacement
  - Denture
  - Fixed/RBB Bridgework
  - Implants

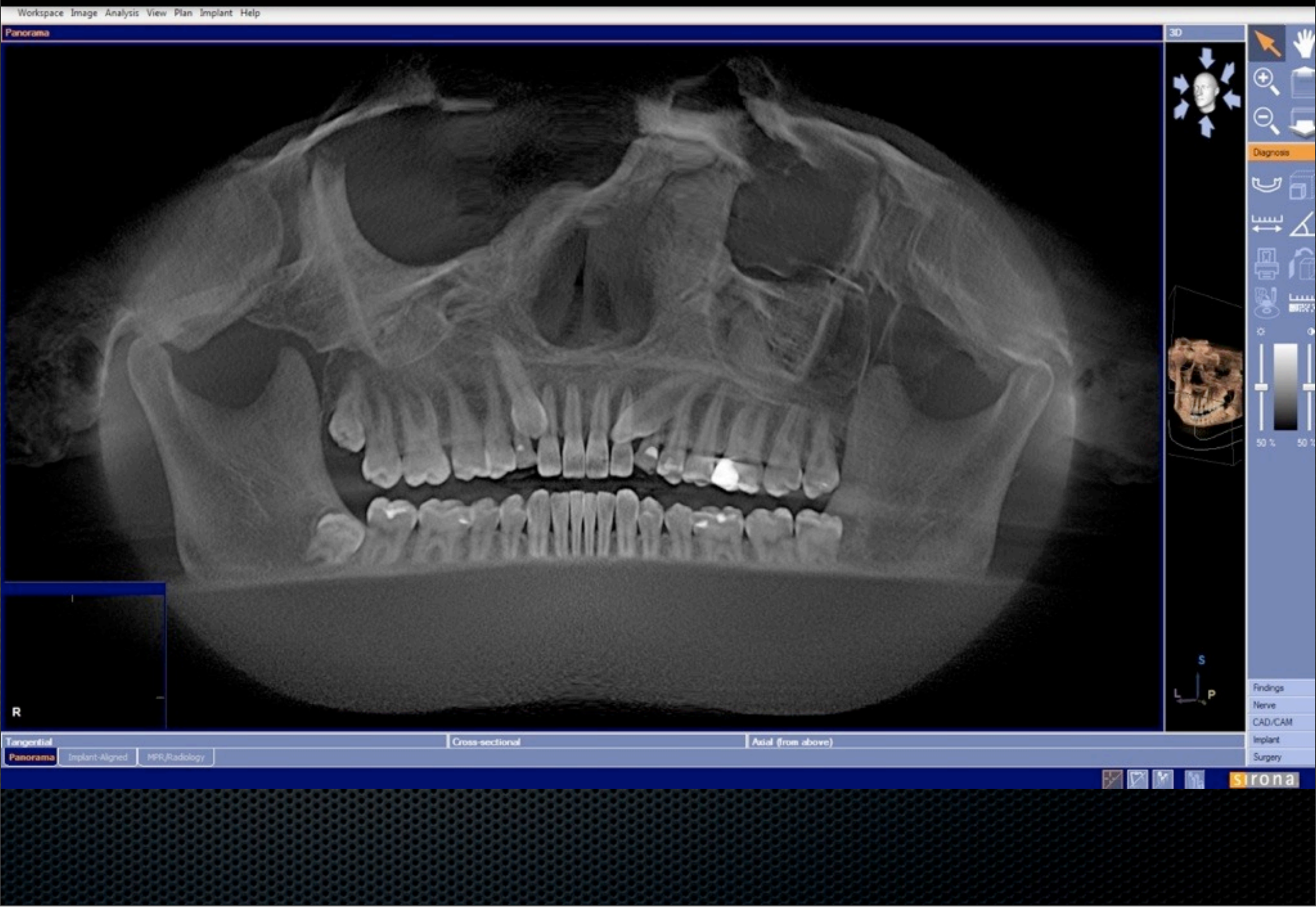
Clinical Case 2

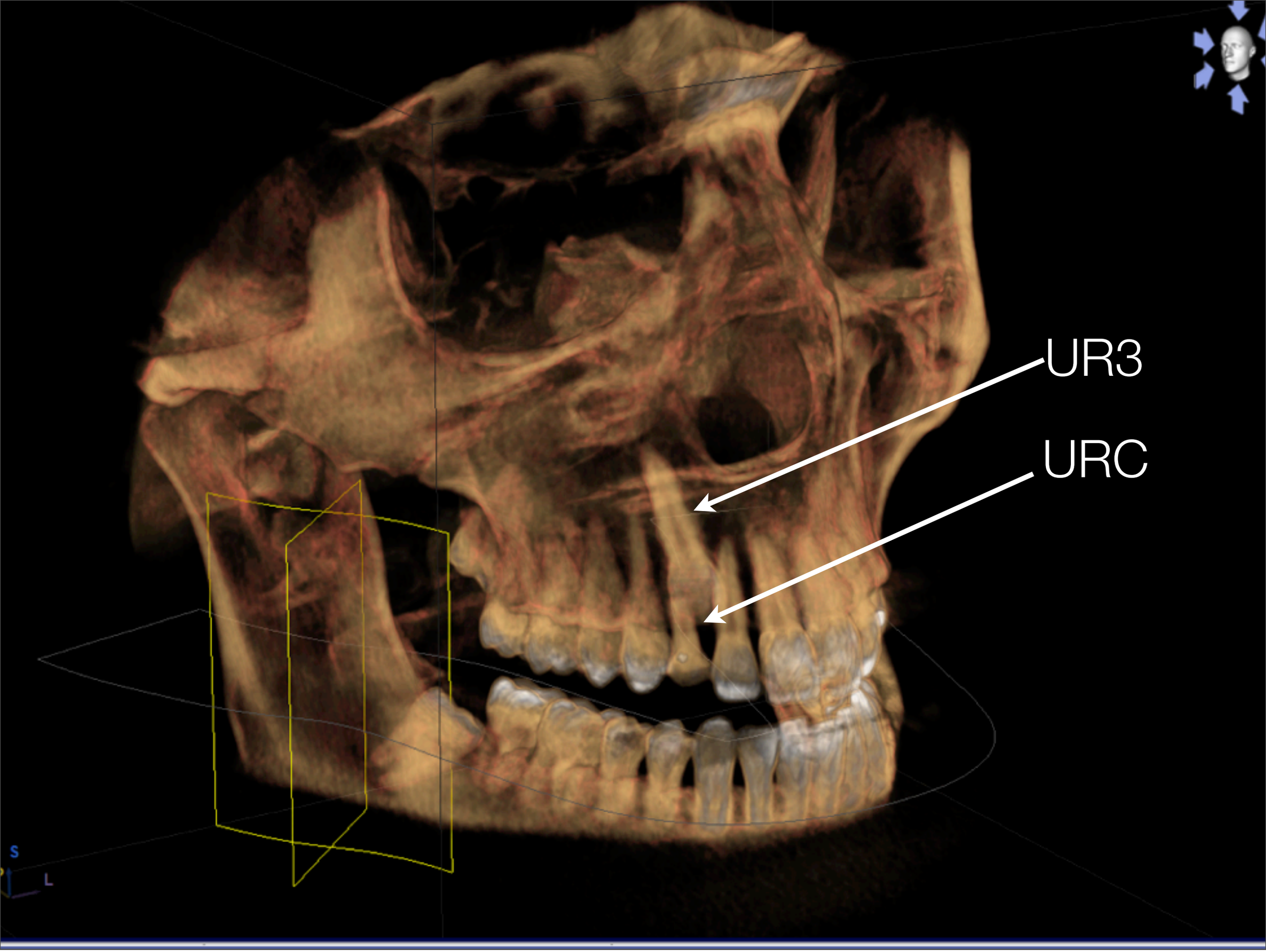
- Position of impacted canines
- Can we place the implants without disturbing the impacted teeth?
- Is this advisable?

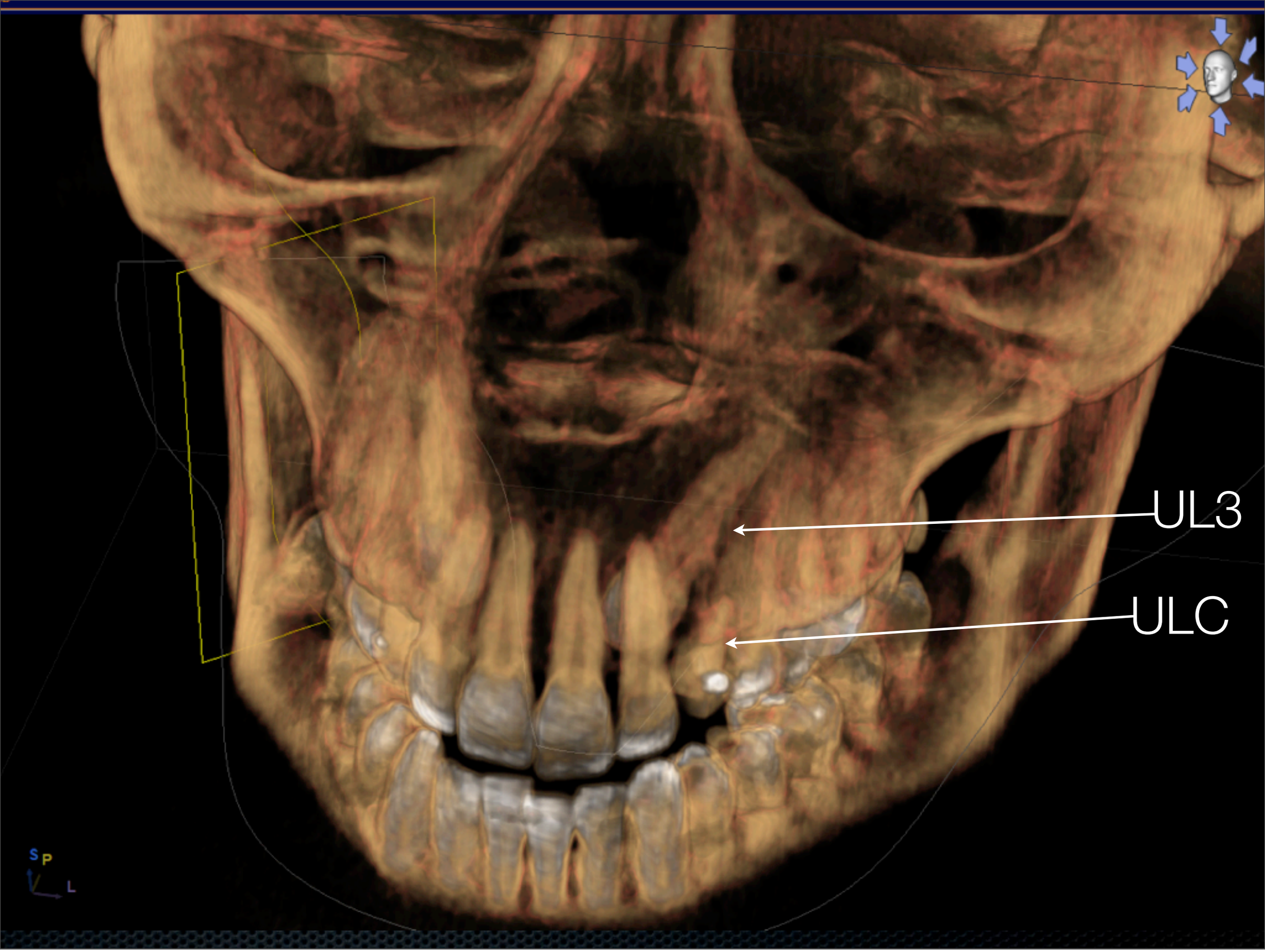
Clinical Case 2

- An upper volume Galileos CBCT was taken to:
  - Assess the exact position of the canines
  - Feasibility of extraction in general practice or secondary referral to hospital
  - Presence of pathology

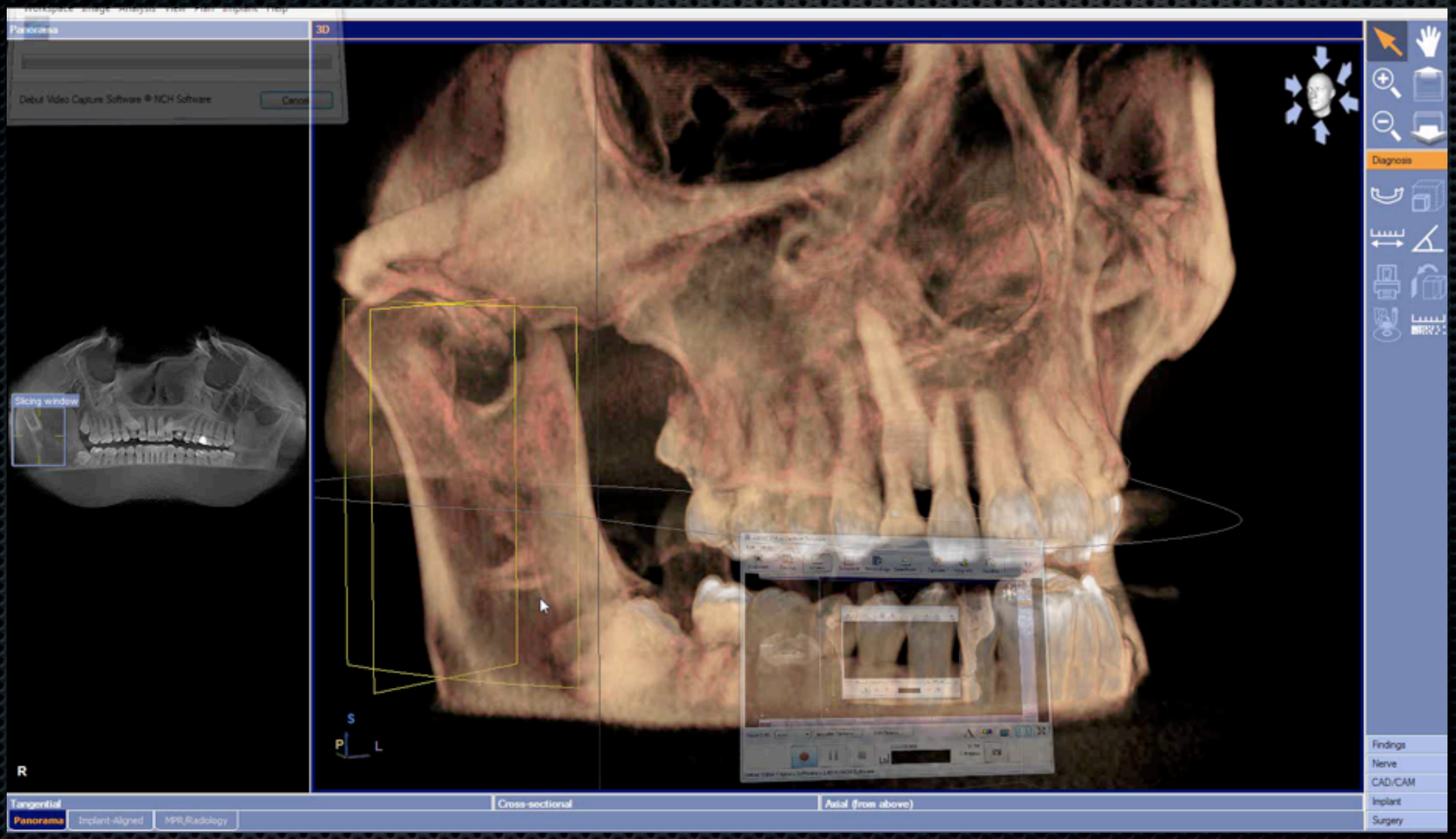



Workspace Image Analysis View Plan Implant Help
Panorama
3D
Diagnosis
50 %
50 %
R
S
L
P
Findings
Nerve
CAD/CAM
Implant
Surgery
Tangential
Cross-sectional
Axial (from above)
Panorama
Implant-Aligned
MPR/Radiology
sirona


UR3
URC
S
L


UL3
ULC
S
P
L

Patient education...



Case 3.

Clinical Case 3

- Mrs C. Previous implant therapy to replace the UR2
- Complained of persistent buccal swellings in the UL2 region
- Previous Endodontic examination revealed a persistent lesion UL2, possible root fracture UL1

Clinical Case 3

- Treatment plan:
  - Extract UL1,2, UR1
  - Immediate implant placement in the UL2 region
  - Restoration with a 4 unit bridge

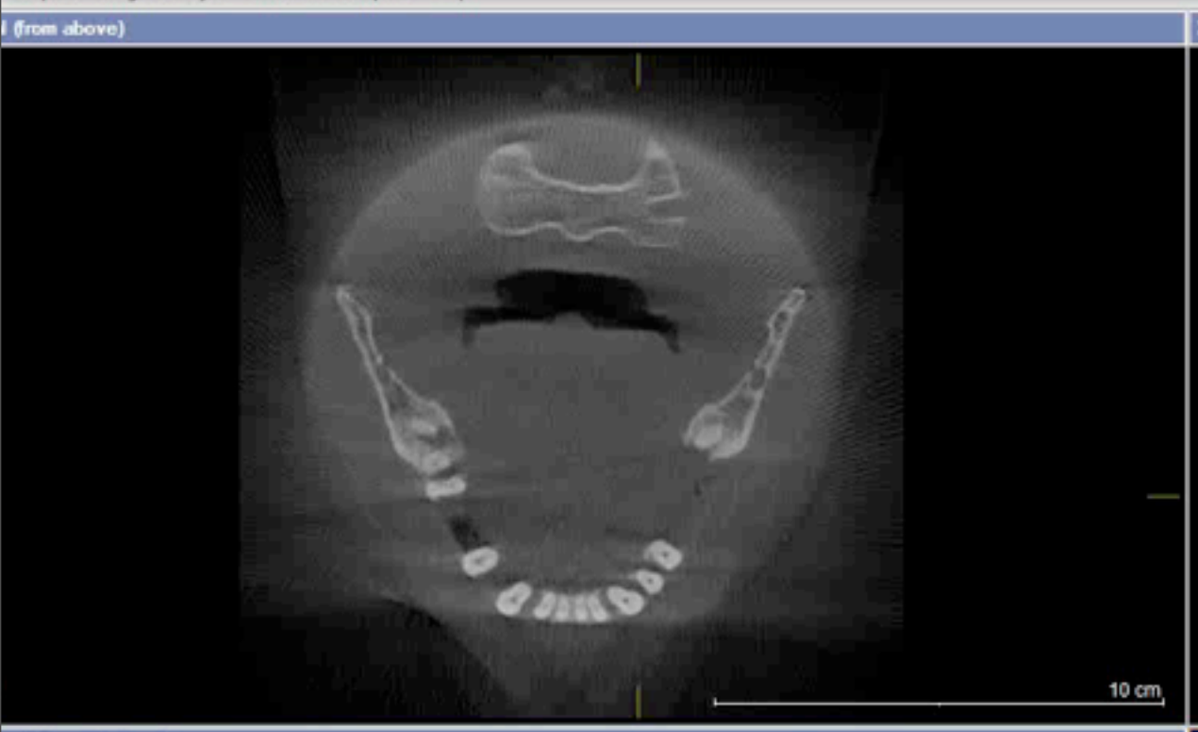
CBCT showed..

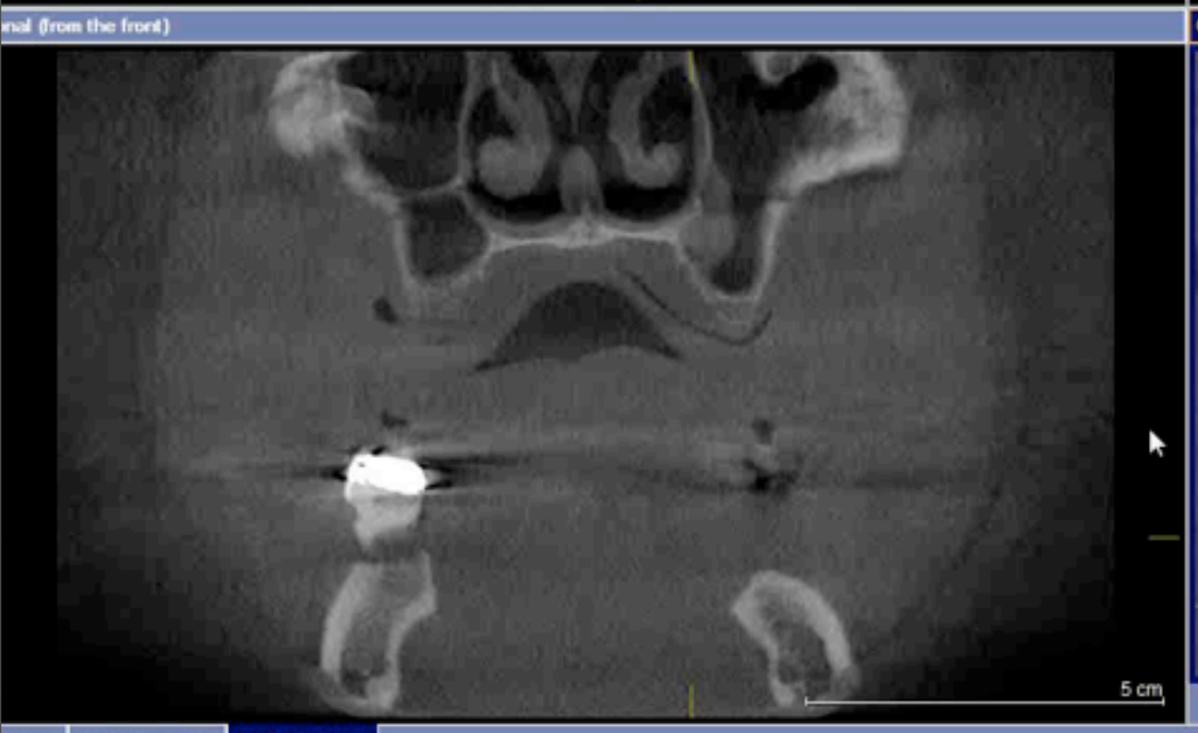
CBCT showed..

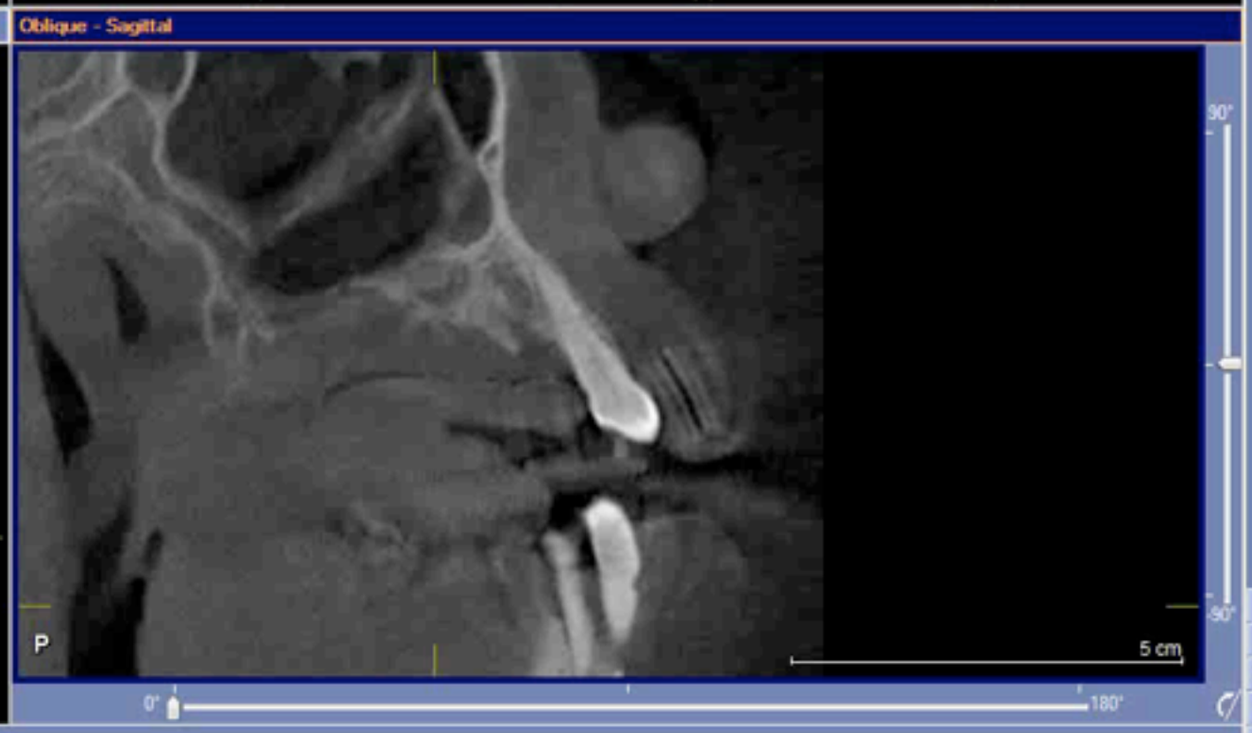
Case 4.

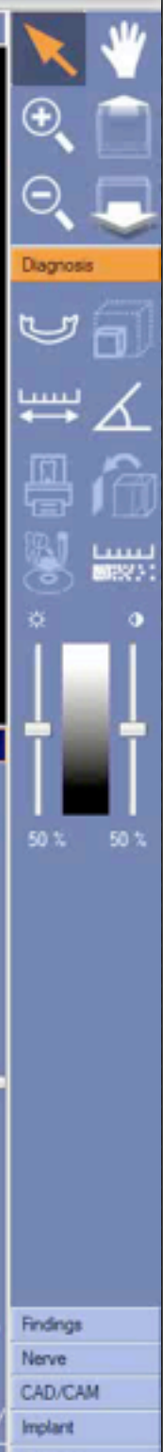
Diagnostic Stent

Soon to be edentulous in the upper arch









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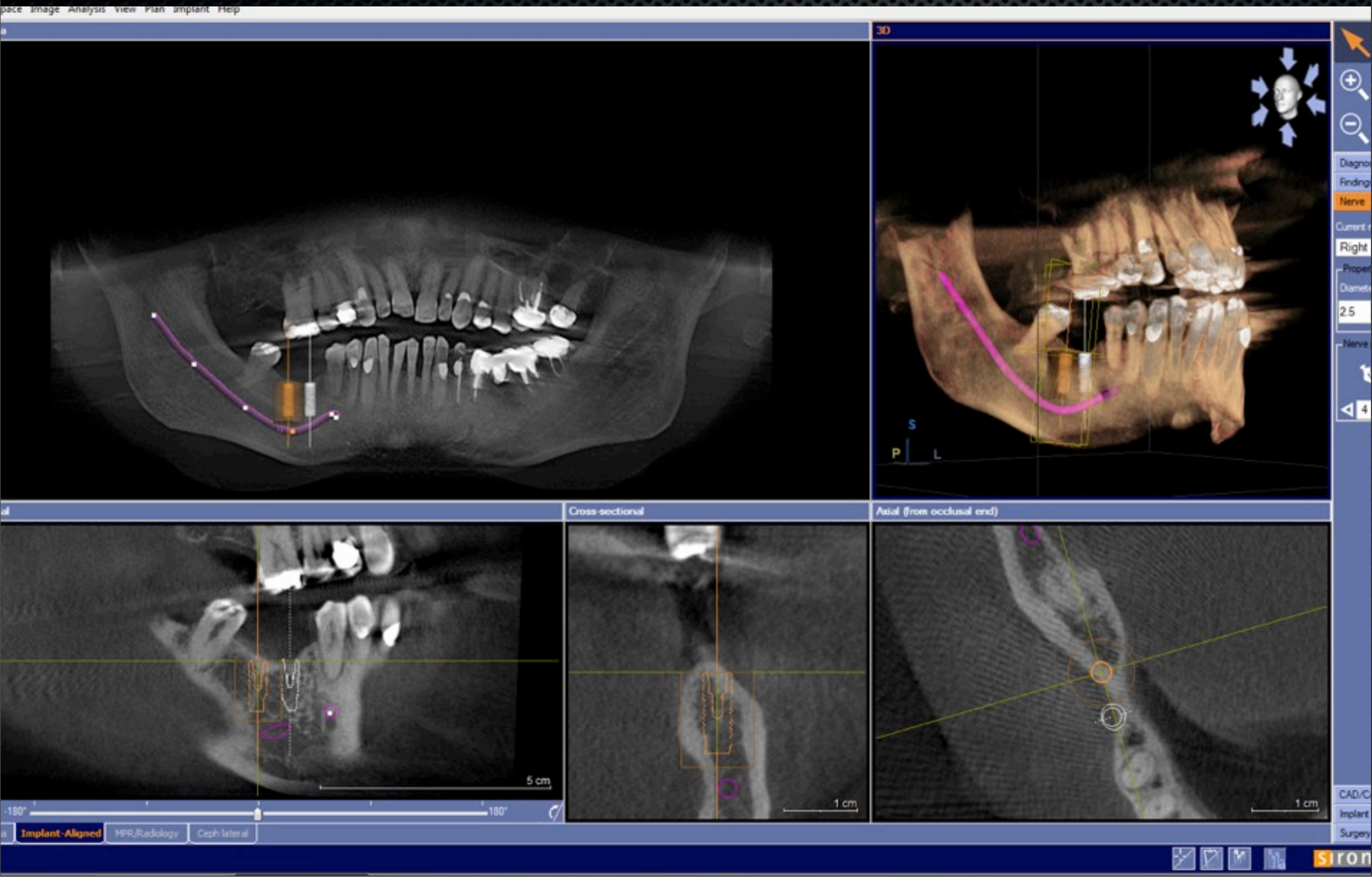
Surgical Planning



SICAT.

GALILEOS Implant
V 1.7.3550.16499

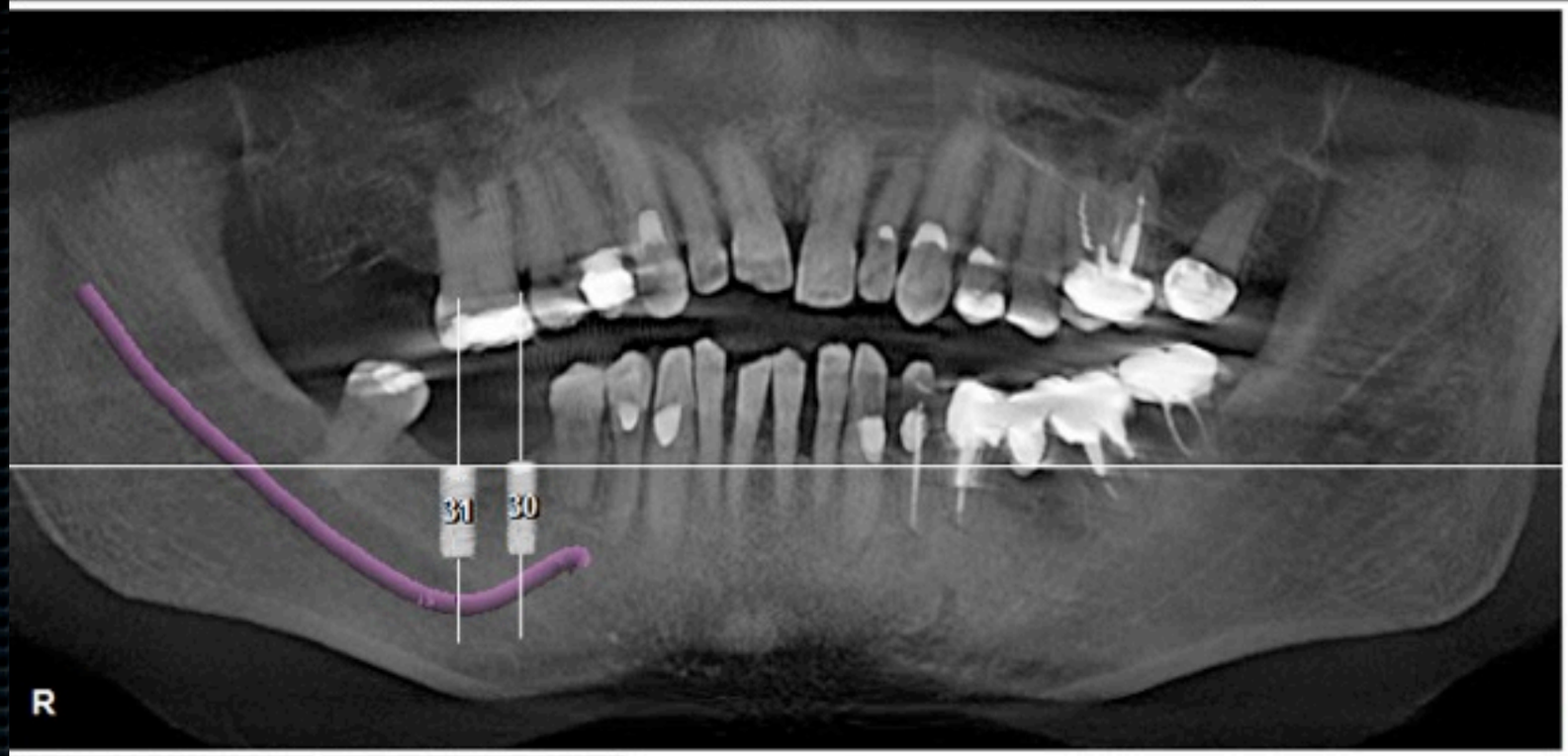
Planning Report – Overview

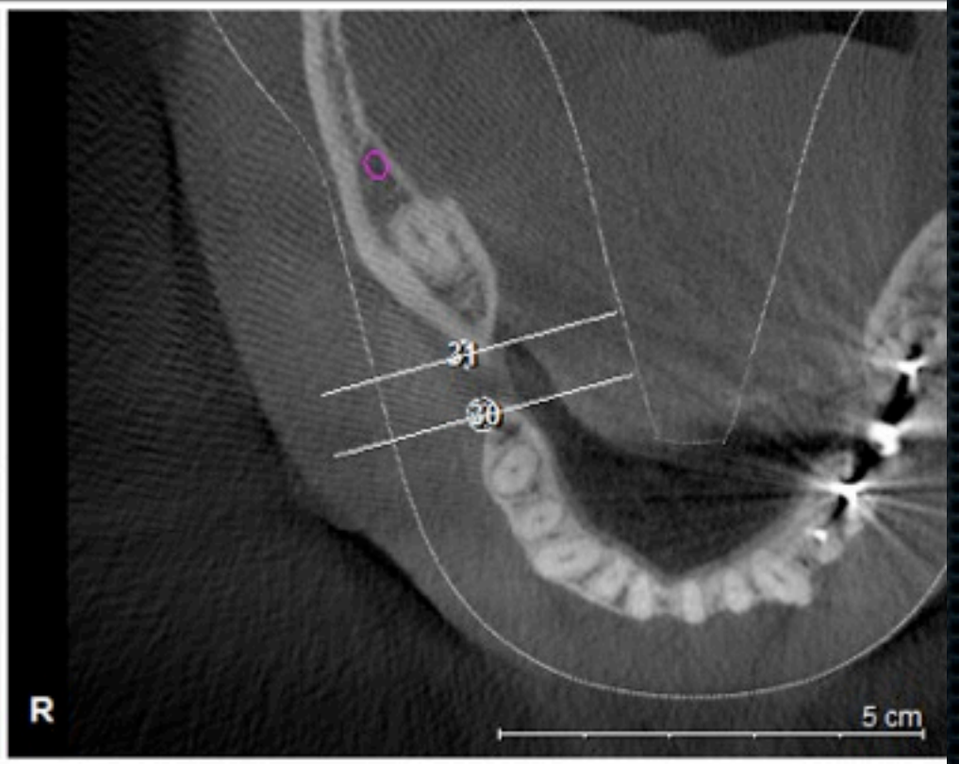
Patient: [redacted]

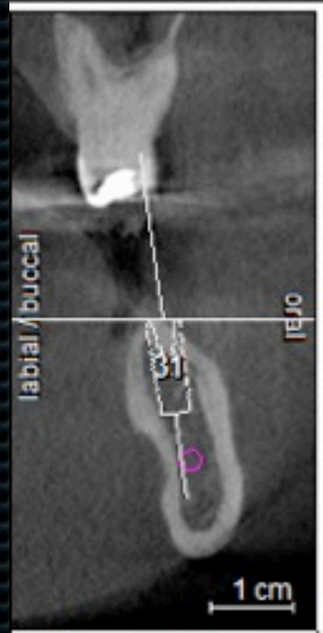
Scan: 20/03/2010 13:22

Plan: Plan 1 [Mandible]

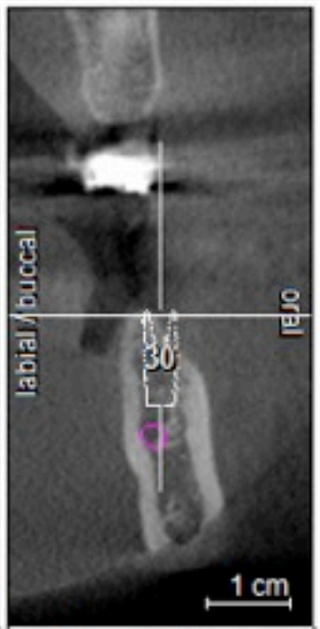
Tooth chart: ADA







4 mm x 11 mm
Astra Tech
OsseoSpeed S
24622



4 mm x 11 mm
Astra Tech
OsseoSpeed S
24622

This report is intended for documentation only. For diagnosis and implant planning use GALAXIS/GALILEOS Implant.

SICAT.

GALILEOS Implant
V 1.7.3550.16499

Planning Report – Implant 30

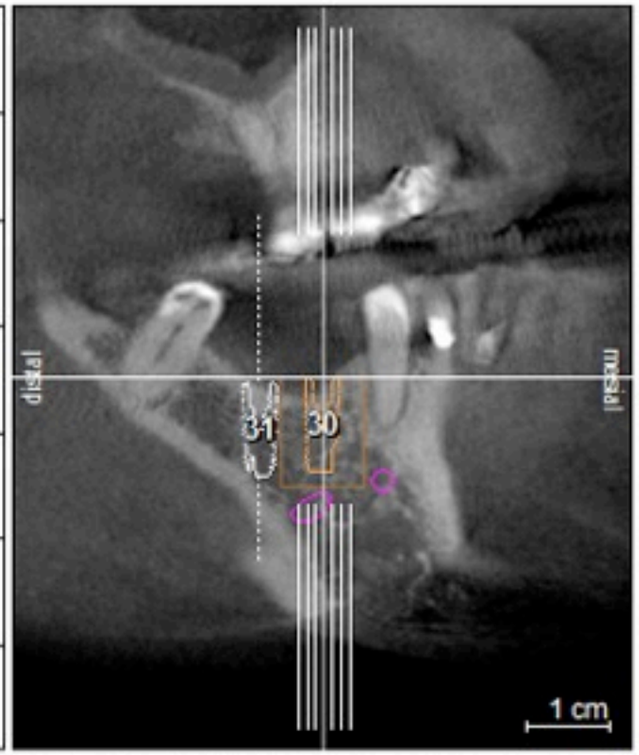
Patient: [redacted]

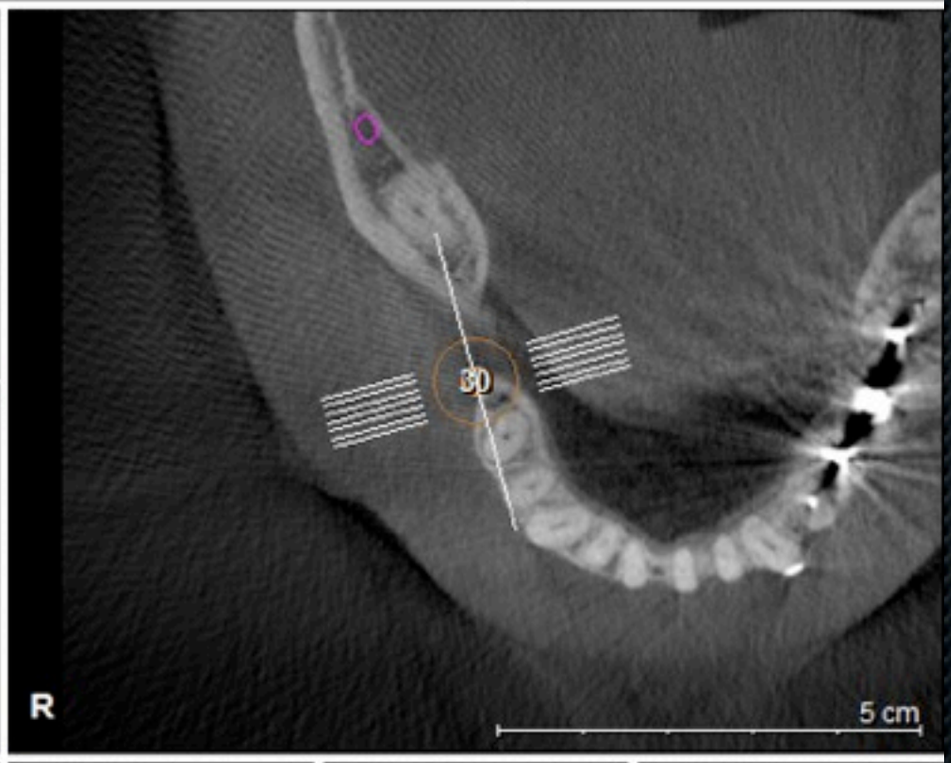
Scan: 20/03/2010 13:22

Plan: Plan 1 [Mandible]

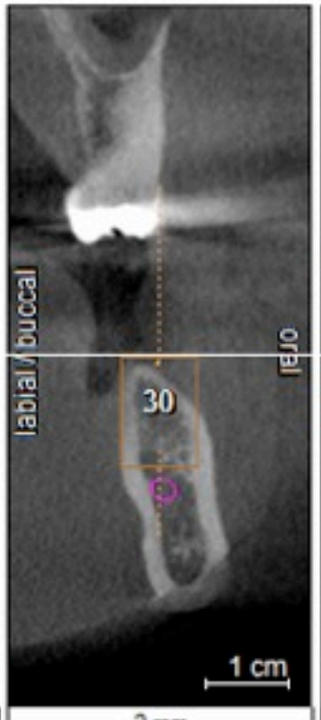
Tooth chart: ADA

Position	30
Length	11 mm
Occlusal diameter	4 mm
Apical diameter	4 mm
Manufacturer	Astra Tech
Implant line	OsseoSpeed S
Serial number	24622

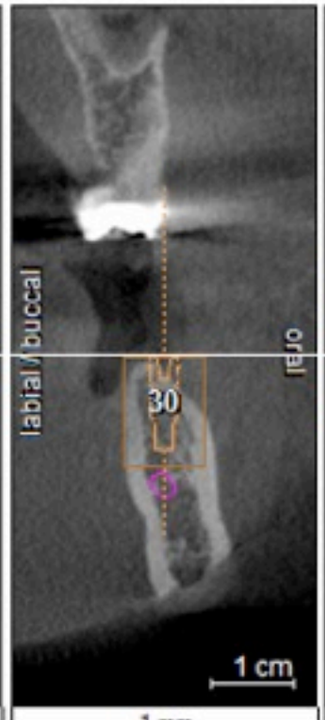




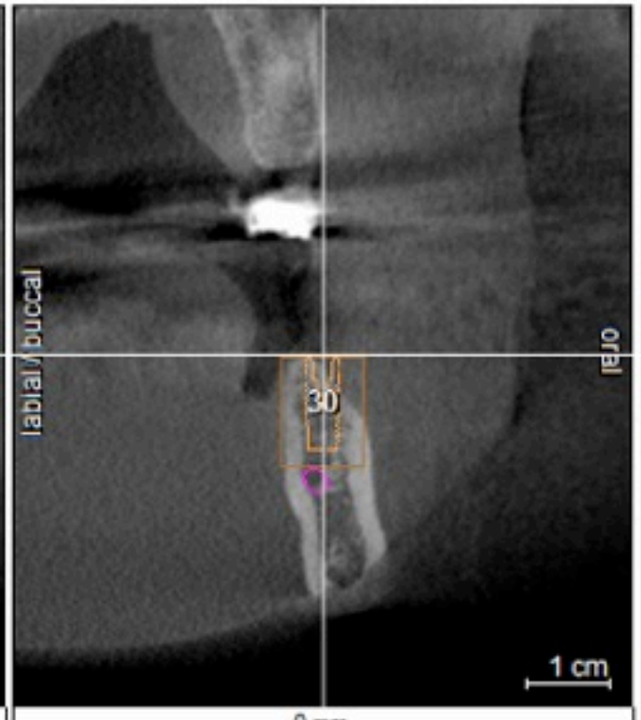
-3 mm



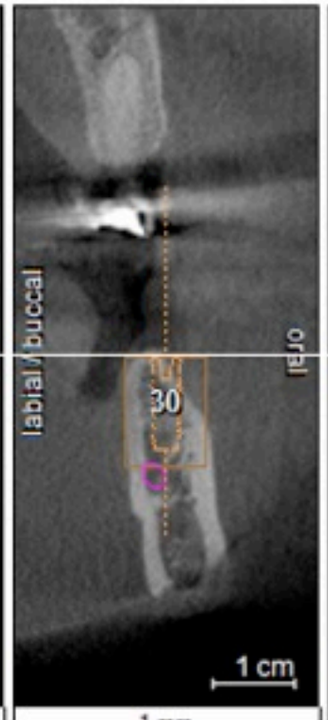
-2 mm



-1 mm



0 mm



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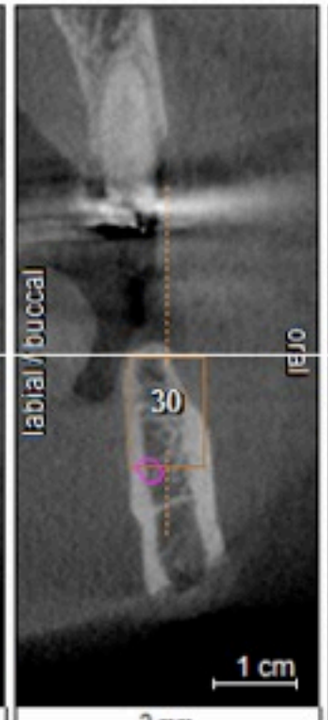

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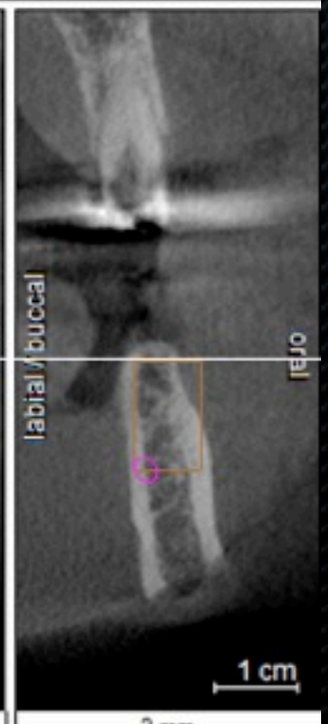

3 mm

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Scan Reporting...

JM RADIOLOGY

Specialist Dental and Maxillofacial Imaging Service

Director Dr J Makdissi FDS RCS DDR RCR

01474 703300
jm@jm-radiology.co.uk

Our ref: JJM/DP

10th May, 2010

Mr.N.Parmar,
Parmar Dental,
673 Southchurch Rd.,
Southend-on-Sea,
Essex SS1 2PW

Dear Mr.Parmar,

Re: [redacted]
Date of Scan 20th March 2010, Date of report 10th May 2010

Clinical indications: Unknown

Findings: Both upper canines appear unerupted. There is evidence of underpneumatisation of the right maxillary sinus, with evidence of mucosal thickening. The bony trabecular pattern within the maxilla appears within normal limits. No evidence of expansion or disruption to the cortical outline.

The upper deciduous canines are retained.

There is no evidence of dentigerous cyst formation in relation to the unerupted canines.

Clinical correlation advised.
Yours sincerely,

Dr.J.Makdissi, FDS RCS DDR RCR
Consultant Dental and Maxillo-Facial Radiologist

Hints

- Main issue is with patient movement and swallowing during the scan

Please remain still during your CT scan

Parmar Dental is proud to be one of the few practices in the country which has a Galileos™ CT scanner on site.

The CT scanner is a sophisticated imaging unit designed to provide detailed 3D images of patient's jaws and surrounding structures.

Excellent image quality permits diagnosis of the finest details in three dimensions.

Parmar dental

love your smile

www.parmardental.co.uk

BDA goodpractice

26.05.2010 09:57

26.05.2010 09:57

26.05.2010 09:58

Monday, 13 September 2010

Do we always need a CBCT?

- No! We must weigh up the advantages of the scan vs. the radiation dose,