

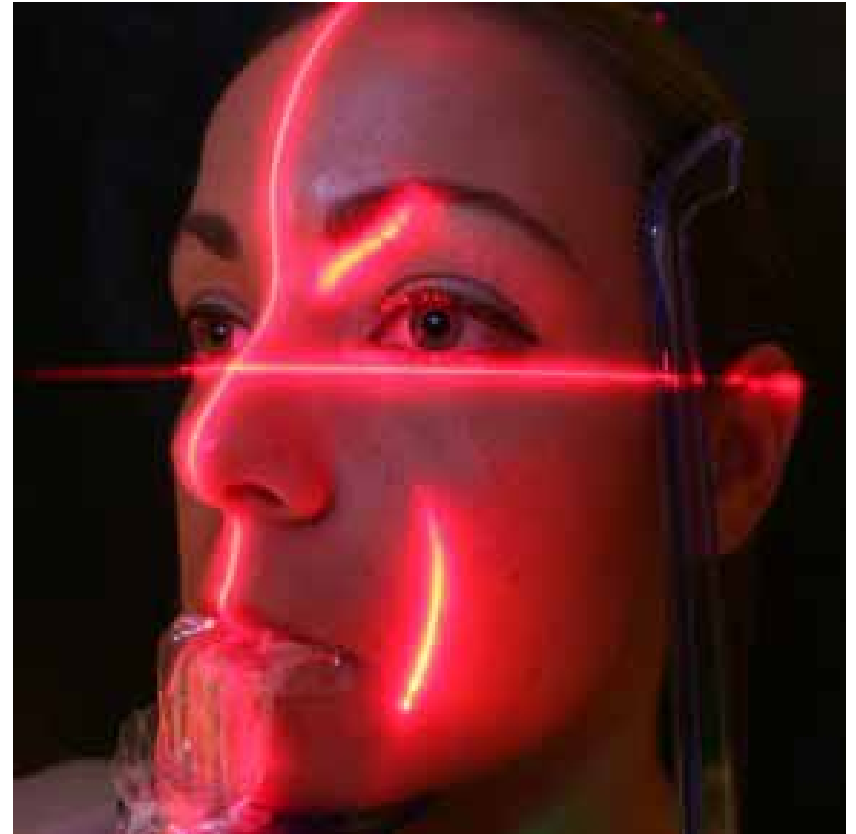
Uporaba Cone beam volumometrične tehnike slikanja v ortodontiji

Uroš Mezeg, dr.dent.

Radiacijske doze

Clinical indication	Imaging method	Effective dose (μSv)
Primary diagnosis of impacted teeth	Panoramic	5-45 (digital) ^{4,5}
		16-54 (film) ^{5,6}
	Occlusal film	7 (digital) ⁷
Diagnosis of complex wisdom teeth	Panoramic	5-45
	Frontal cephalic	1.6-3.4 (digital) ⁸
Implant planning	Panoramic	5-45
	Transversal slices	3-12 ⁹
	3D computed tomography	150-1270 ^{6,10}
	3D cone-beam volumetric imaging	29-330 ^{4,10}

Namestitev pacienta



Anomalije zob

- Anomalije pri številu zob
- Anomalije oblike zob
- Resorbcija korenin

5:32:55
Martin Pollicar [M] 12
20090130
Series: 999

Sagittal

ID: 5525
Martin Pollicar [M] 12
20090130
Series: 999



6 [mA]
65 [kVp]
CT

6 [mA]
65 [kVp]
CT

Axial

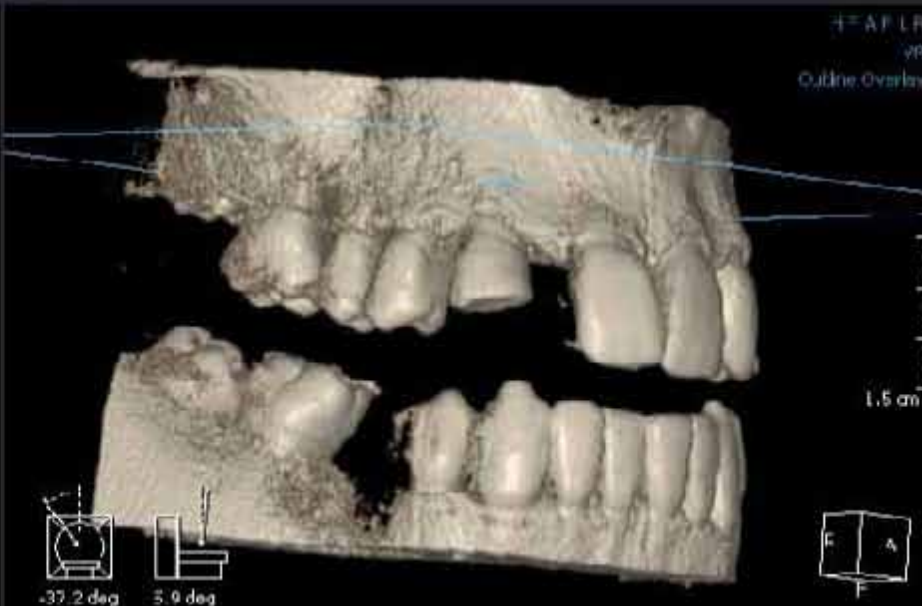
3D

ID: 5525
Martin Pollicar [M] 12
20090130
Series: 999

MPR
Th: 0 [mm]



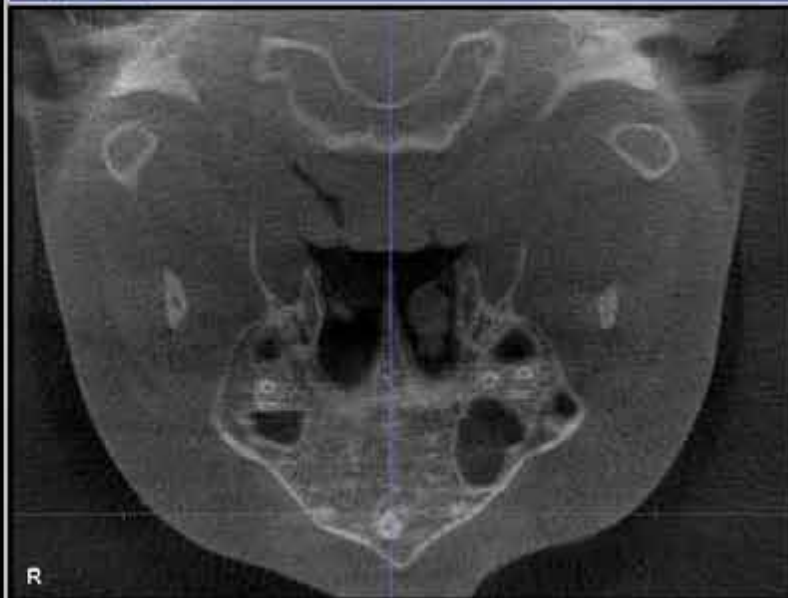
6 [mA]
65 [kVp]
CT



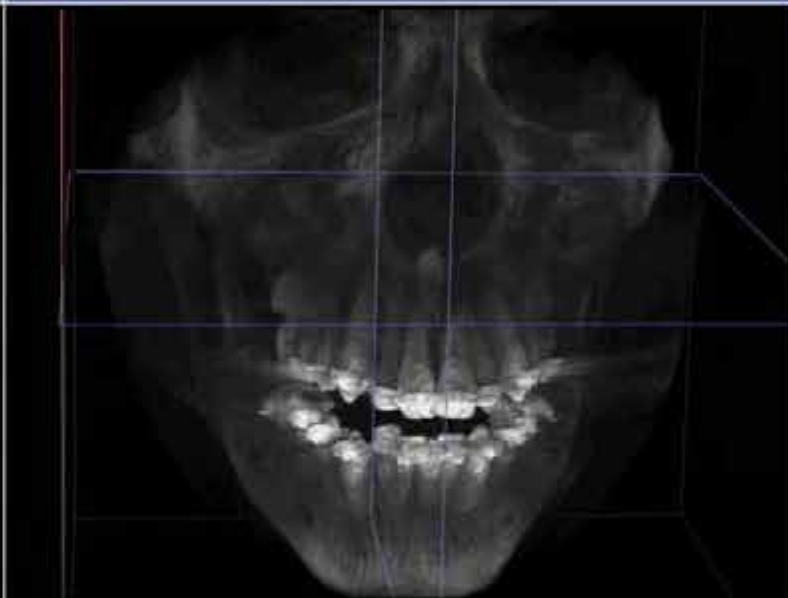
A F L R
98
Outline Overlay

-37.2 deg
5.9 deg

Axial (from above)



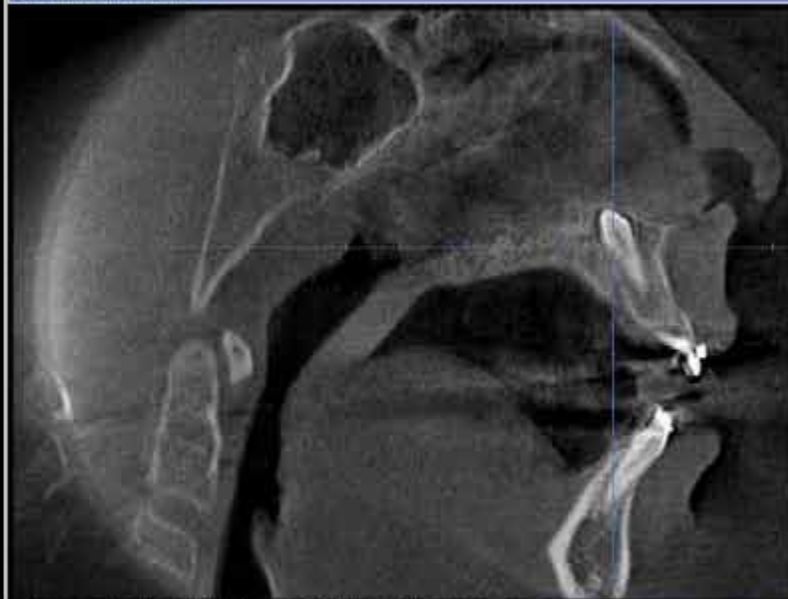
3D Overview



Tools



Sagittal (from the right)



Coronal (from the front)



Nerve Canals

Implants



Coronal

ID: 5196
 Laura Mušić [F] 12
 20090724
 Series: 999



6 [mA]
 85 [kVp]
 CT

Sagittal

ID: 5196
 Laura Mušić [F] 12
 20090724
 Series: 999



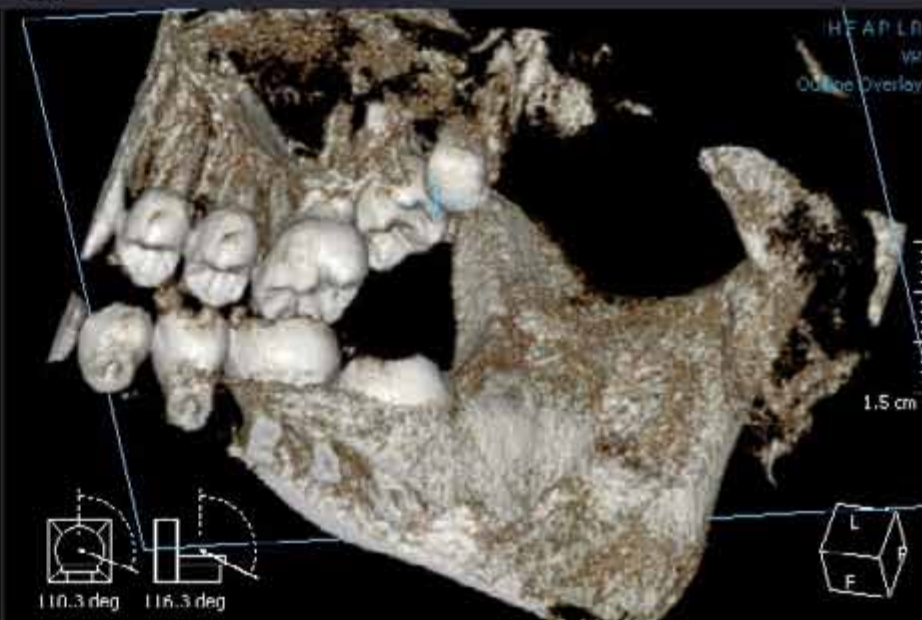
6 [mA]
 85 [kVp]
 CT

Axial

ID: 5196
 Laura Mušić [F] 17
 20090724
 Series: 999



6 [mA]
 85 [kVp]
 CT

3D

110.3 deg 116.3 deg

ID: 7636
GAL^SEKNE [M] 017Y
20120127
Series: 1



4.5 [mA]
85 [kvp]
CT

Axial

ID: 7636
GAL^SEKNE [M] 017Y
20120127
Series: 1



4.5 [mA]
85 [kvp]
CT

3D

ID: 7636
GAL^SEKNE [M] 017Y
20120127
Series: 1



4.5 [mA]
85 [kvp]
CT



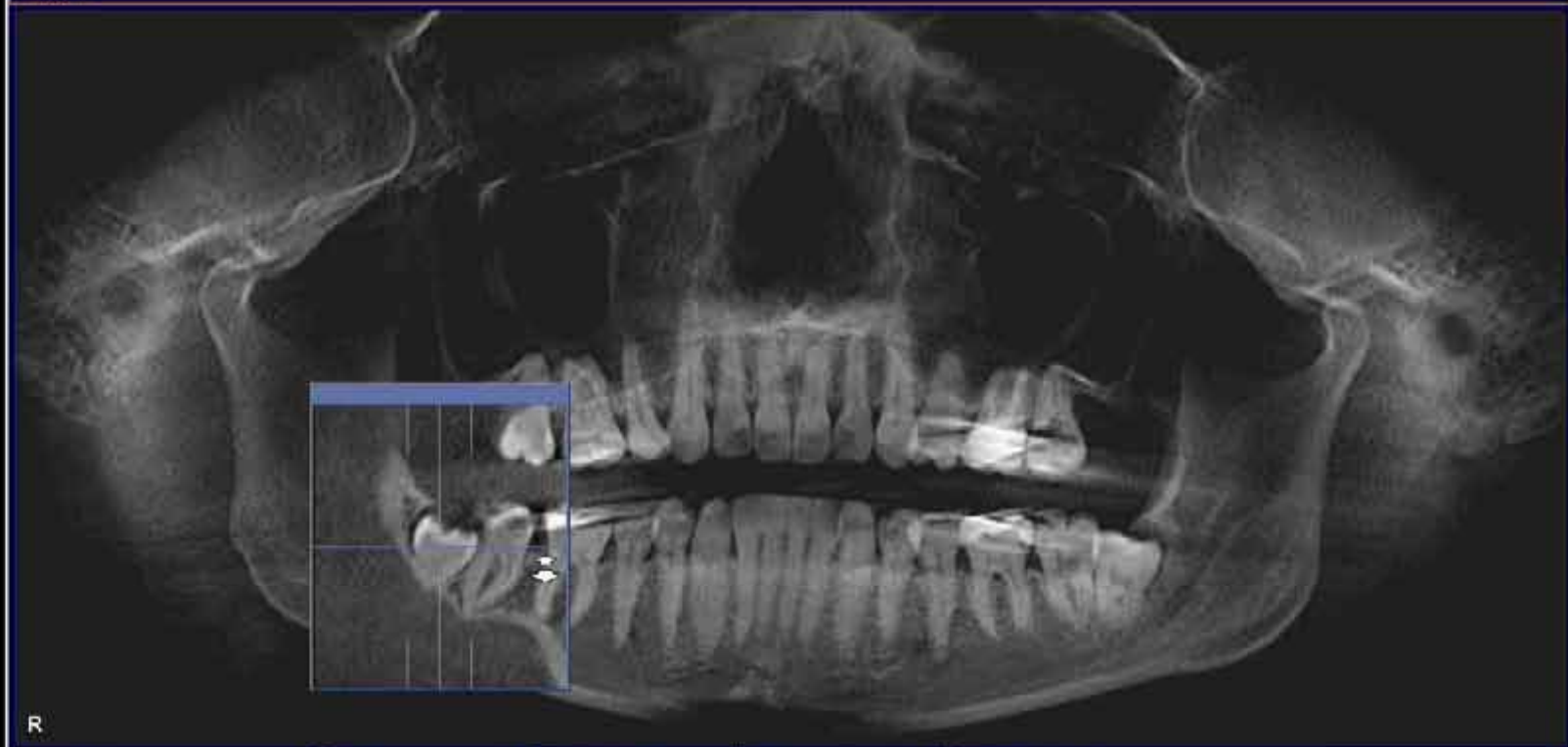
-90.5 deg
95.3 deg

HFAPLR
VR
Outline Overlay

Impaktirani zobje

- Ektopični in impaktirani modrostni zobje
- Ostali ektopični zobje
- Resorbcija struktur ob zobeh
- Splošnje motnje izraščanja zob

Panorama



R



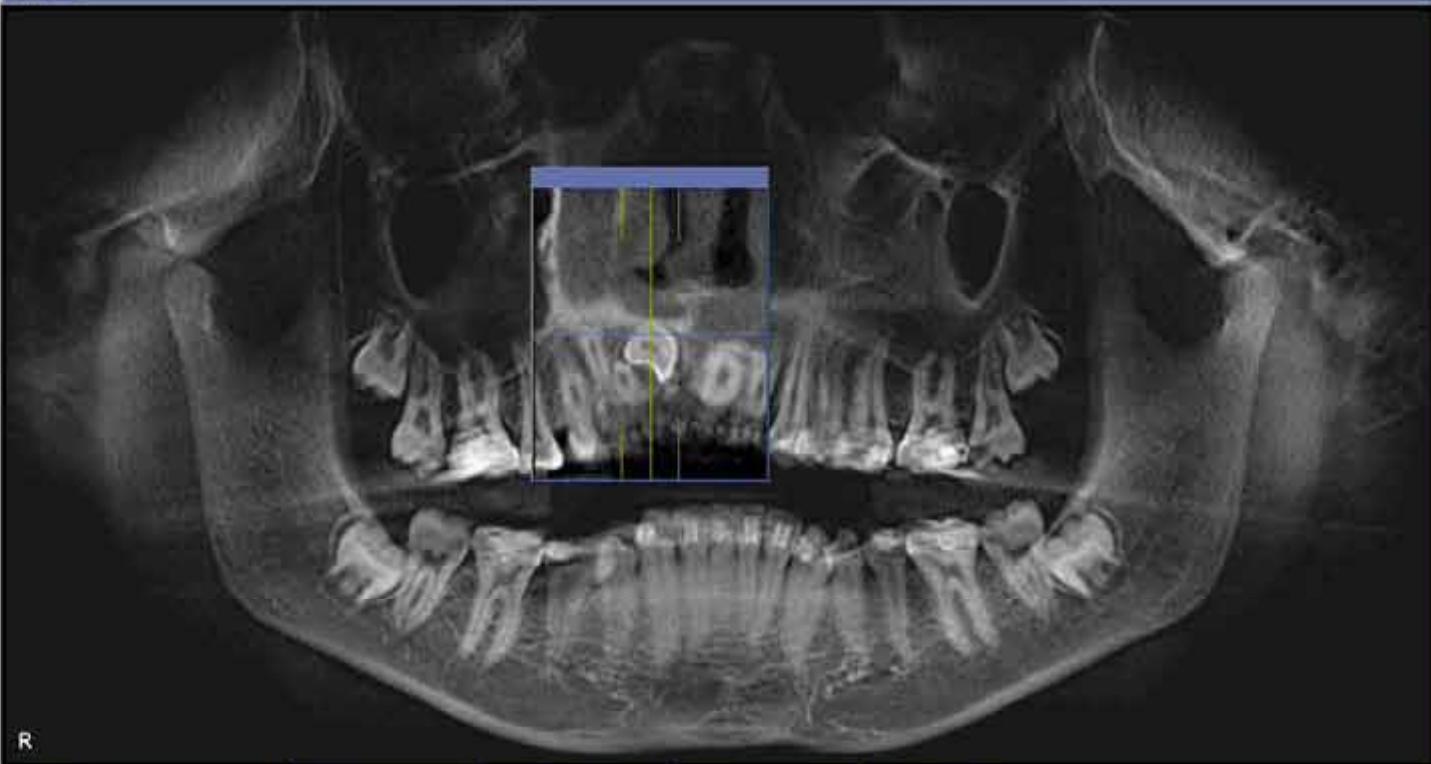
Tools

62 % 0 %

Nerve Canals
Implants

The right-hand side of the interface contains a vertical toolbar. At the top, it is labeled 'Tools' and contains icons for printing, zooming, and other functions. Below these are two vertical sliders, one labeled '62 %' and the other '0 %'. Further down, there are icons for 'Nerve Canals' and 'Implants', each with a corresponding arrow icon. At the bottom of the toolbar are icons for zooming in (+) and zooming out (-).

Panorama



Tools

A vertical toolbar containing several icons: a printer, a magnifying glass, a ruler, a square, a document, and a window icon. Below these icons are two vertical sliders with a black-to-white gradient bar between them, labeled '56%' and '50%'.

R

Tangential 5mm Cross sectional 5mm Axial (from above)



Nerve Canals
Implants

A panel with the text 'Nerve Canals' and 'Implants' above a set of navigation icons: a hand, a magnifying glass with a plus sign, a magnifying glass with a minus sign, and a double-headed arrow.

Coronal

ID: 5318
Lea Stevanovic [F] 12
20090317
Series: 999



G [mA]
85 [kVp]
CT



Sagittal

ID: 5318
Lea Stevanovic [F] 12
20090317
Series: 999

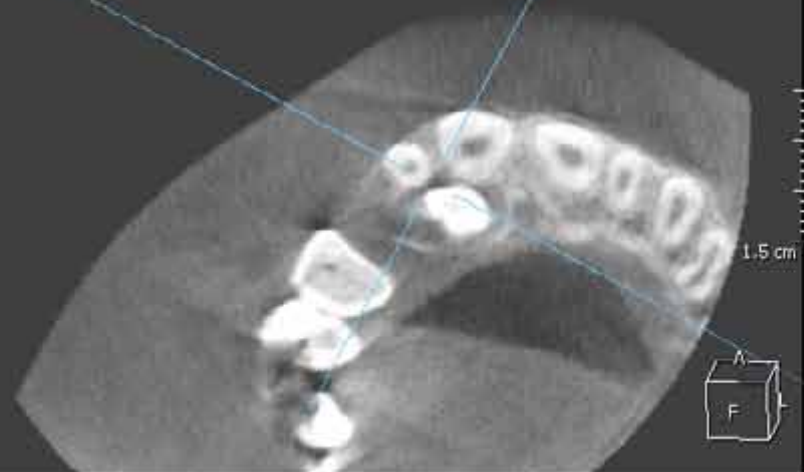


G [mA]
85 [kVp]
CT



Axial

ID: 5318
Lea Stevanovic [F] 12
20090317
Series: 999



G [mA]
85 [kVp]
CT



3D



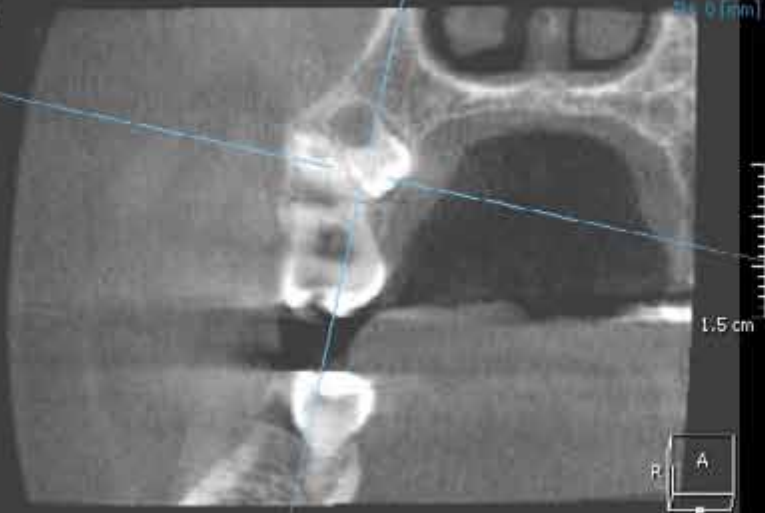
-52.0 deg
-0.7 deg



Coronal

ID: 5038
Nika Ripnar [F] 11
20091019
Series: 999

MPR
11.0 [mm]



6 [mA]
85 [kvp]
CT

Axial

ID: 5038
Nika Ripnar [F] 11
20091019
Series: 999

MPR
11.0 [mm]



6 [mA]
85 [kvp]
CT

Sagittal

ID: 5038
Nika Ripnar [F] 11
20091019
Series: 999

MPR
11.0 [mm]



6 [mA]
85 [kvp]
CT

3D

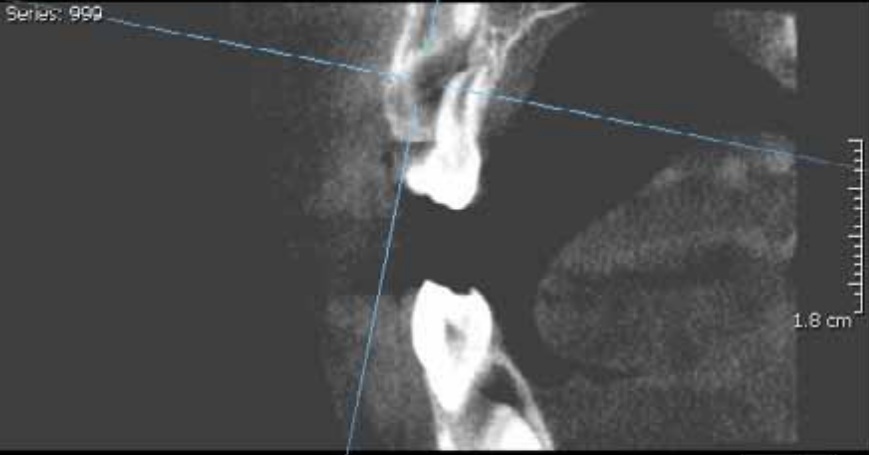


126.4 deg 126.5 deg

Coronal

ID: 7020
TIN STER [M] 9
20100218
Series: 999

MPR
TH: 0 [mm]



1.8 cm

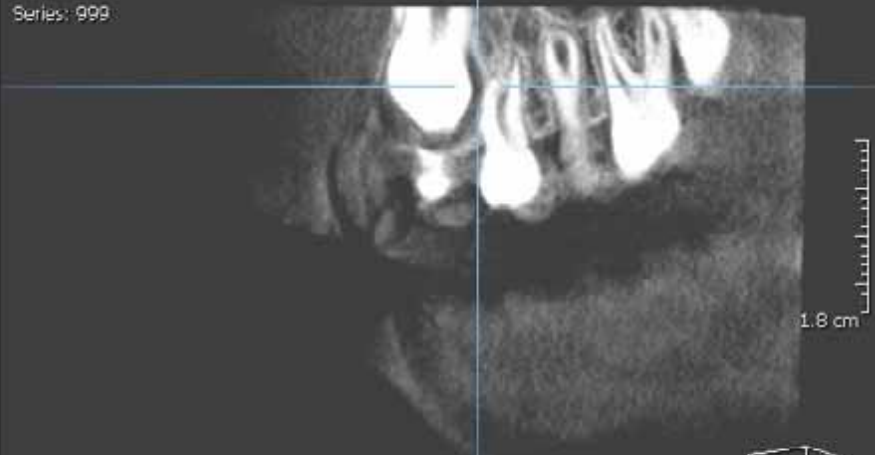
5 [mA]
85 [kVp]
CT



Sagittal

ID: 7020
TIN STER [M] 9
20100218
Series: 999

MPR
TH: 0 [mm]



1.8 cm

5 [mA]
85 [kVp]
CT



Axial

ID: 7020
TIN STER [M] 9
20100218
Series: 999

MPR
TH: 0 [mm]

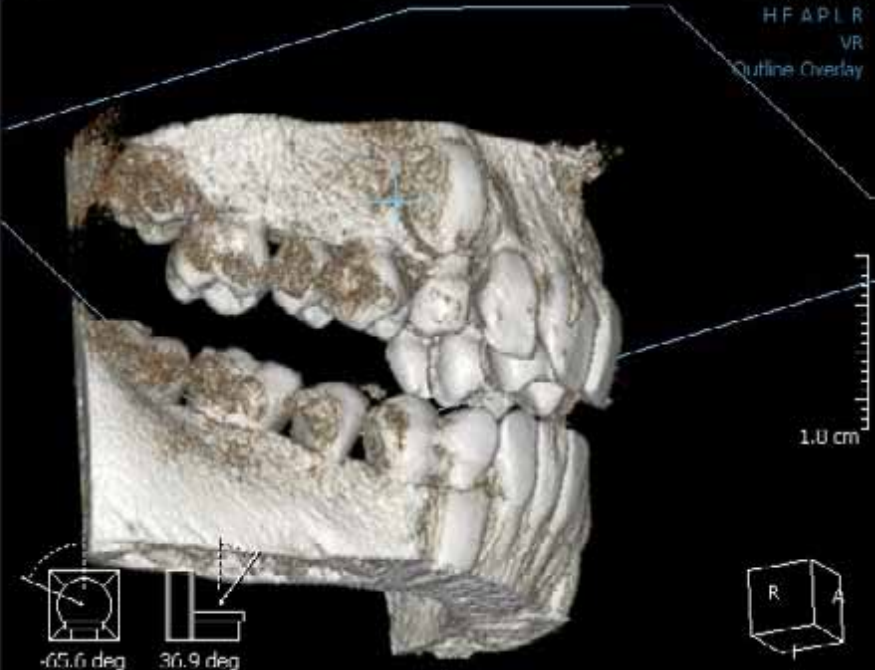


1.0 cm

5 [mA]
85 [kVp]
CT



3D



HF APLR
VR
Outline Overlay

1.0 cm

-65.6 deg
30.9 deg



Coronal

ID: 5509
 ANDRAZ^MAIER, [M] 011Y
 20101011
 Series: 1

MPH
 TH 0 (mm)

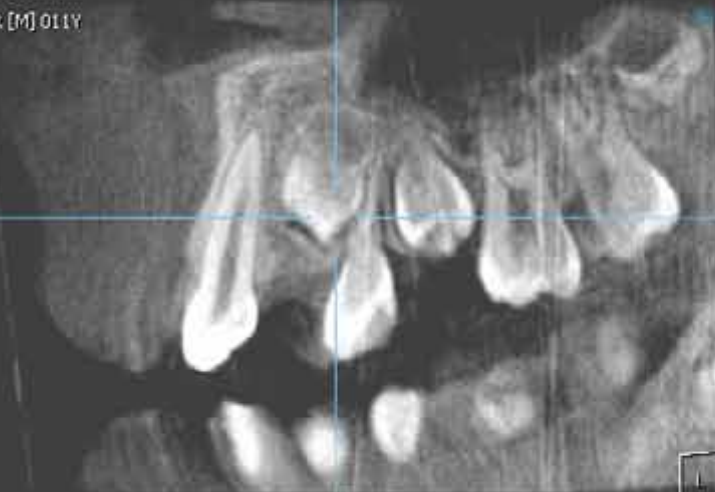


3.4 [mA]
 85 [kVp]
 CT

Sagittal

ID: 5509
 ANDRAZ^MAIER, [M] 011Y
 20101011
 Series: 1

MPH
 TH 0 (mm)

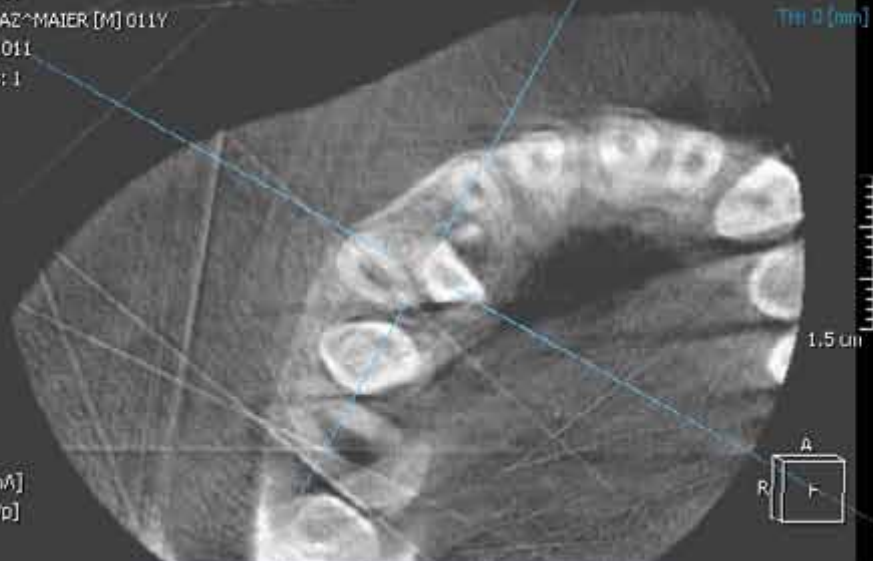


3.4 [mA]
 85 [kVp]
 CT

Axial

ID: 5509
 ANDRAZ^MAIER, [M] 011Y
 20101011
 Series: 1

MPH
 TH 0 (mm)

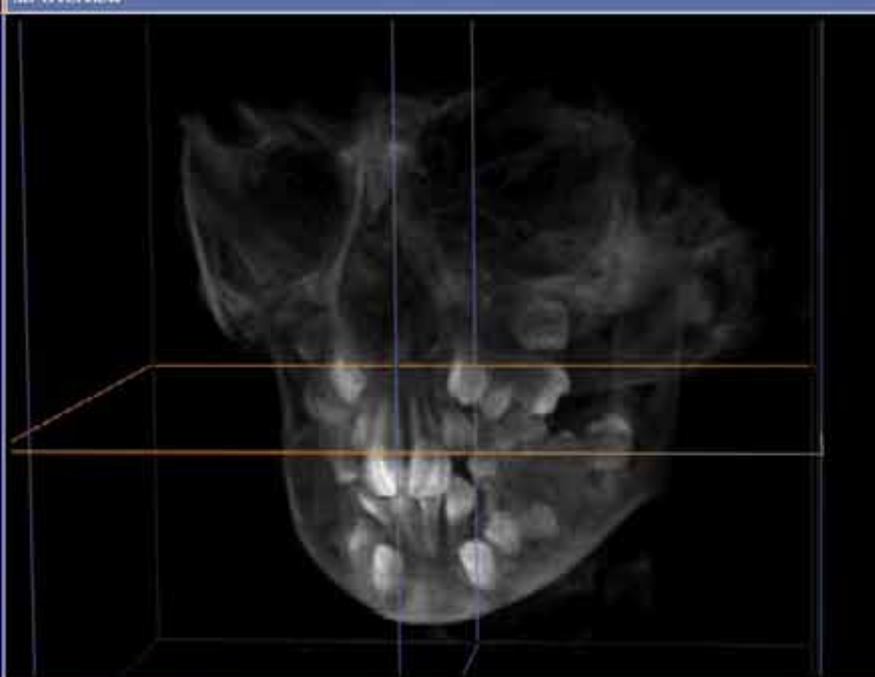


3.4 [mA]
 85 [kVp]
 CT

3D

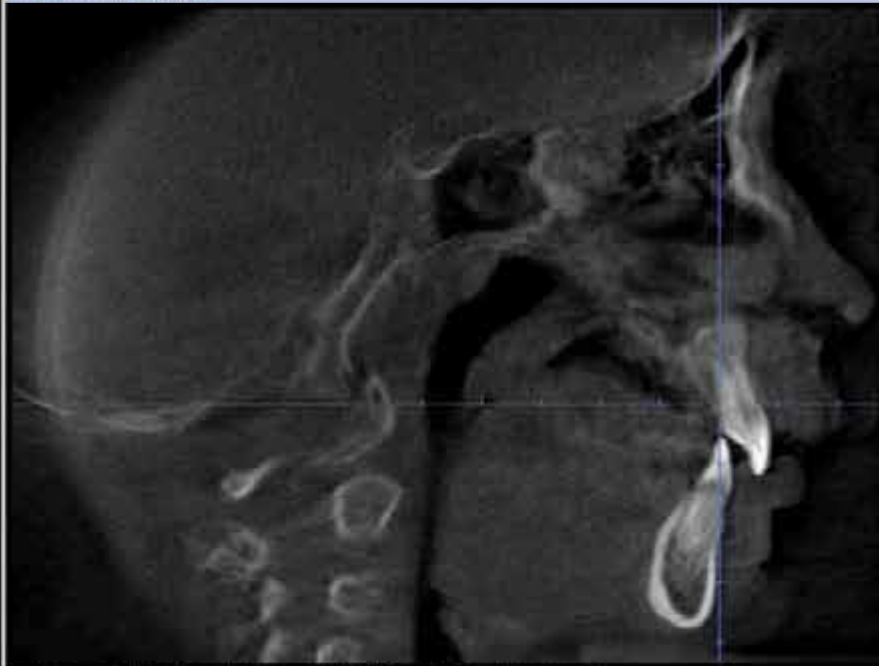
VR
 Quality Overlay





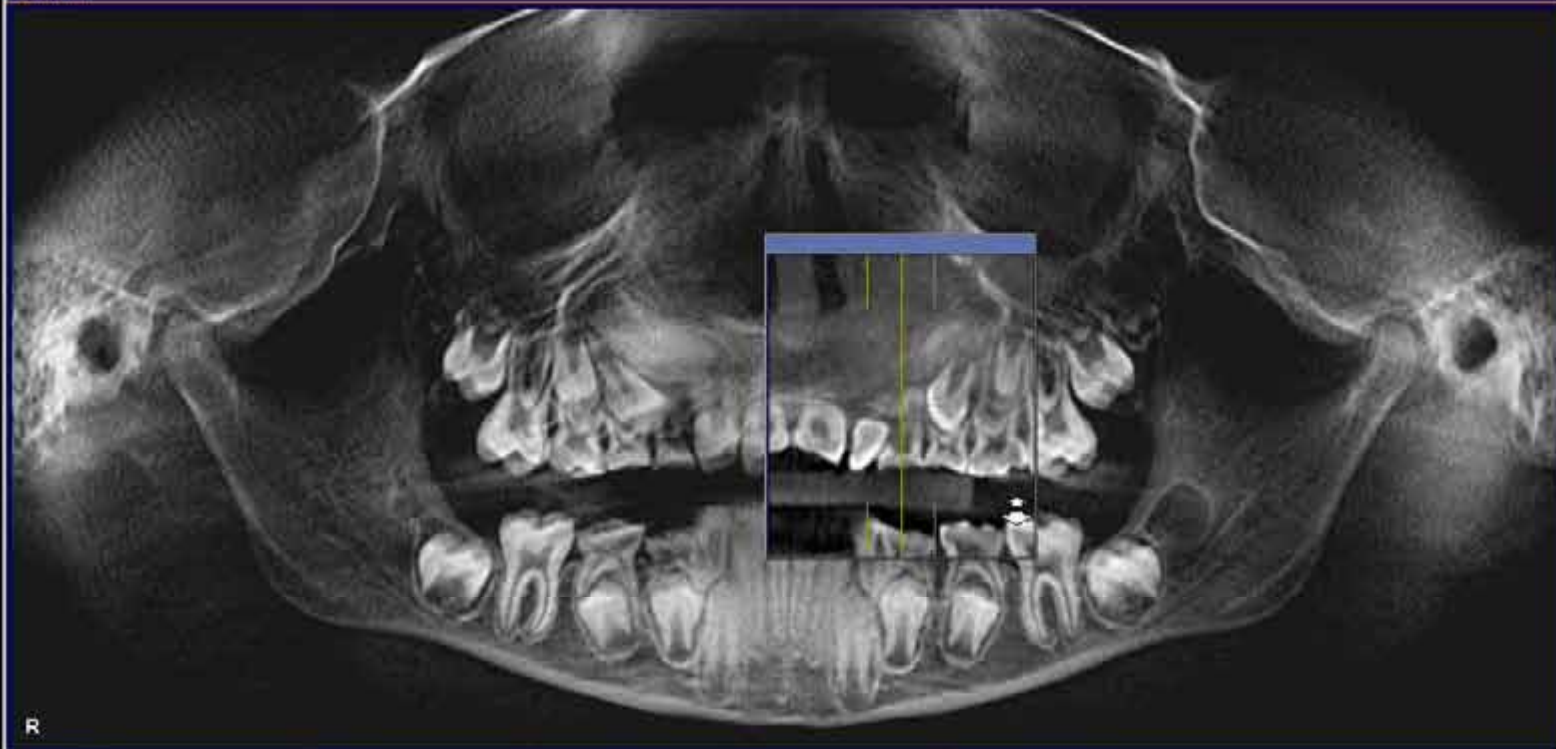
Sagittal (from the right)

Coronal (from the front)



Navigation and control panel for the radiology software. It includes icons for printing, saving, zooming, and panning. A grayscale calibration bar is visible with values 54 and 50. Below the bar, there are checkboxes for 'Nerve Canals' and 'Implants'. At the bottom, there are icons for mouse navigation (arrow, hand) and zooming (plus, minus).

Panorama



Tools

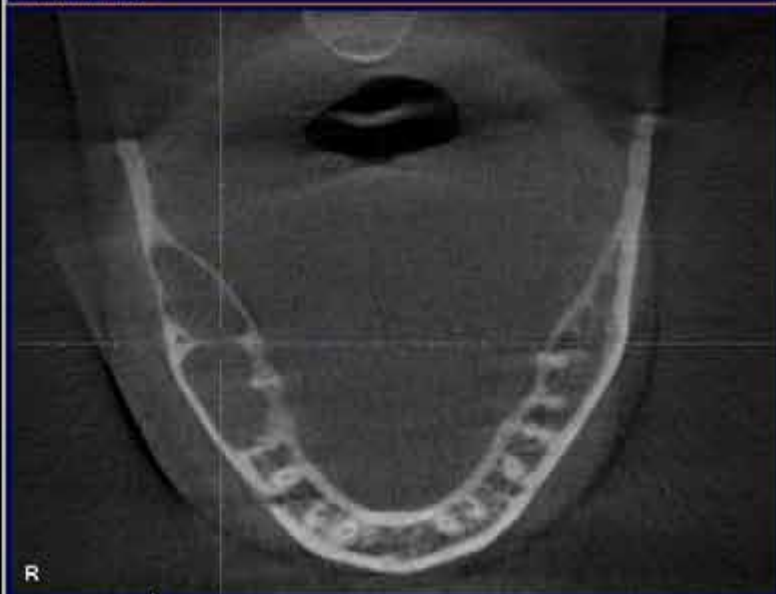
60% 0%

Tangential -5mm Cross-sectional +5mm Axial (from above)



Nerve Canal
Implants

Antal (from above)



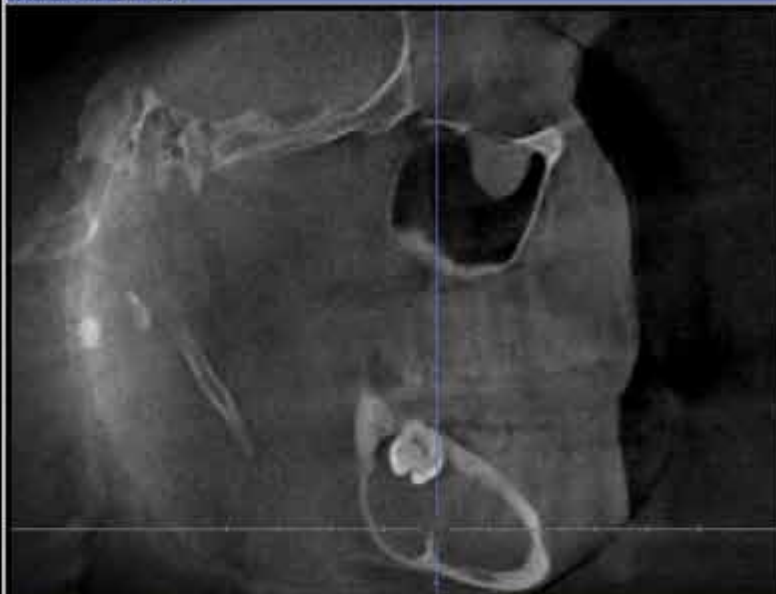
3D Overview



Tools

The Tools panel contains several icons for image manipulation, including a printer, a magnifying glass, a hand, a zoom in (+) and zoom out (-) button, a reset button, and a grayscale slider. The slider is currently set between 35% and 60%.

Sagittal (from the right)



Coronal (from the front)



Nerve Canal
Implants

The Nerve Canal and Implants toolbars contain icons for navigation and analysis, including a hand, a magnifying glass, a zoom in (+) and zoom out (-) button, a reset button, and a directional arrow.

Patologija temporomandibularnega sklepa

- Razvojne nepravilnosti tmg
- Primarno pridobljene bolezni tmg
- Sekundarno pridobljene bolezni sklepa

Panorama



Tools

Tools panel containing various icons for image manipulation and a grayscale calibration bar. The bar shows a gradient from 62% to 71%.

R

Tangential -Cross Cross-sectional +5mm Axial (from above)



Nerve Canal:
Implants

Navigation and zoom controls including a hand icon, a crosshair, and zoom in/out buttons.

Pierre Robinov sindrom

**Mikrognatija, retrognatija,
glosoptoza**

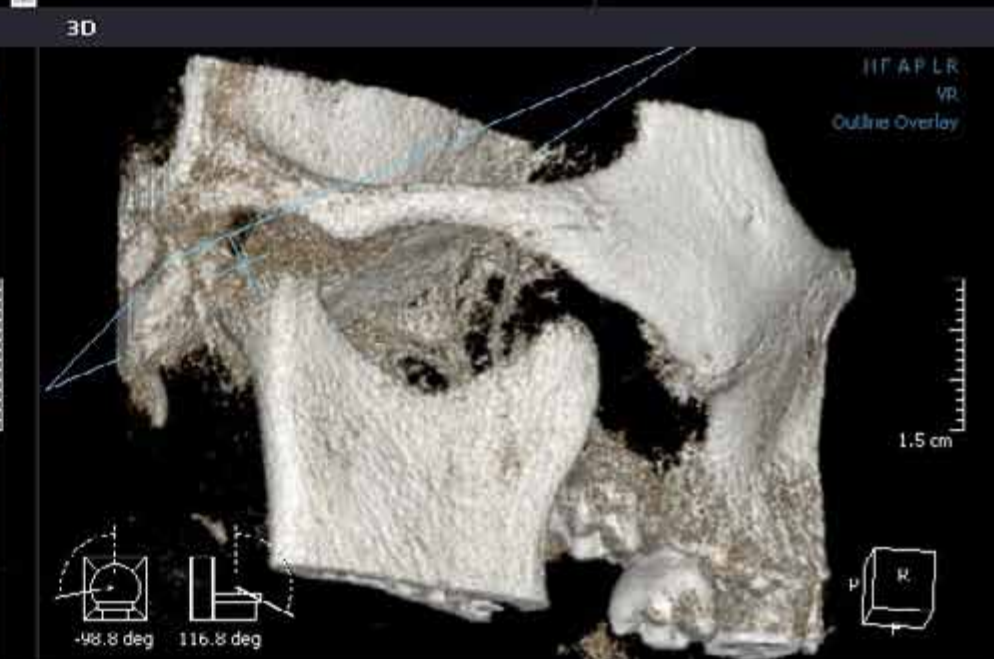
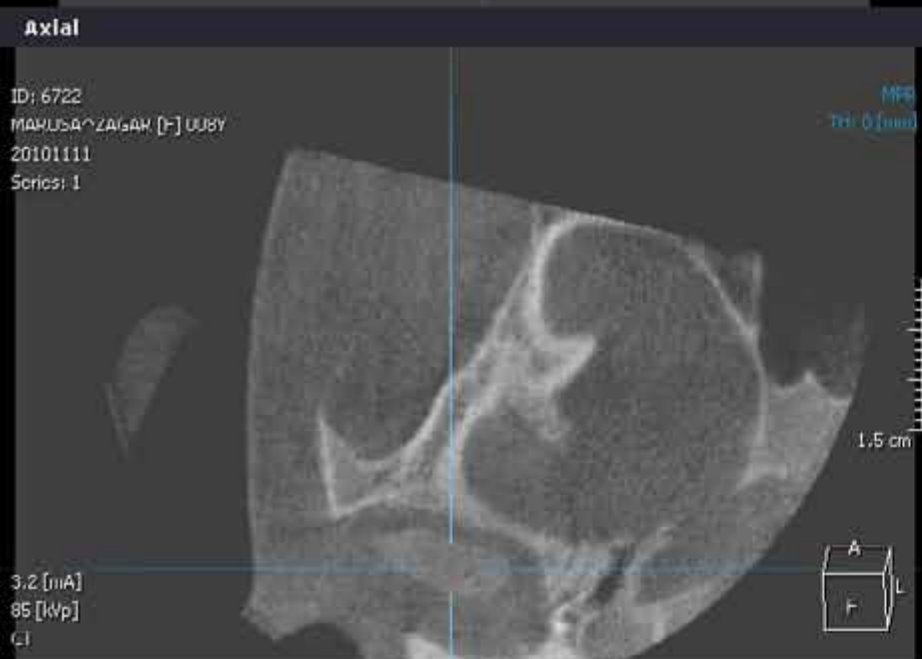
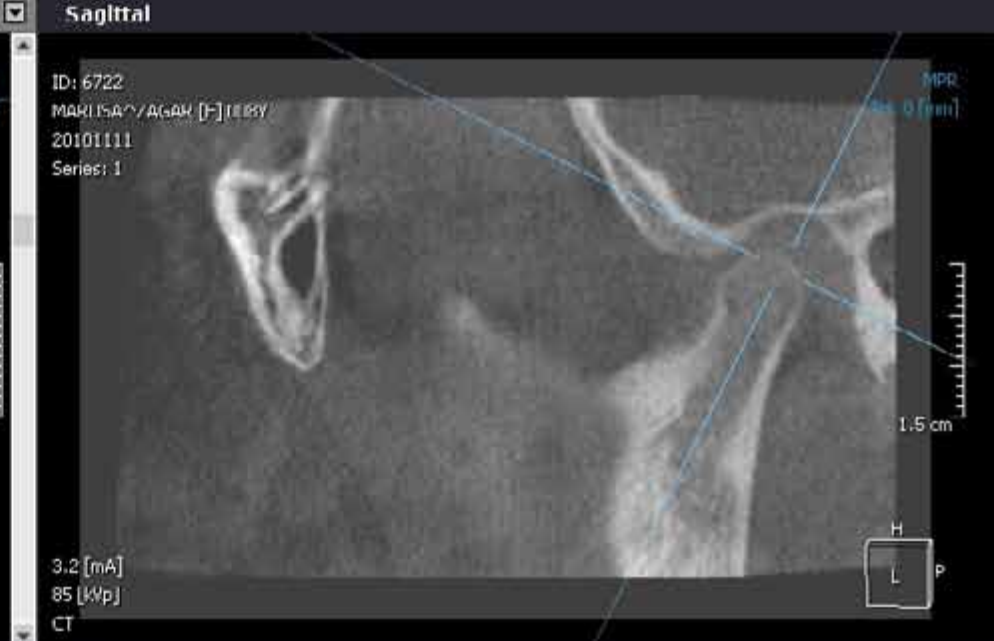
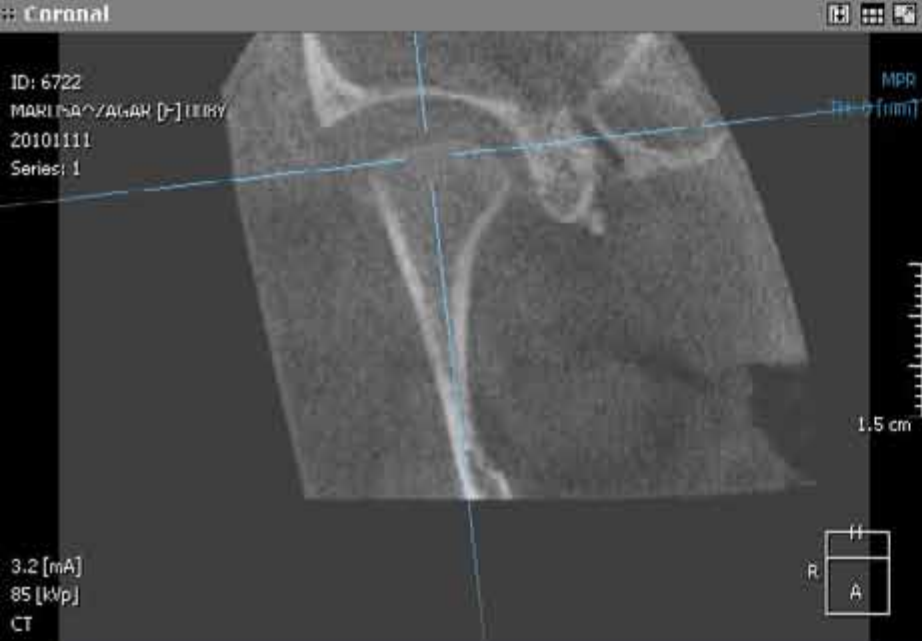


Palatoshiza



"U" shaped cleft palate

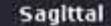
"V" shaped cleft palate



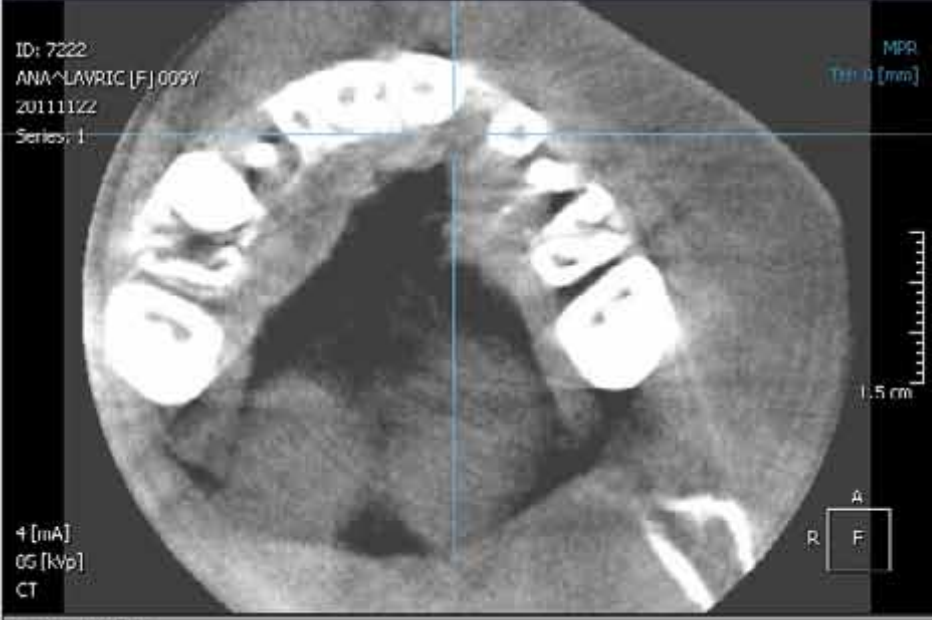
Coronal



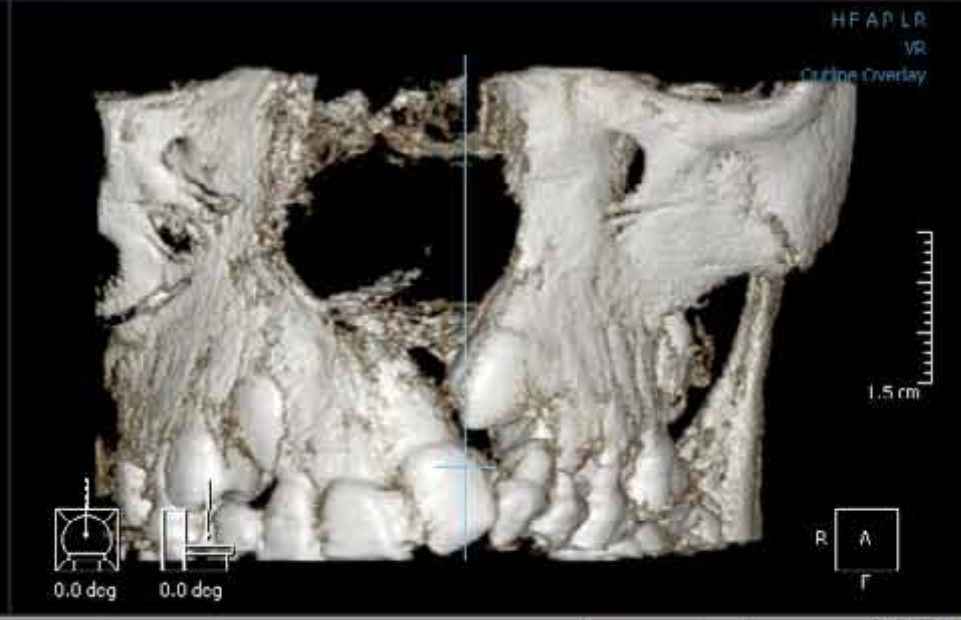
Sagittal



Axial

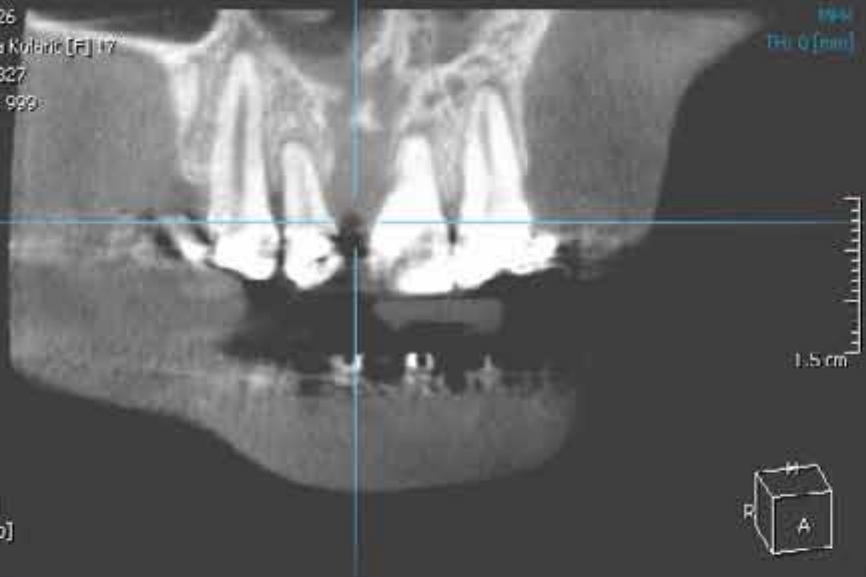


3D



Coronal

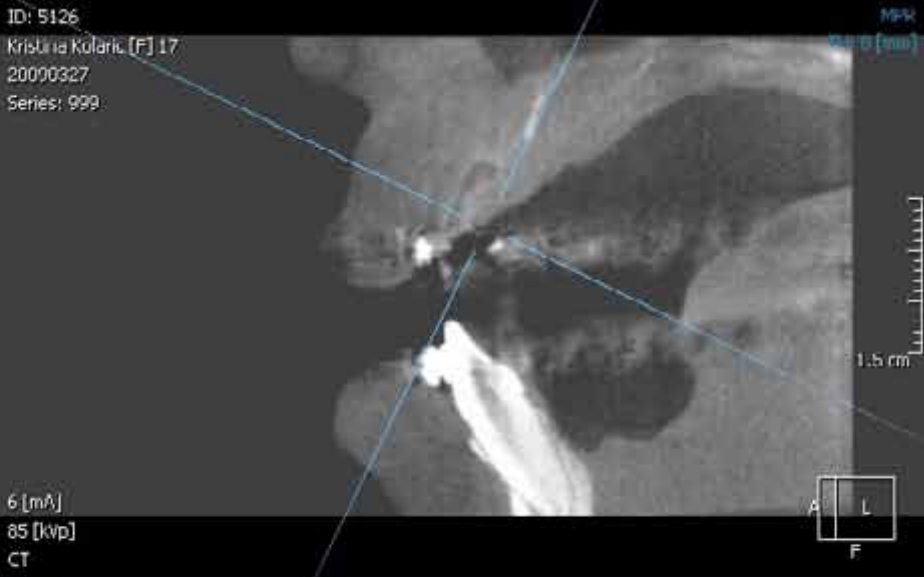
ID: 5126
Kristina Kolaric [F] 17
20090327
Series: 999



6 [mA]
85 [kvp]
CT

Sagittal

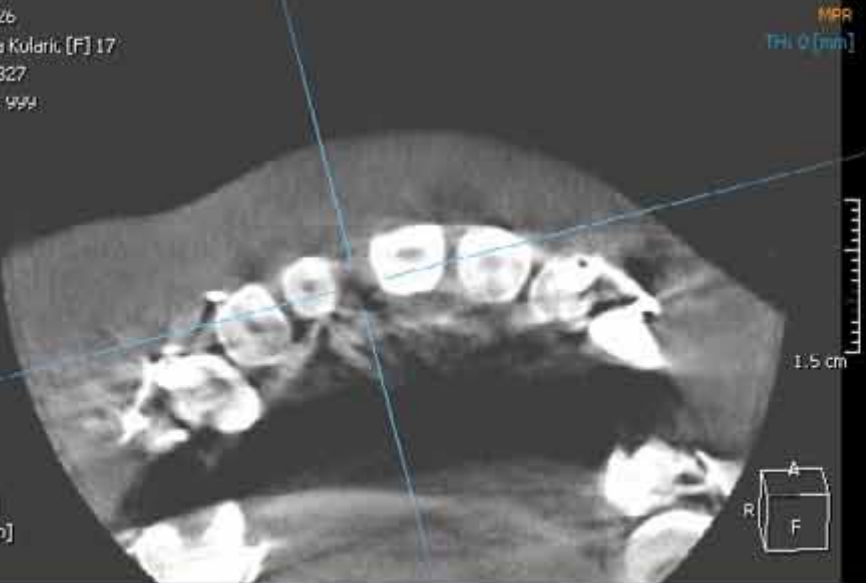
ID: 5126
Kristina Kolaric [F] 17
20090327
Series: 999



6 [mA]
85 [kvp]
CT

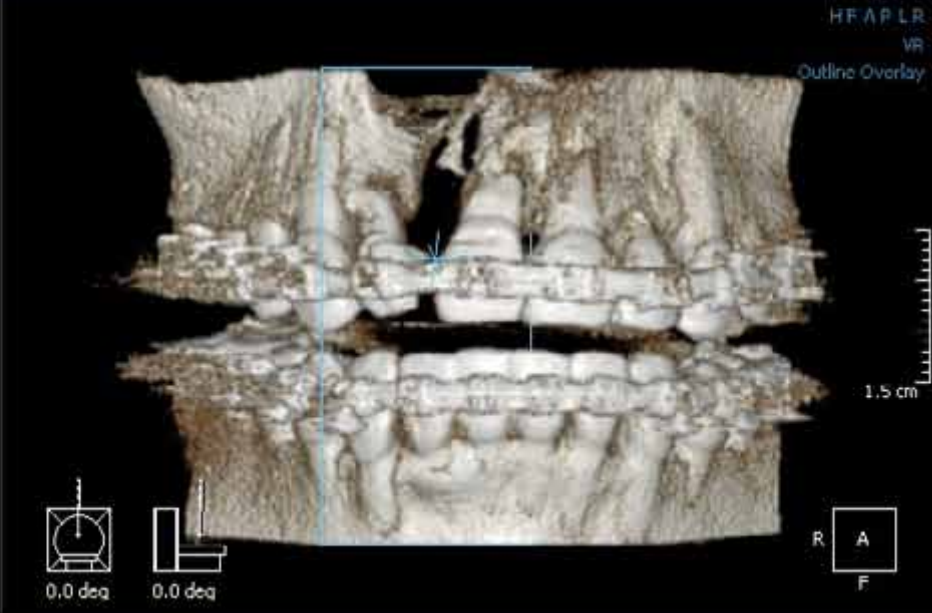
Axial

ID: 5126
Kristina Kolaric [F] 17
20090327
Series: 999



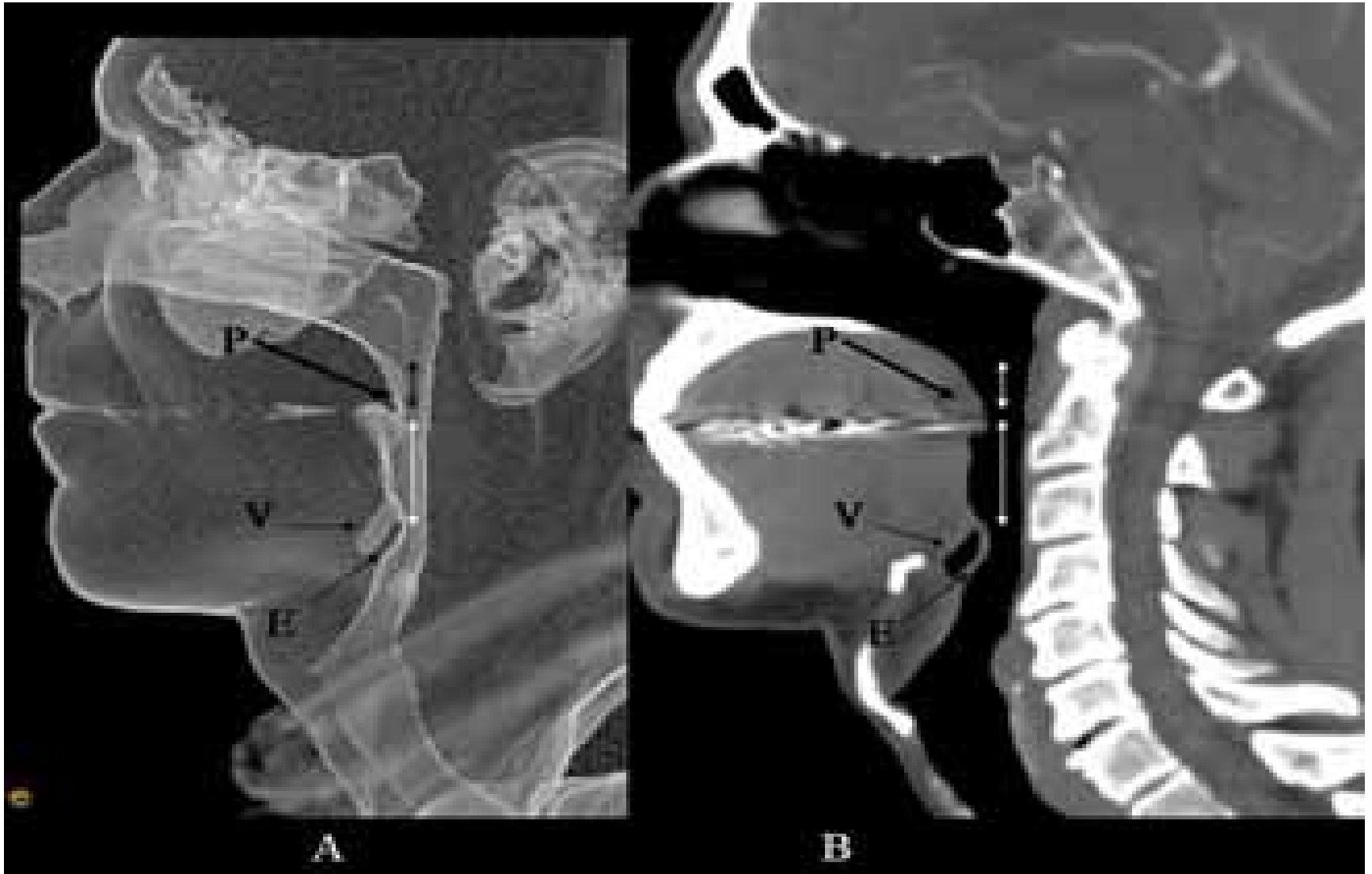
6 [mA]
85 [kvp]
CT

3D



0.0 deg
0.0 deg

P= palatum
V=vallecula
E=epiglottis



Obstrukcija nosa

- Povečanje nosnih školjk
- Deviacija nosnega septuma
- Pneumatizirana srednja školka
- Polipi
- Neoplastične spremembe
- Povečano adenoidno tkivo

Volume Rendering: 11/10/2008

0.000 0.000000

0.000 0.000000

Air in mouth

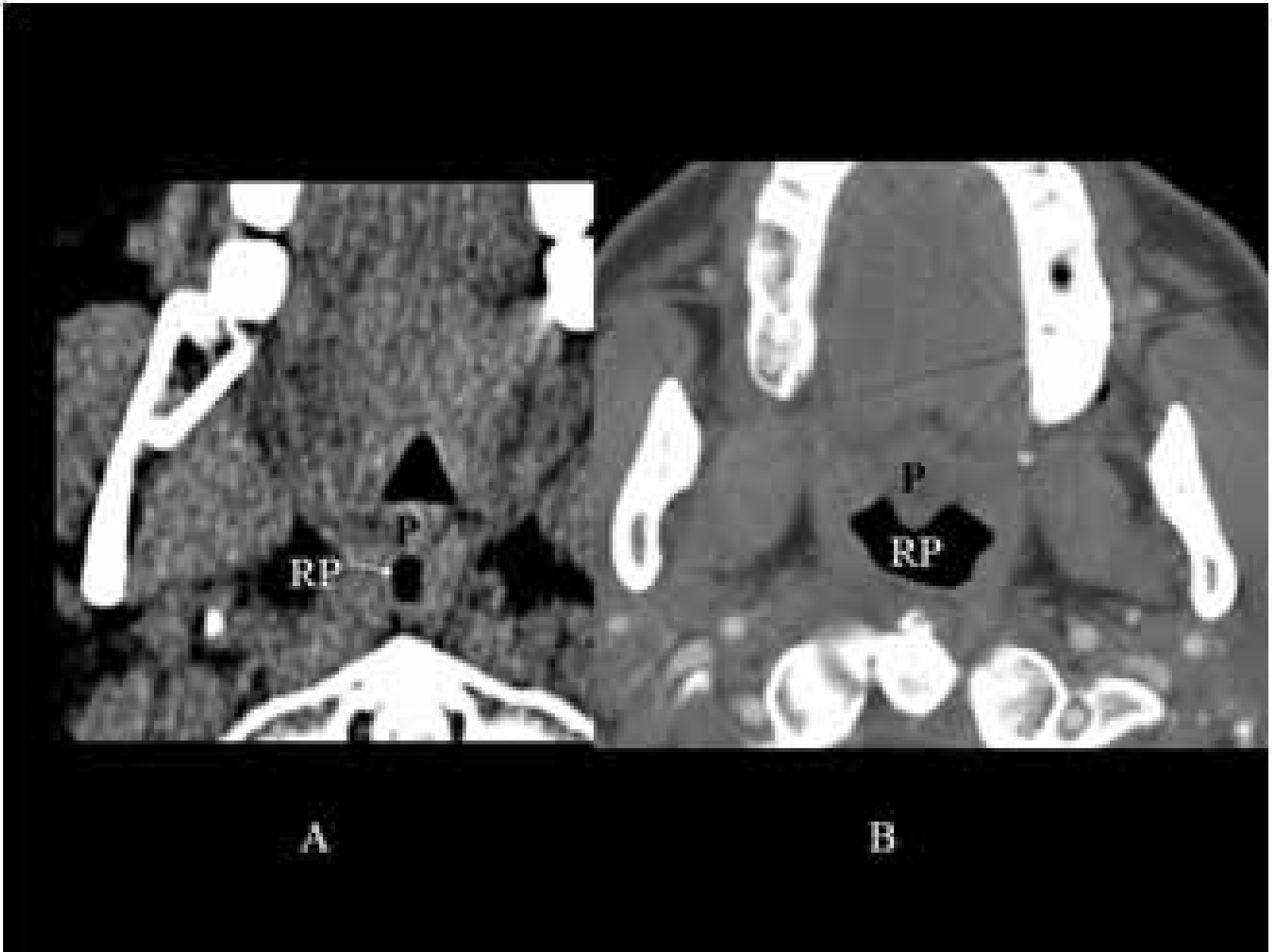
Ray Structure
No VOI
kV 120
mA 100
Rot 2 00:00:00 0:00:00
2:00 15:00:00
1:00 0:00
0:00 0:00
0:00 0:00

172



Retropalatinalna obstrukcija

- Odebeljeno mehko nebo
- Poveča in odebeljena uvala



Zožen 30mm₂

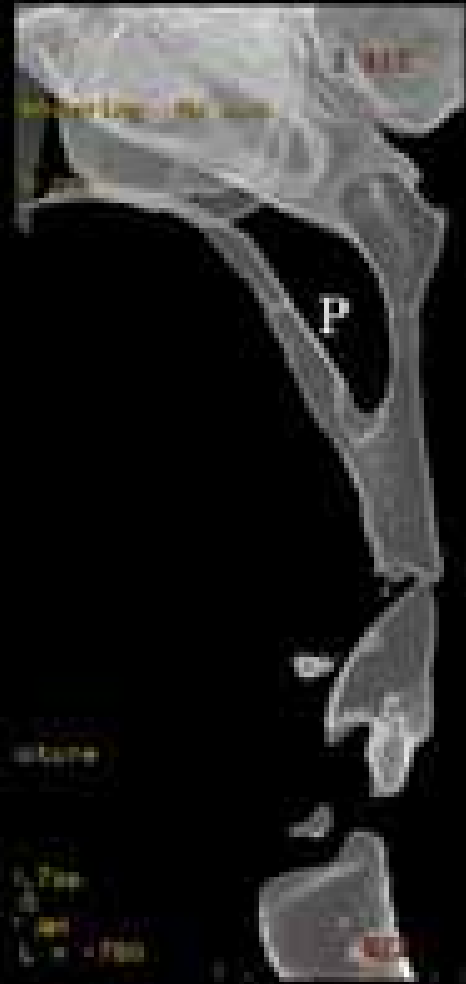
Normalen 100mm₂

Retroglosalne obstrukcije

- Zaradi debelosti
- Povečana velikost jezika
- Posteriorno pomaknjen jezik
- Večje ostale mišice v tem predelu



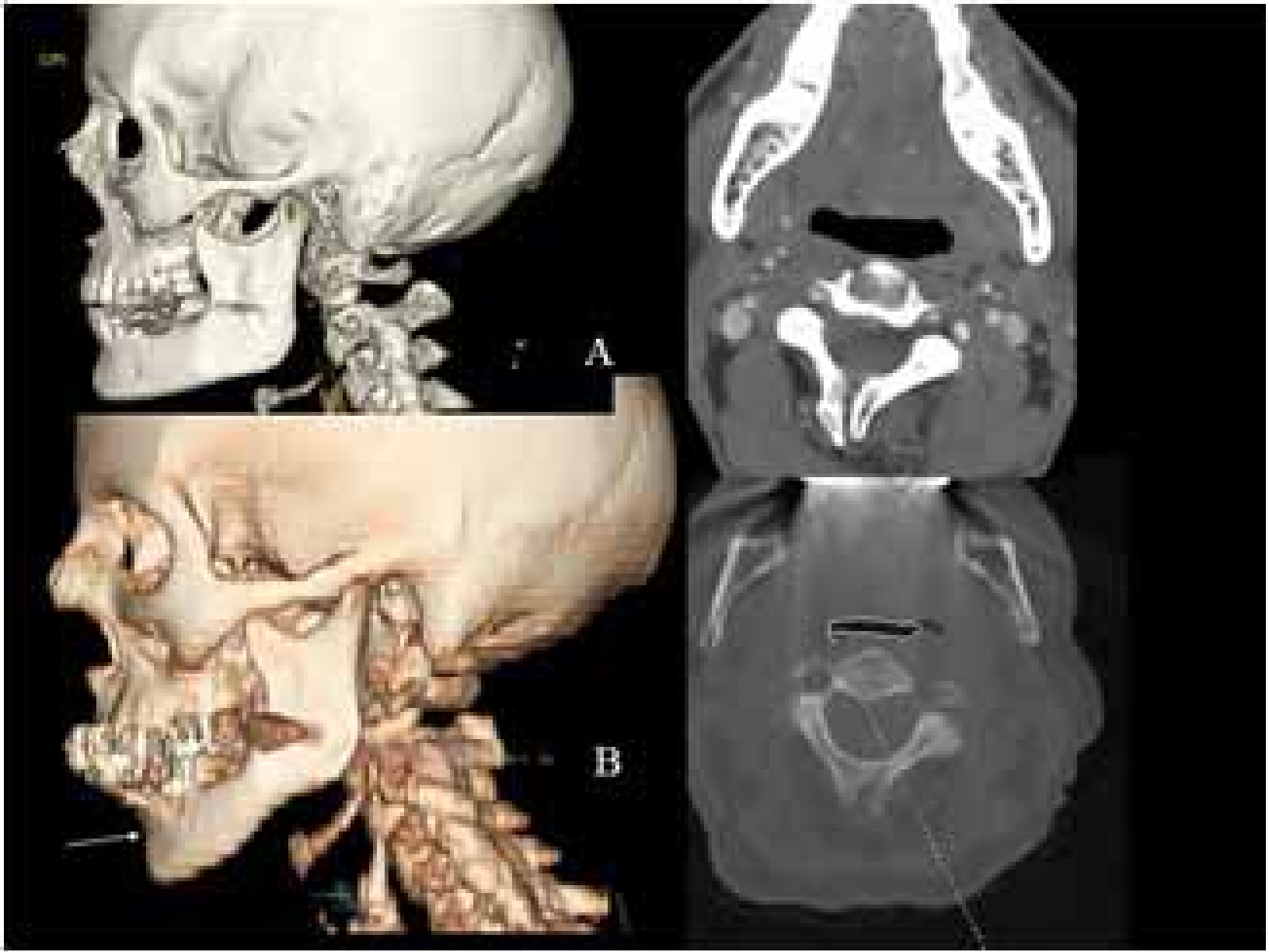
A



B

Obrazne in dentalne nepravilnosti

- Mandibular retrognatija
- Mandibular hipoplasia
- Maxlarna retrognatija
- Maxlarna hipoplasia
- Bruksizem in clenching





A



B



Tongue

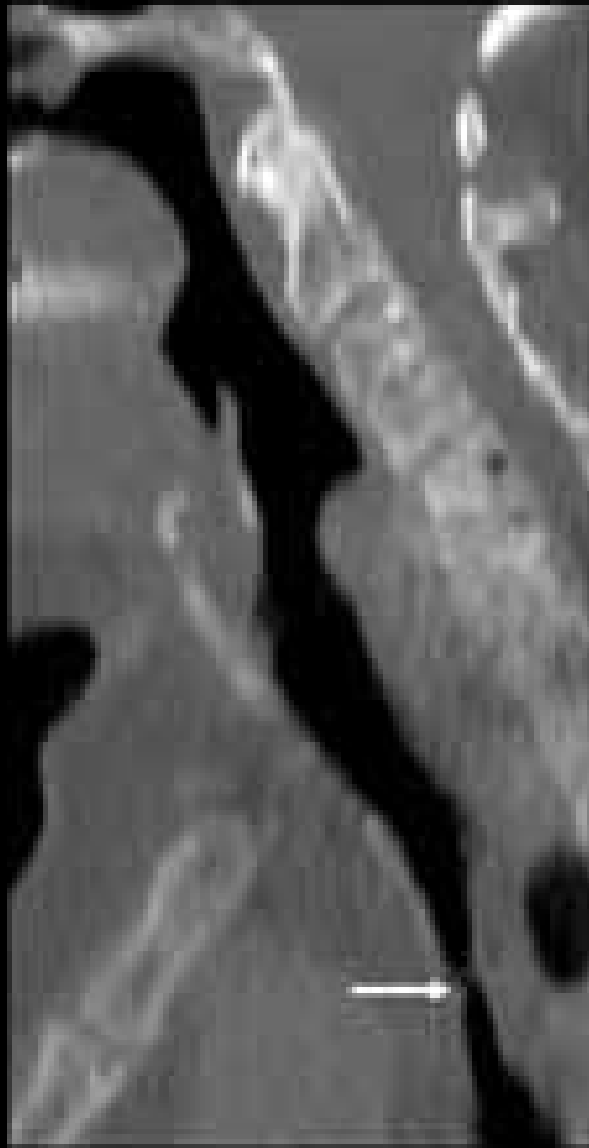
C

anatomy



Stenoza traheje

- Prirojena
- Po traheostomiji
- Po intubaciji



A



B



C

ZDRAVLJENJE

1. Konzervativni ukrepi
2. Zdravila
3. Ventilacija s pozitivnim tlakom
4. Kirurgija

ZDRAVLJENJE

1. KONZERVATIVNI UKREPI:

Vzdrževanje pravilnega bioritma spanja,
pravilen položaj med spanjem, vzglavje rahlo
dvignjeno

Intraoralne opornice

Otodontsko zdravljenje



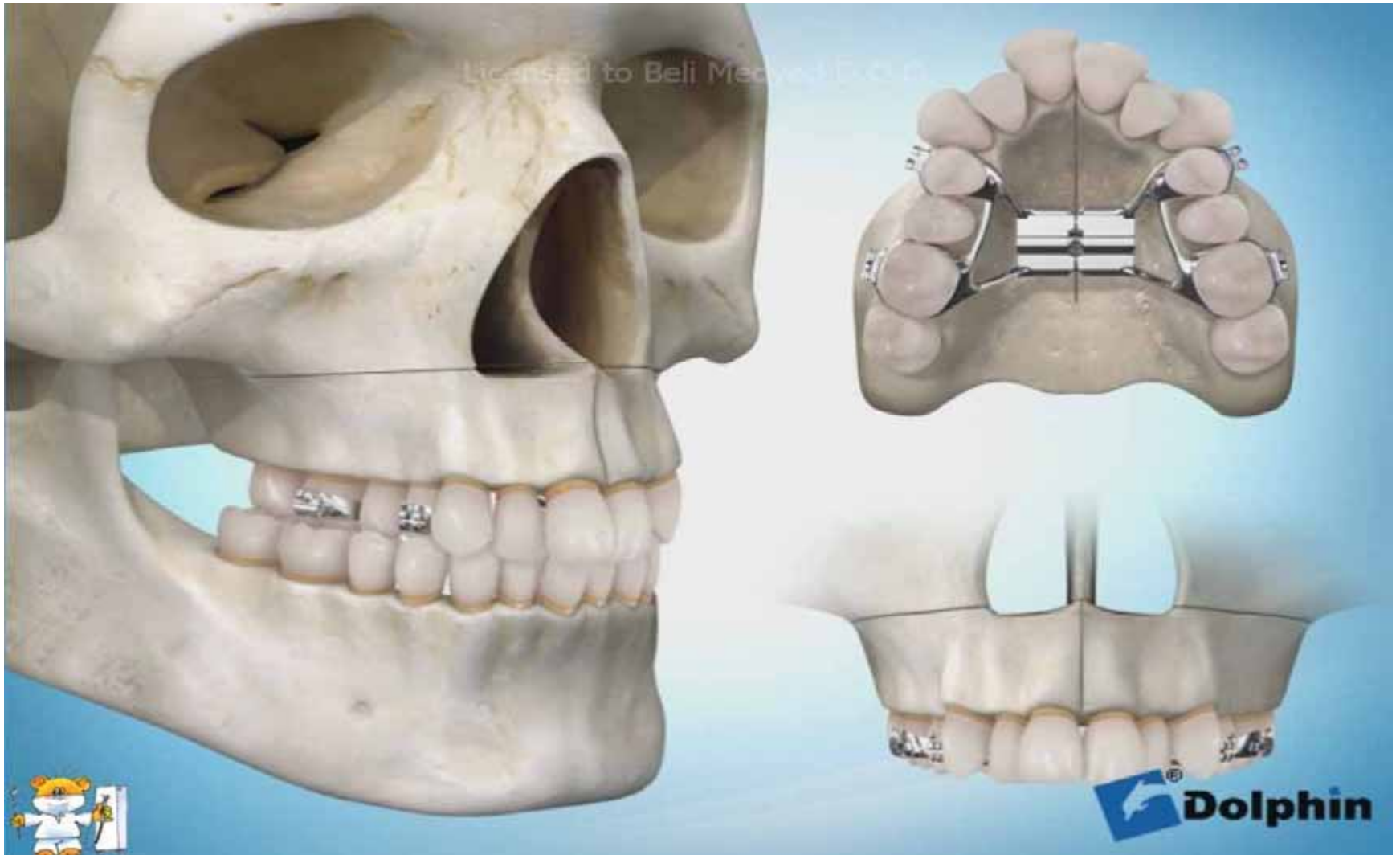
www.dolphinimaging.com

 **Dolphin**

Intraoralne opornice



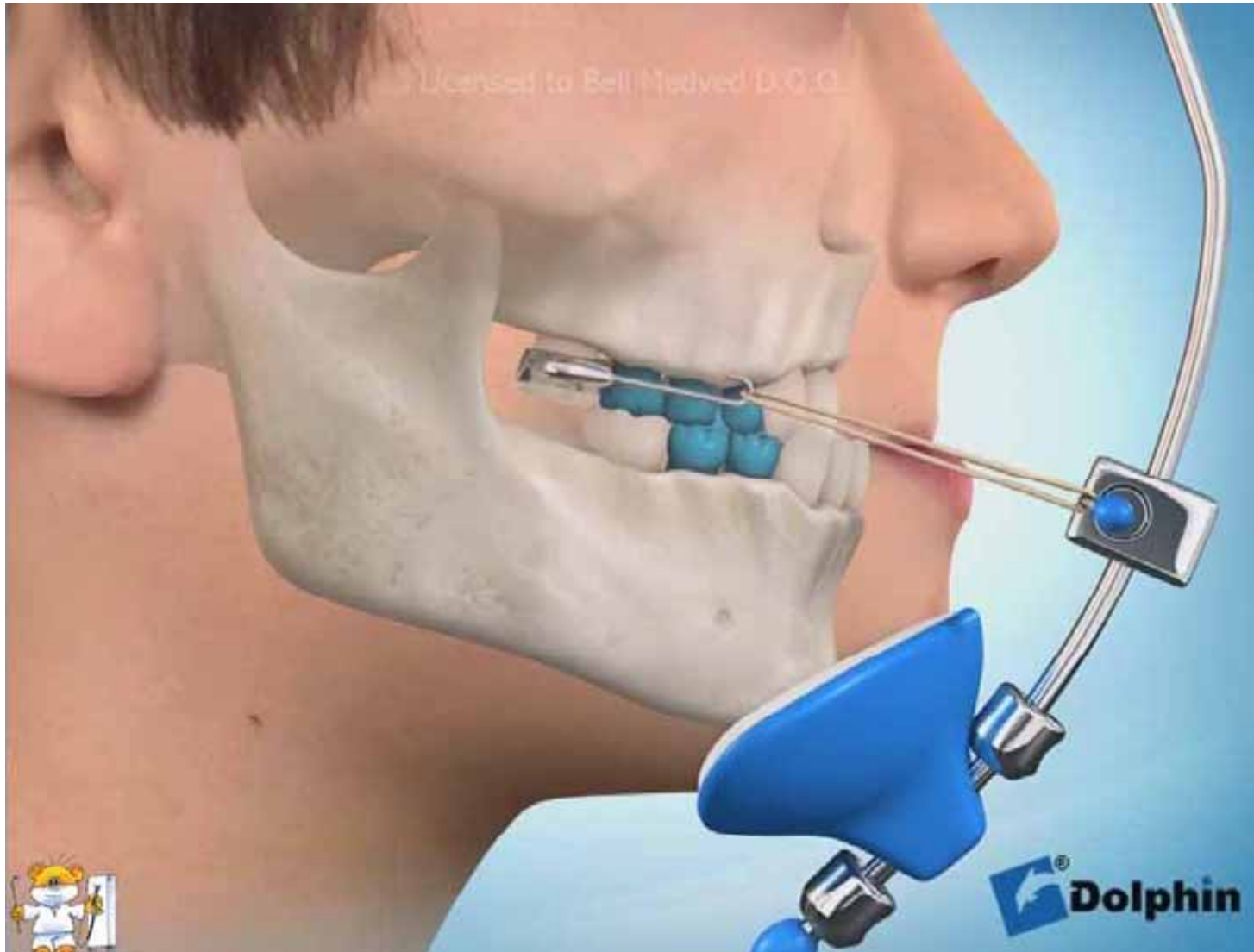
Ortodontsko zdravljenje



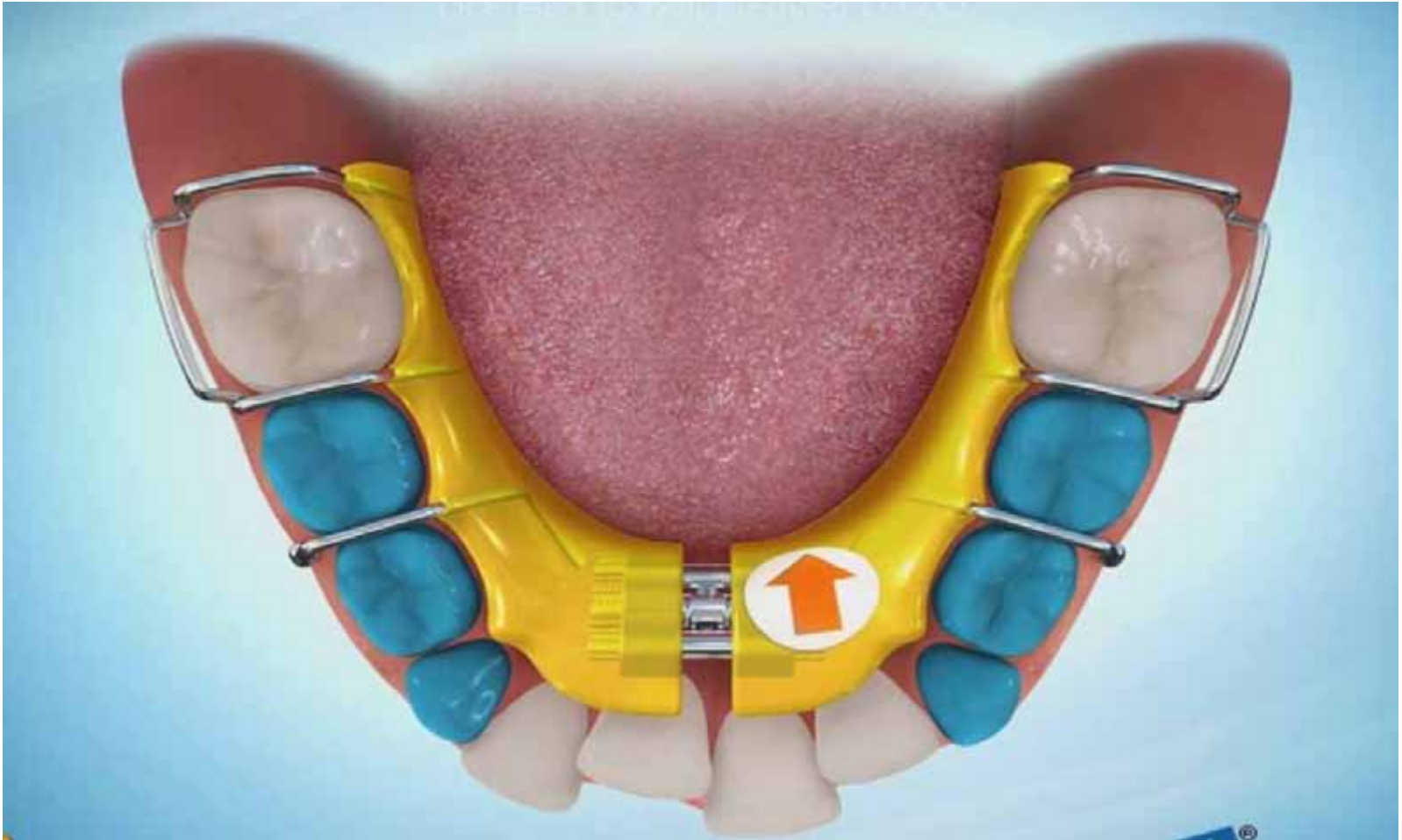
Ortodontsko zdravljenje



Ortodontsko zdravljenje



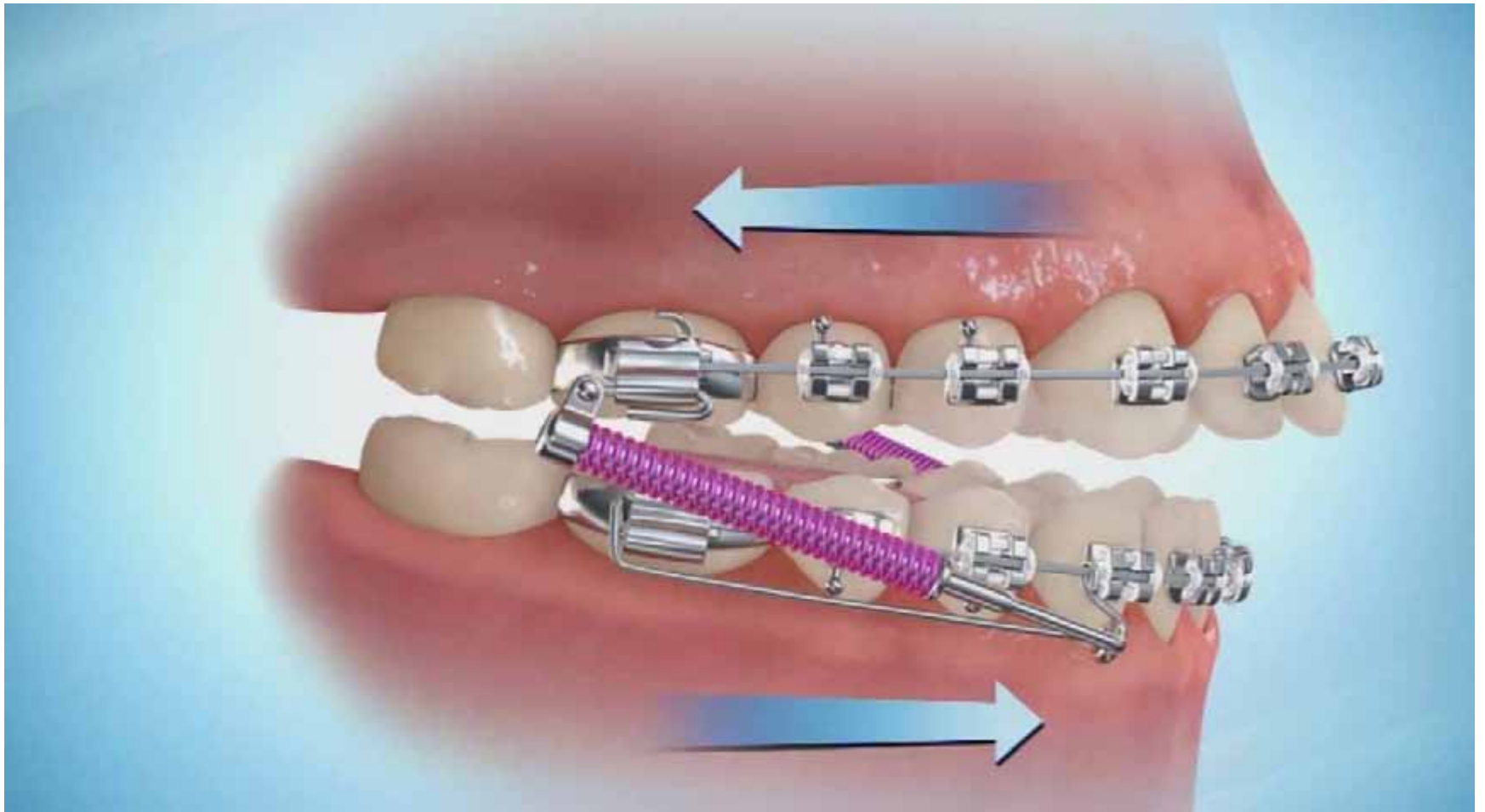
Ortodontsko zdravljenje



Ortodontsko zdravljenje



Ortodontsko zdravljenje



ZDRAVLJENJE

2. ZDRAVILA

- Pri otrocih omejena uporaba
- Dekongestivi in antihistaminiki (alergijski rinitis)
- Topikalni kortikosteroidi ???

ZDRAVLJENJE

3. VENTILACIJA S POZITIVNIM TLAKOM

- CPAP (Continuous Positive Airway Pressure): aparat vzdržuje ves čas respiratornega cikla pritisk v dihalnih poteh nad atmosferskim tlakom.

- BiPAP (BiPhasic Positive Airway Pressure): aparat doda pritisk med inspirijem, ekspirij pa poteče med atmosferskim tlakom ali pre nastavljenim pozitivnim tlakom – več možnosti nastavitvev.

ZDRAVLJENJE

4. KIRURGIJA

Tonzilektomija in adenoidektomija

Uvulofaringopalatoplastika

Epiglotektomija - parcialna

Mandibular advancement

Midface advancement

Traheotomija

- **Distrakcija**

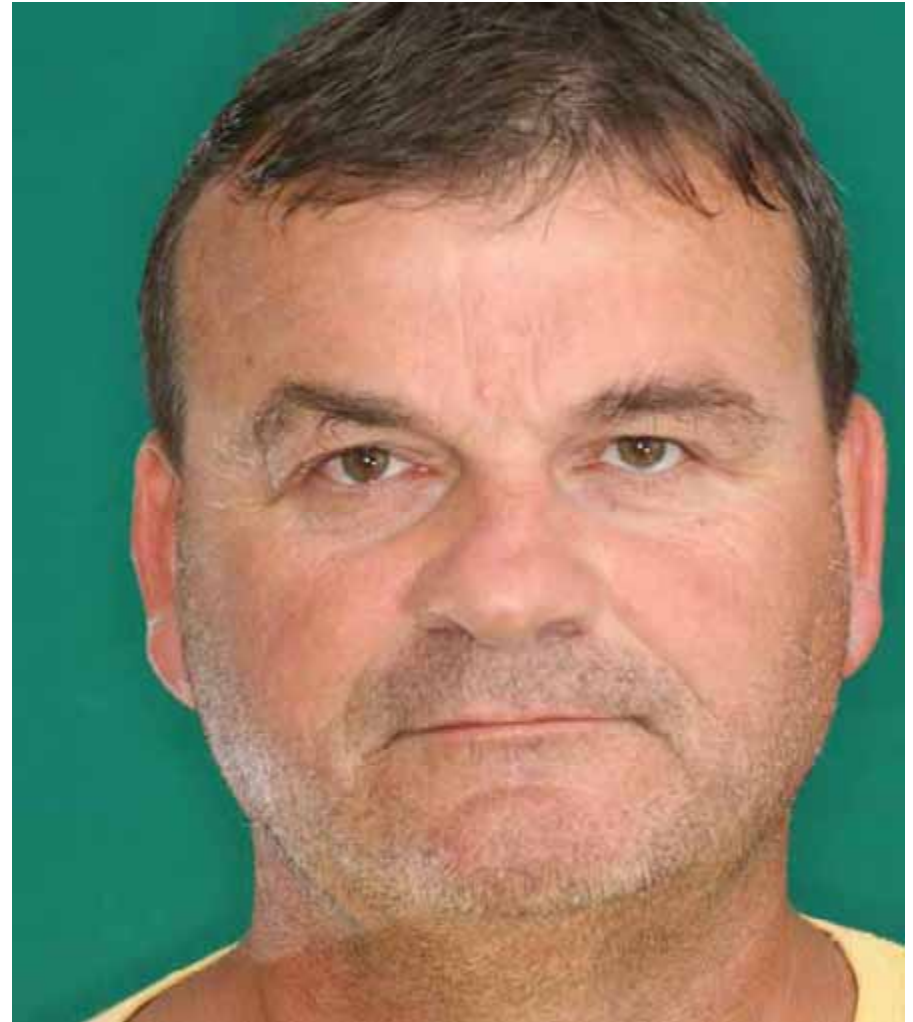
1. Preoperativno načrtovanje
2. Operativni poseg in namestitvev distraktorja (intra/ekstraoralni)
3. Latentno obdobje (5-7 dni; majhni otroci imajo pospešen metabolizem kosti: 24-48 ur)
4. Aktivacija distrakcije (0,5-1 mm/dan)
5. Faza konsolidacije (8-12 tednov)
6. Retencijska faza (okluzalne opornice, elastične obrazne maske)



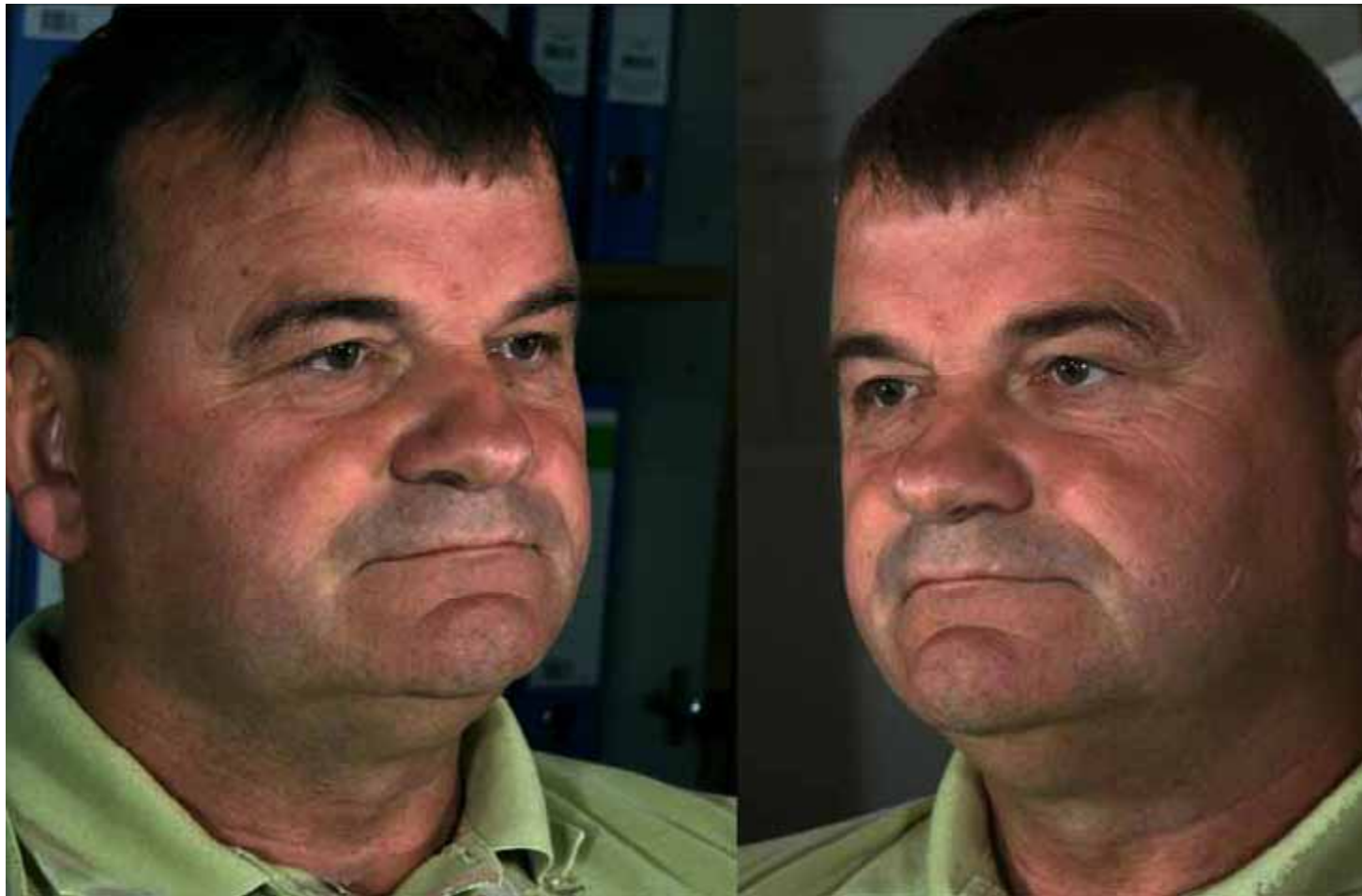
www.dolphinmedical.com



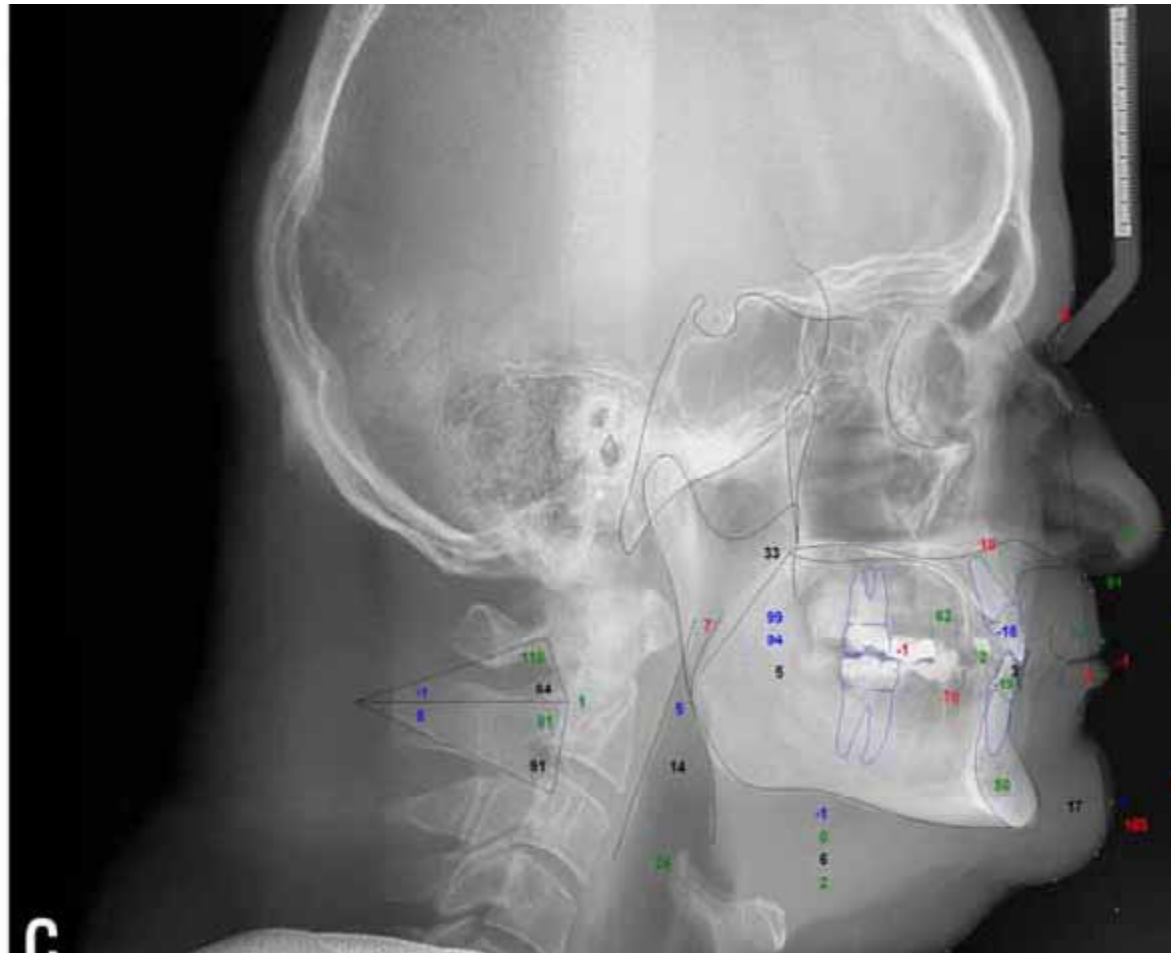
Predstavitev pacienta



Predstavitev pacienta



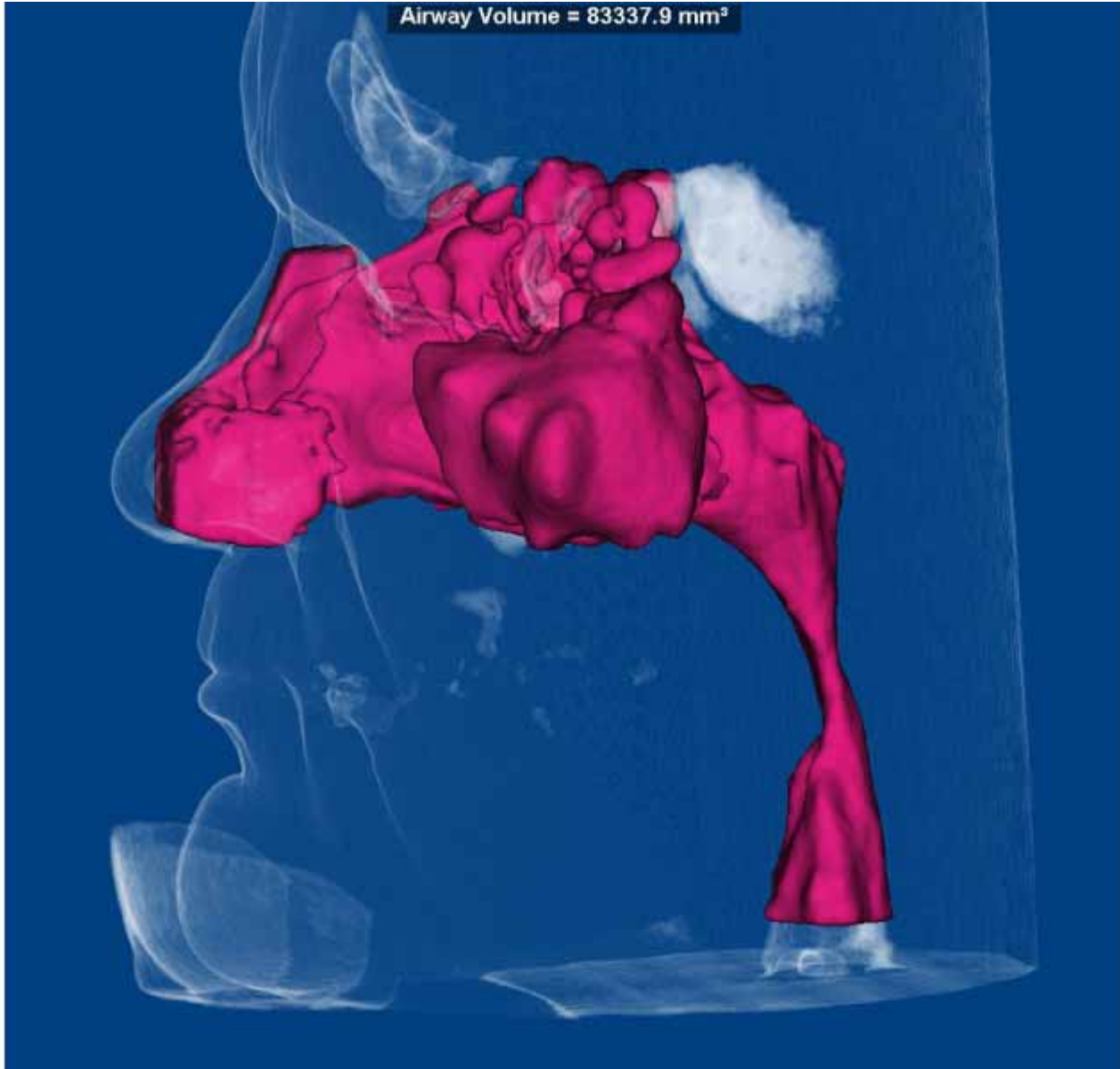
8. AIRWAY		(L small, R large)			
soft palate length (PNS to uvula tip) (mm)	33.0	36.6	5.7	-0.6	
nasopharynx airway at A point level (mm)	6.9	17.6	2.6	-4.1	****
oral pharyngeal airway space at Mx1 level (mm)		5.3	12.0	3.2	-2.3
hypopharynx airway space at B point level (mm)		16.5	13.9	3.5	0.8
deep pharynx airway at Pog level (mm)	25.2	16.0	4.4	2.1	**

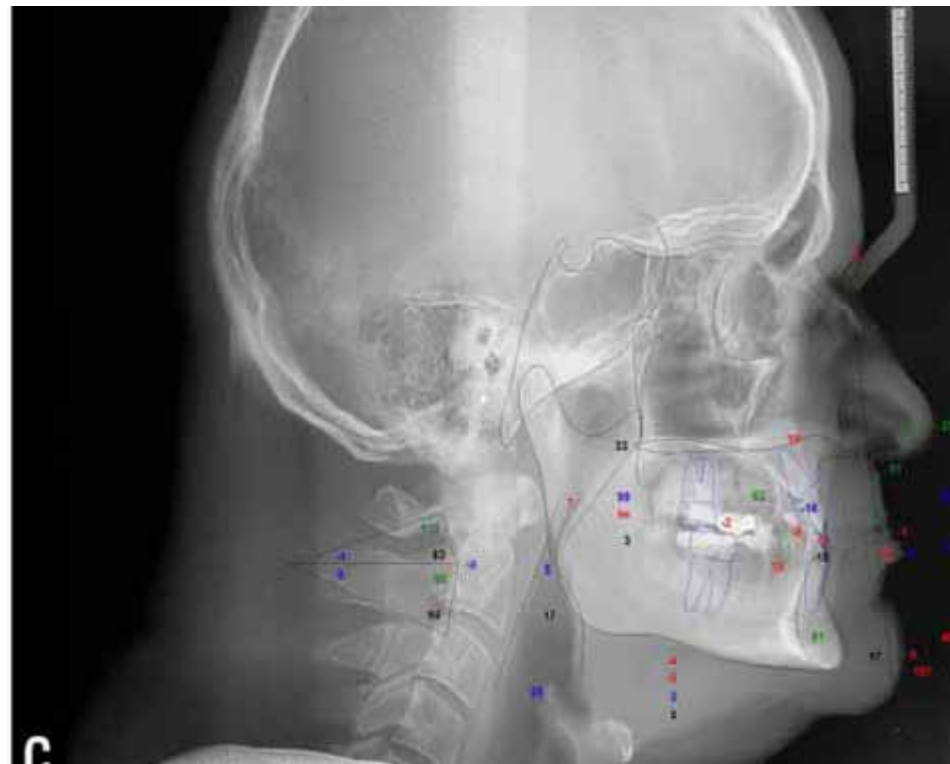
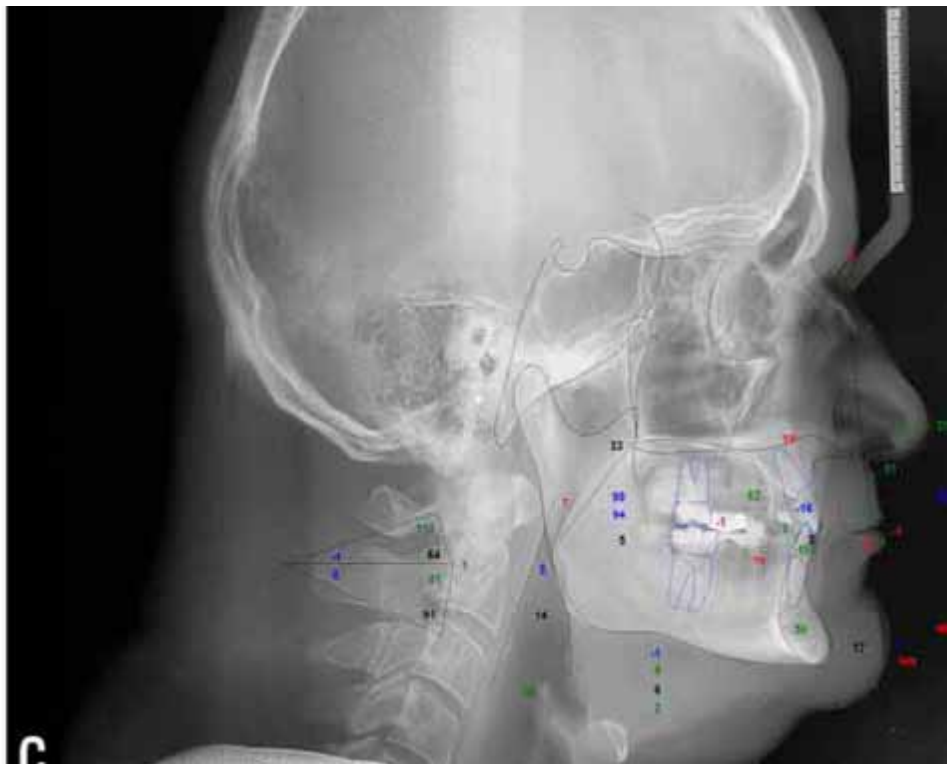


Airway Volume = 12039.2 mm³
Minimum Axial Area = 32.6 mm²

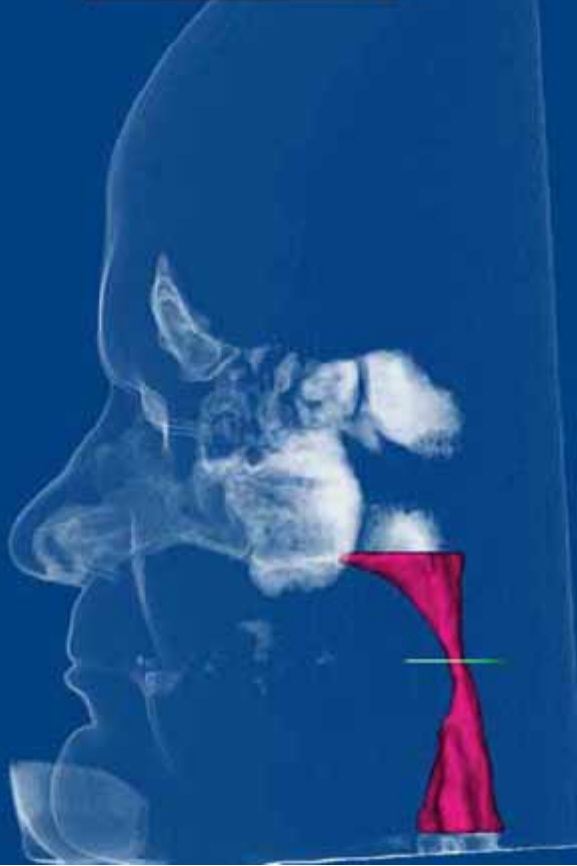


Airway Volume = 83337.9 mm³

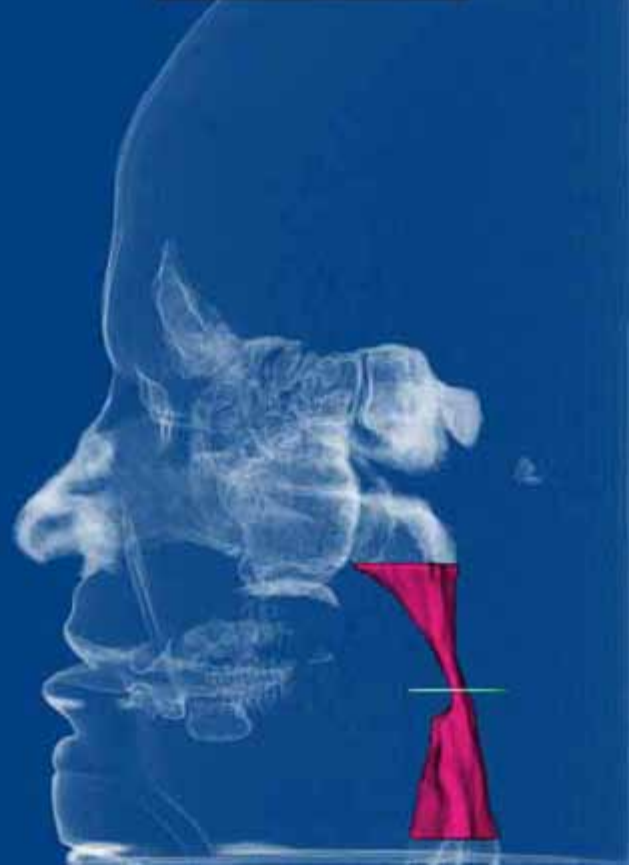




Airway Volume = 12039.2 mm³
Minimum Axial Area = 32.6 mm²

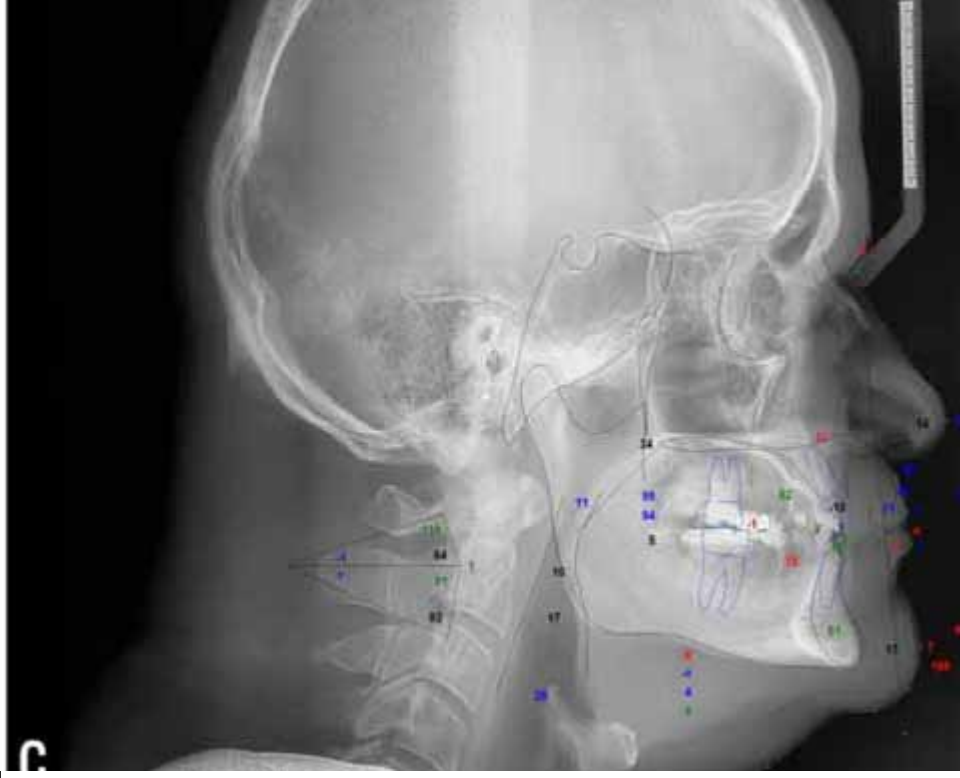
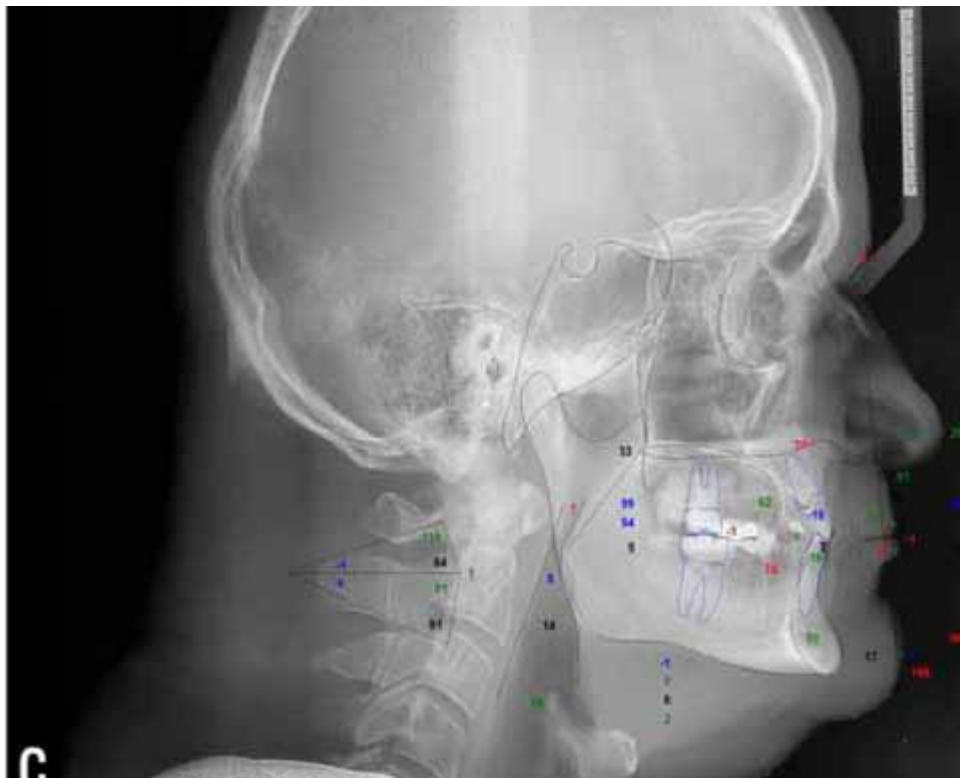


Airway Volume = 11241.3 mm³
Minimum Axial Area = 27.8 mm²





Uroš Mezeg dr. dent. med







Post-Op



Post-Op (Soft Issue)

