AUTONOME PROVINZ BOZEN – SÜDTIROL
PROVINCIA AUTONOMA DI BOLZANO – ALTO ADIGE
PROVINZIA AUTONOMA DE BULSAN – SUDTIROL

Südtiroler Sanitätsbetrieb
Azienda Sanitaria dell'Alto Adige
Azienda Sanitera de Sudtirol

GESUNDHEITSBEZIRK BOZEN
Krankenhausbereich
Betrieblicher Dienst für Strahlentherapie

COMPRENSORIO SANITARIO DI BOLZANO
Area Ospedaliera
Servizio Aziendale di Radioterapia

Prova pratica: irradiazione craniospinale

a) descriva il processo di pianificazione dalla TAC alla prima seduta

b) nomini gli organi a rischio e le corrispondenti dosi tollerate (TD 5/5) in trattamento radiante, nonché i possibili effetti tardivi sulla base della pubblicazione di Emami nel Red Journal 1995 e secondo i recenti dati QUANTEC.

c) diussione e interpretazione del piano

d) conosce techniche alternative

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Clinica Universitaria Radiooncologica di Innsbruck
Casa di Cura Bonvicini

1.

CRANIO SPINALE

Südtiroler Sanitätsbetrieb | Azienda Sanitaria dell'Alto Adige
Azienda Sanitera de Sudtirol

Patient name	[redacted]	Report creation time	31 May 2018, 14:14:35 (hr:min:sec)
Patient ID	27766	Plan last save time	20 Feb 2018, 18:26:24 (hr:min:sec)
Treatment plan name	CSI	Plan approved by	RAYSTATION\raybz
Plan approved	Yes	Plan approval time	20 Feb 2018, 18:26:24 (hr:min:sec)

Plan Report

Patient data

Patient ID	27766
Patient name	[redacted]
Patient gender	Male
Patient birth date	03 Mar 1989
Case data	
Case name	CASE 1
Physician	-
Body site	-

Treatment plan data

Treatment plan name	CSI
Plan last save time	20 Feb 2018, 18:26:24 (hr:min:sec)
Planned by	
Number of beam sets	2
Patient treatment position	HFS : Head First Supine
Treatment plan approval data	
Approved	Yes
Approved by	RAYSTATION\raybz
Approval time	20 Feb 2018, 18:26:24 (hr:min:sec)
Plan comment	
Planning image set	
Name	CT 2
Modality	CT
Imaging system	AquilionLB 29 Jan 2014, 14:04:29 (hr:min:sec)
Patient scanning position	HFS
Series date and time	19 Feb 2018, 12:57:11 (hr:min:sec)
Acquisition date and time	19 Feb 2018, 12:57:37 (hr:min:sec)
External ROI	External

General data

Treatment planning system	RayStation 7 (7.0.0.19)
Report creation time	31 May 2018, 14:14:35 (hr:min:sec)
Time zone info	UTC+02:00 (using daylight saving time)
Template name	Report BZ_Ver12_7
Patient coordinate system	IEC 61217

Signatures

Signature 1 (Name/Signature/Date)

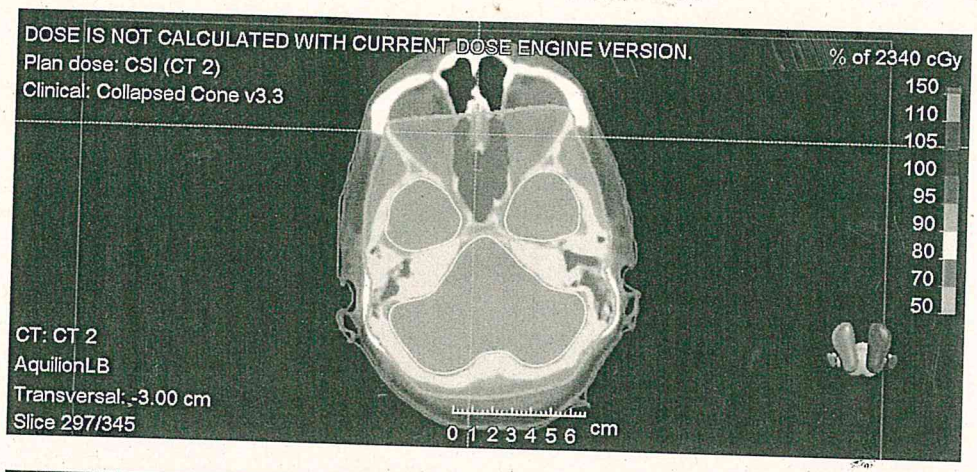
Signature 2 (Name/Signature/Date)

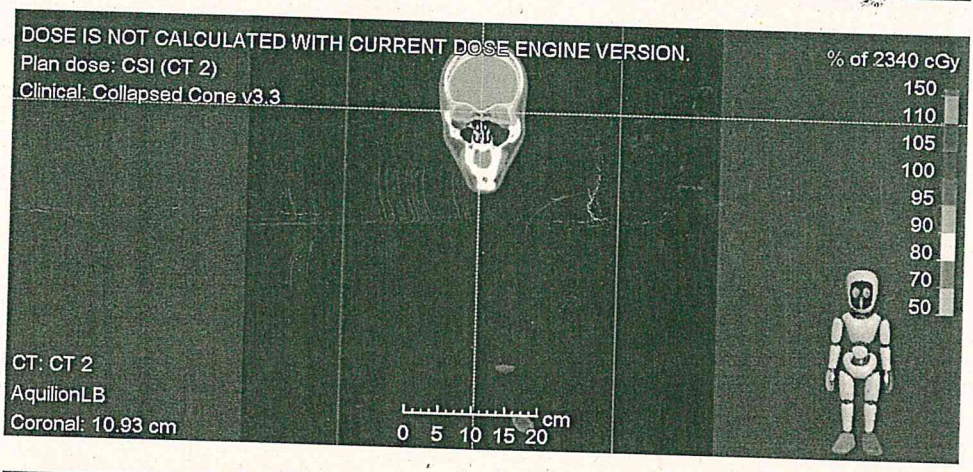
Südtiroler Sanitätsbetrieb | Azienda Sanitaria dell'Alto Adige
Azienda Sanitera de Sudtirol

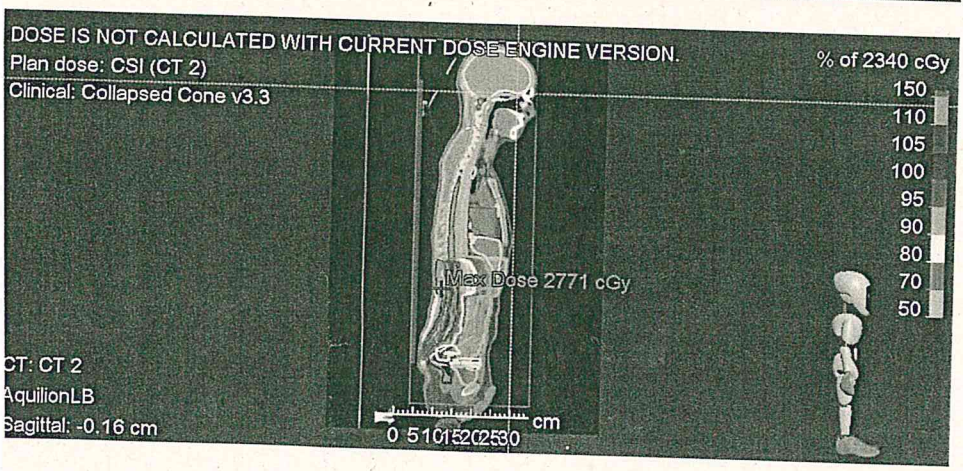
Patient name	[redacted]	Report creation time	31 May 2018, 14:14:35 (hr:min:sec)
Patient ID	27766	Plan last save time	20 Feb 2018, 18:26:24 (hr:min:sec)
Treatment plan name	CSI	Plan approved by	RAYSTATION\raybz
Plan approved	Yes	Plan approval time	20 Feb 2018, 18:26:24 (hr:min:sec)

Plan dose data

Isocenter name	CSI 1
Isocenter [cm]	Right-Left: -0.16 Inf-Sup: -3.15 Post-Ant: 10.93
Dose grid resolution [cm]	Right-Left: 0.20 Inf-Sup: 0.20 Post-Ant: 0.20

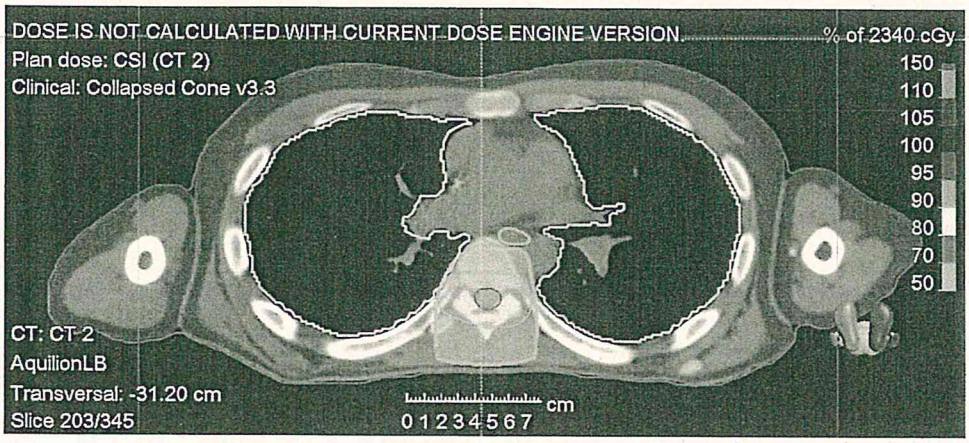


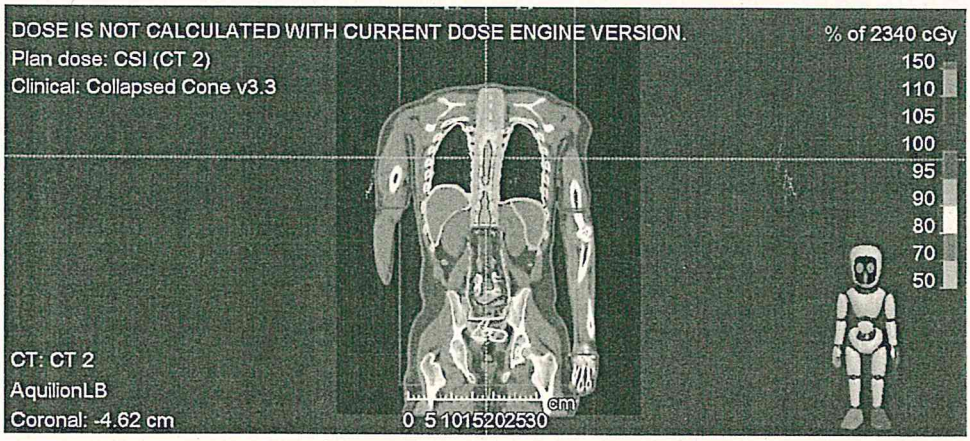


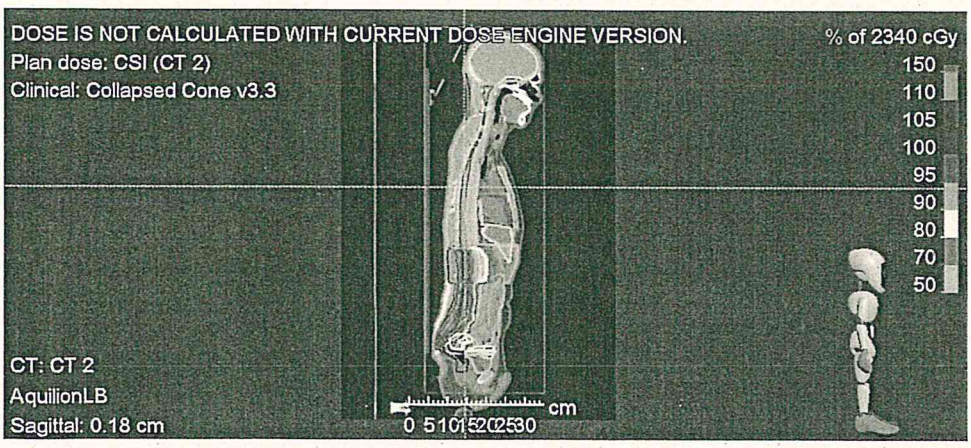


Plan dose data

Isocenter name	CSI 2
Isocenter [cm]	Right-Left: 0.18 Inf-Sup: -31.20 Post-Ant: -4.62
Dose grid resolution [cm]	Right-Left: 0.20 Inf-Sup: 0.20 Post-Ant: 0.20



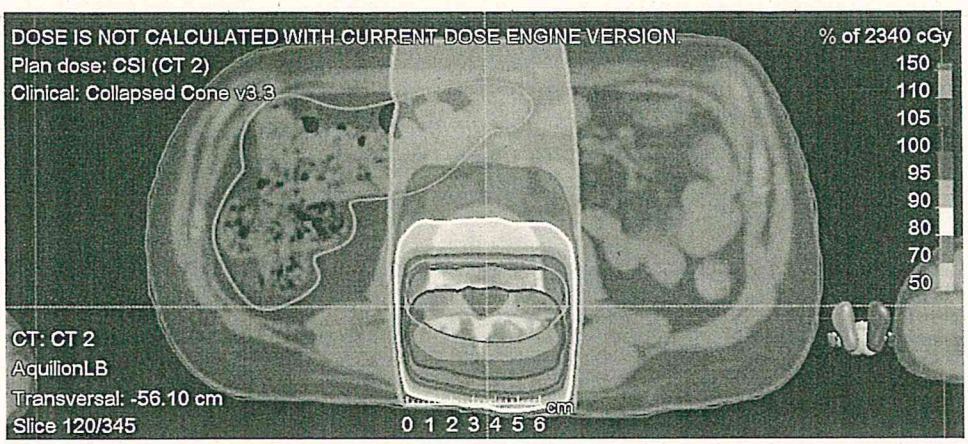


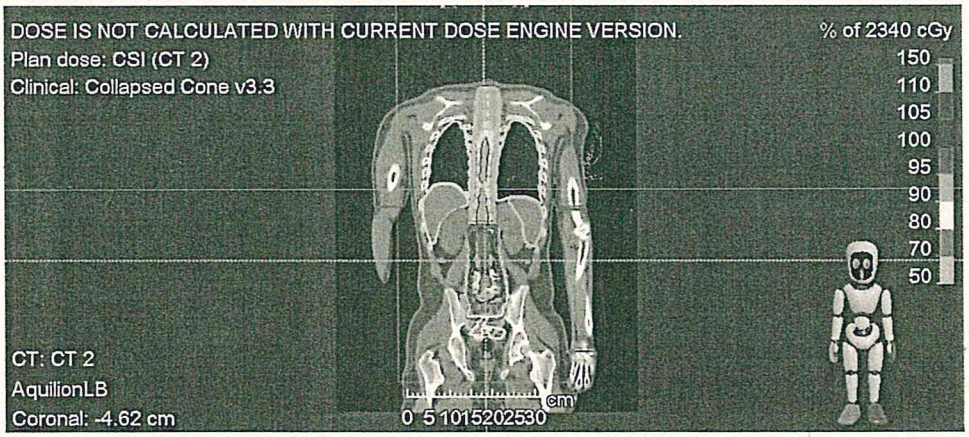


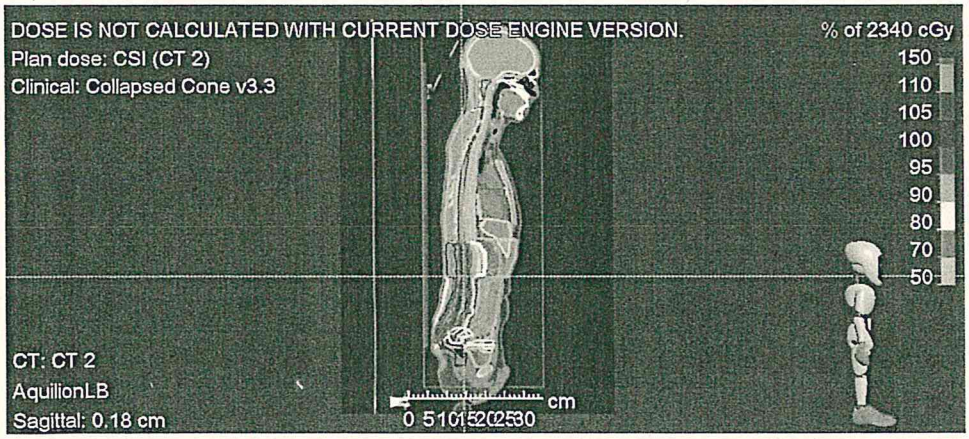
Patient name	[redacted]	Report creation time	31 May 2018, 14:14:35 (hr:min:sec)
Patient ID	27766	Plan last save time	20 Feb 2018, 18:26:24 (hr:min:sec)
Treatment plan name	CSI	Plan approved by	RAYSTATION\raybz
Plan approved	Yes	Plan approval time	20 Feb 2018, 18:26:24 (hr:min:sec)

Plan dose data

Isocenter name	CSI 4 boost 1
Isocenter [cm]	Right-Left: 0.18 Inf-Sup: -56.10 Post-Ant: -4.62
Dose grid resolution [cm]	Right-Left: 0.20 Inf-Sup: 0.20 Post-Ant: 0.20







Patient name	[redacted]	Report creation time	31 May 2018, 14:14:35 (hr:min:sec)
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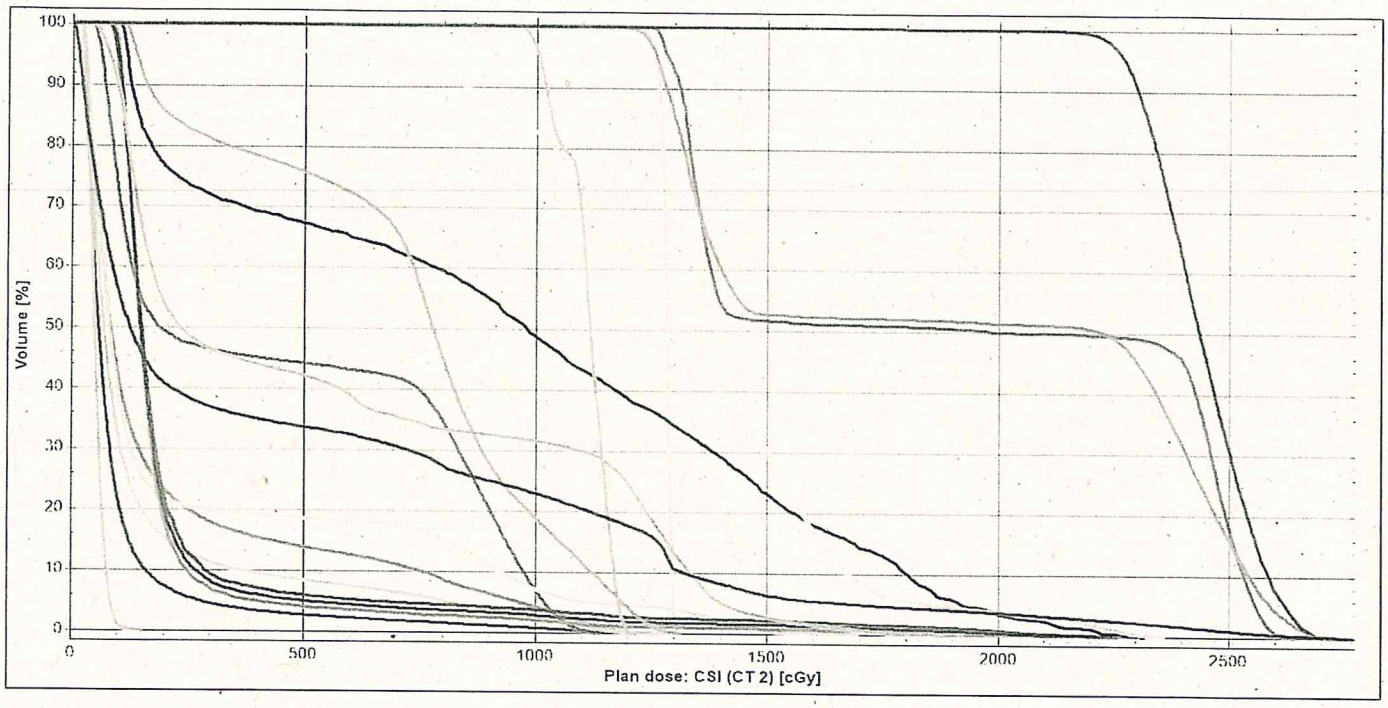


POI Dose statistics

Dose	POI	Dose [cGy]	Position		
			Right-Left: [cm]	Inf-Sup: [cm]	Post-Ant: [cm]
Plan dose: CSI (CT 2)	Reference point	1275	-0.23	0	5.93
Plan dose: CSI (CT 2)	iso	-	-	-	-
Plan dose: CSI (CT 2)	punto dose	-	-	-	-
Plan dose: CSI (CT 2)	iso_CT 1->CT 2	1244	-0.16	-3.15	10.93
Plan dose: CSI (CT 2)	Isocenter1	1285	0	0	0
Plan dose: CSI (CT 2)	Reference point2	1536	0.05	-59.1	0.1
Plan dose: CSI (CT 2)	iso BWK	1350	0.18	-31.2	-4.62
Plan dose: CSI (CT 2)	iso LWS	2540	0.18	-56.1	-4.62
Plan dose: CSI (CT 2)	dose point	1262	0.74	-0.9	1.76

ROI Dose statistics [Plan dose]

Name	Volume [cm³]	D99 [cGy]	D98 [cGy]	D95 [cGy]	Average [cGy]	D50 [cGy]	D2 [cGy]	D1 [cGy]	% outside grid
Boost	618.36	2218	2243	2276	2442	2439	2655	2673	0
Brain									-
Brain (1)	1525.32	1239	1248	1260	1283	1285	1303	1305	0
canale midollare	192.07	1266	1272	1286	1916	2001	2583	2597	0
cuore	736.57	52	55	62	458	189	1061	1081	0
esofago	30.99	983	992	1007	1110	1119	1190	1195	0
External	44215.71	7	10	15	486	127	2339	2497	10
Eye (Left)									-
Eye (Right)									-
fegato	1882.99	26	28	32	257	82	1415	1470	0
intestino	2301.58	59	66	82	576	235	1557	1658	0
Lens li									-
Lens re									-
milza	543.19	26	27	29	53	50	96	103	0
polmone dx	1920.24	24	26	29	210	86	1096	1142	0

polmone sn	1863.20	21	23	26	97	59	658	933	0
polmone sn + polmone dx	3787.27	22	24	27	154	71	1039	1110	0
PTV	1316.84	1228	1241	1262	1908	2230	2641	2665	0
rene dx	199.50	88	91	98	228	152	1597	1944	0
rene dx + rene sn	400.83	90	94	100	212	150	1163	1760	0
rene sn	201.30	94	97	103	196	148	999	1284	0
retto	51.34	110	112	118	948	982	2119	2209	0
sigma	127.90	223	275	578	1283	1278	2191	2260	0
vescica	129.03	123	128	140	717	778	1236	1257	0

External — This ROI is set as the external ROI that defines the outer border of the patient

Clinical Goals (Plan dose)

There are no clinical goals

ROI properties

Name	Material	Mass density [g/cm³]
ibeam	Carbon fiber	1.700
barra1	Aluminum 1	2.700

Beam Set overview

Beam Set name	CSI
Treatment technique	3D-CRT
Treatment unit	SynBz-3160
Number of beams	4

Beam Set overview

Beam Set name	boost
Treatment technique	3D-CRT
Treatment unit	SynBz-3160
Number of beams	4

Warnings [CSI]

Warnings confirmed at report creation by: RAYSTATION\raybz.

- The ROI 'barra1' has a material override but the ROI is not defined on image set 'CT 2'.
  The image set CT 2 is missing geometries for a support ROI. If a support ROI was present in that image set, make sure that its attenuation was taken into account by inclusion in the External ROI geometry or that it can be safely disregarded.
- The beam set dose for an already approved beam set within this plan was computed with a previous dose engine version.
- Old version of dose statistics, voxel volumes have been computed using an old algorithm version.

Warnings [boost]

Warnings confirmed at report creation by: RAYSTATION\raybz.

- The ROI 'barra1' has a material override but the ROI is not defined on image set 'CT 2'.
  The image set CT 2 is missing geometries for a support ROI. If a support ROI was present in that image set, make sure that its attenuation was taken into account by inclusion in the External ROI geometry or that it can be safely disregarded.
- The beam set dose for an already approved beam set within this plan was computed with a previous dose engine version.
- Old version of dose statistics, voxel volumes have been computed using an old algorithm version.

Beam Set Report

Beam Set data

Beam Set name	CSI
Modality	Photons
Treatment technique	3D-CRT
Number of beams	4
Number of segments	8
DICOM Plan UID	1.2.752.243.1.1.20180220182624246.6100.67516
Planning image set	CT 2
CT to density table	AquilionLB 29 Jan 2014, 14:04:29 (hr:min:sec)
Treatment unit	SynBz-3160
Commission time	18 May 2016, 15:07:11 (hr:min:sec)
Treatment machine scale	IEC 61217
Jaw labeling standard	IEC 61217
Energy [MV]	15.00
Dose calculation algorithm	Collapsed Cone, Version 3.3 (Not current version)
Density calculation algorithm version	2.0
MU per fraction	532.96
Number of fractions	7
ROI(s) with density override	ibeam, barra1
Beam set approval data	
Approved	Yes
Approved by	RAYSTATION\raybz
Approval time	20 Feb 2018, 18:26:24 (hr:min:sec)
Structure set UID	1.2.752.243.1.1.20180220163945145.2000.11075
Structure set approval data	
Approved	Yes
Approved by	RAYSTATION\raybz
Approval time	20 Feb 2018, 18:25:47 (hr:min:sec)

Beam Data Overview [Right-Left: -0.16 Inf-Sup: -3.15 Post-Ant: 10.93]

#	Beam name	Number of segments	Maximum jaw aperture [cm] Y1	Y2	Gantry angle [deg]	Coll. angle [deg]	Couch angle [deg]	MU per fraction	Bolus [Y/N]	Block [Y/N]
1	2lilat	1	-15.89	5.63	83.4	90.0	0.0	83.38	N	N
2	2relat	1	-15.89	5.63	263.4	270.0	0.0	83.38	N	N

Beam Data Overview [Right-Left: 0.18 Inf-Sup: -31.20 Post-Ant: -4.62]

#	Beam name	Number of segments	Maximum jaw aperture [cm] Y1	Y2	Gantry angle [deg]	Coll. angle [deg]	Couch angle [deg]	MU per fraction	Bolus [Y/N]	Block [Y/N]
5	pa1	3	-7.00	18.50	180.0	0.0	0.0	186.10	N	N

Beam Data Overview [Right-Left: 0.18 Inf-Sup: -56.10 Post-Ant: -4.62]

#	Beam name	Number of segments	Maximum jaw aperture [cm] Y1	Y2	Gantry angle [deg]	Coll. angle [deg]	Couch angle [deg]	MU per fraction	Bolus [Y/N]	Block [Y/N]
7	pa2	3	-18.80	18.00	194.2	270.0	90.0	180.09	N	N

Prescription

Prescription	180 cGy x 7 fx = 1260 cGy
Prescription Type	Dose at point
Fulfillment	Fulfilled (180 cGy x 7 fx = 1262 cGy)
Dose type	Relates to beam set dose

Patient setup

Localization point
- POI: Reference point
- Treatment position: HFS : Head First Supine
- Position [cm]: X(Right-Left) = -0.23 , Y(Inf-Sup) = 0 , Z(Post-Ant) = 5.93

Patient setup
- Beams: 2lilat, 2relat
- Isocenter [cm]: CSI 1 - X(R-L) = -0.16 , Y(I-S) = -3.15 , Z(P-A) = 10.93
- Localization point - Isocenter [cm]: X(R-L) = -0.07 , Y(I-S) = 3.15 , Z(P-A) = -5.01

Position patient such that lasers line up with patient marks.
Perform the couch shift so that the PATIENT is moved according to the instructions below:
- Right 0.07 cm (patient's right)
- Superior 3.15 cm
- Posterior 5.01 cm

Patient setup
- Beams: pa1
- Isocenter [cm]: CSI 2 - X(R-L) = 0.18 , Y(I-S) = -31.2 , Z(P-A) = -4.62
- Localization point - Isocenter [cm]: X(R-L) = -0.42 , Y(I-S) = 31.2 , Z(P-A) = 10.55

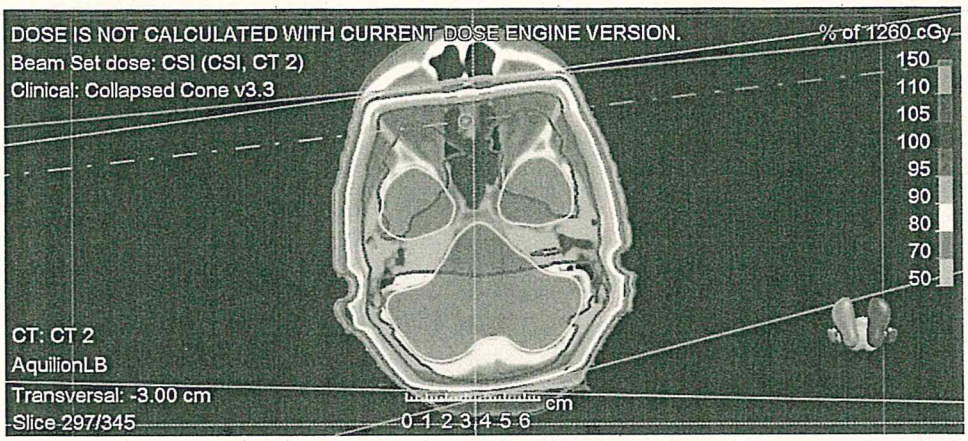
Position patient such that lasers line up with patient marks.
Perform the couch shift so that the PATIENT is moved according to the instructions below:
- Right 0.42 cm (patient's right)
- Superior 31.2 cm
- Anterior 10.55 cm

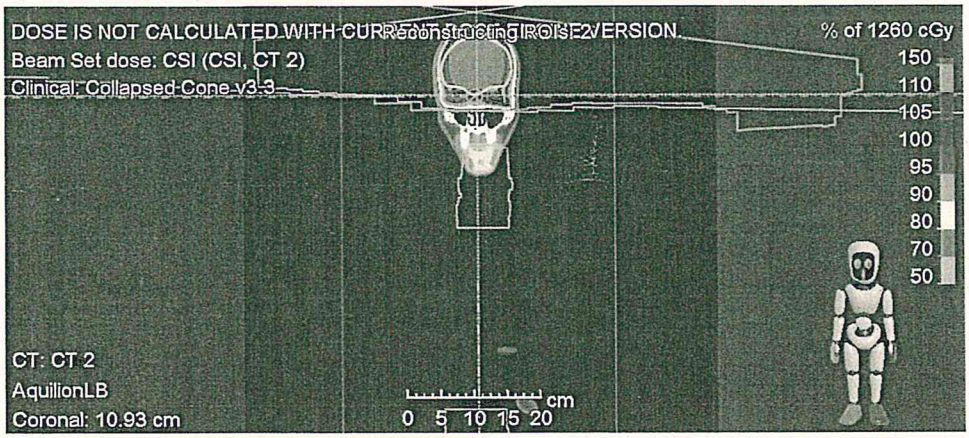
Patient setup
- Beams: pa2
- Isocenter [cm]: CSI 4 - X(R-L) = 0.18 , Y(I-S) = -56.1 , Z(P-A) = -4.62
- Localization point - Isocenter [cm]: X(R-L) = -0.42 , Y(I-S) = 56.1 , Z(P-A) = 10.55

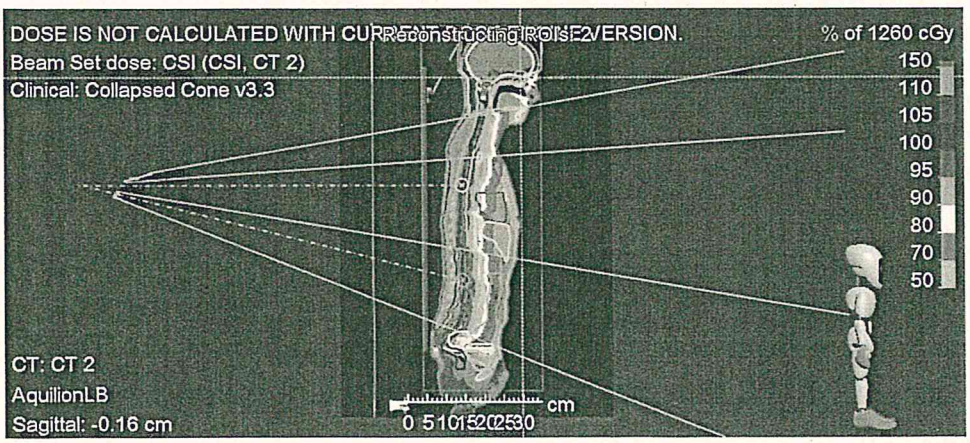
Position patient such that lasers line up with patient marks.
Perform the couch shift so that the PATIENT is moved according to the instructions below:
- Right 0.42 cm (patient's right)
- Superior 56.1 cm
- Anterior 10.55 cm

Beamset dose data

Isocenter name	CSI 1
Isocenter [cm]	Right-Left: -0.16 Inf-Sup: -3.15 Post-Ant: 10.93
Dose grid resolution [cm]	Right-Left: 0.20 Inf-Sup: 0.20 Post-Ant: 0.20
Beams	2lilat, 2relat

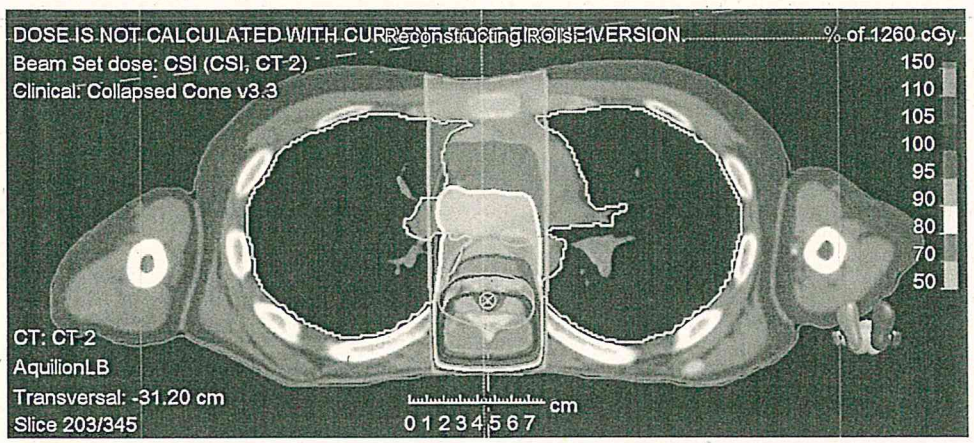


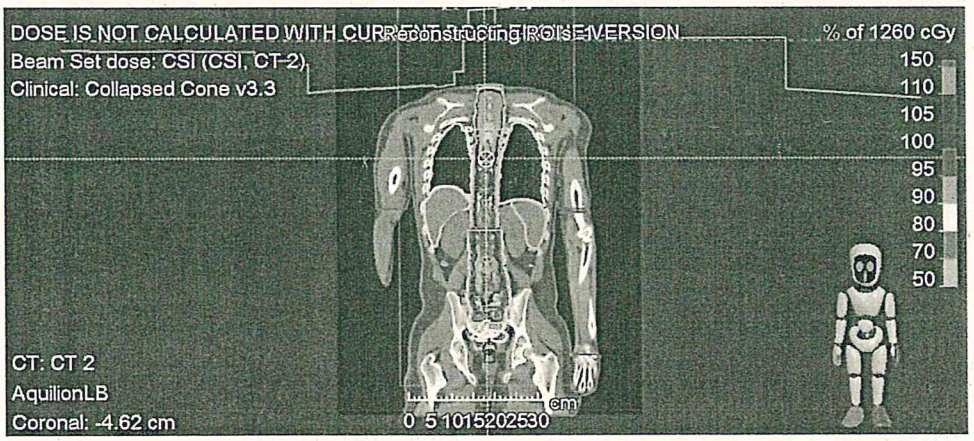


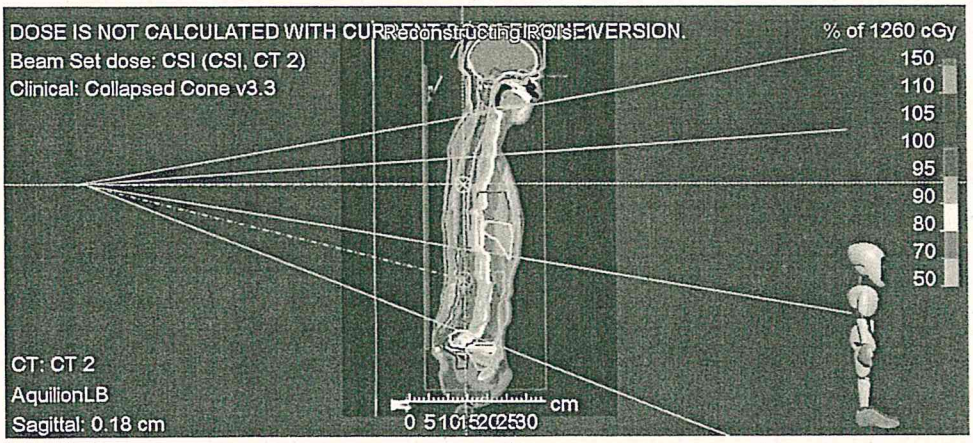


Beamset dose data

Isocenter name	CSI 2
Isocenter [cm]	Right-Left: 0.18 Inf-Sup: -31.20 Post-Ant: -4.62
Dose grid resolution [cm]	Right-Left: 0.20 Inf-Sup: 0.20 Post-Ant: 0.20
Beams	pa1

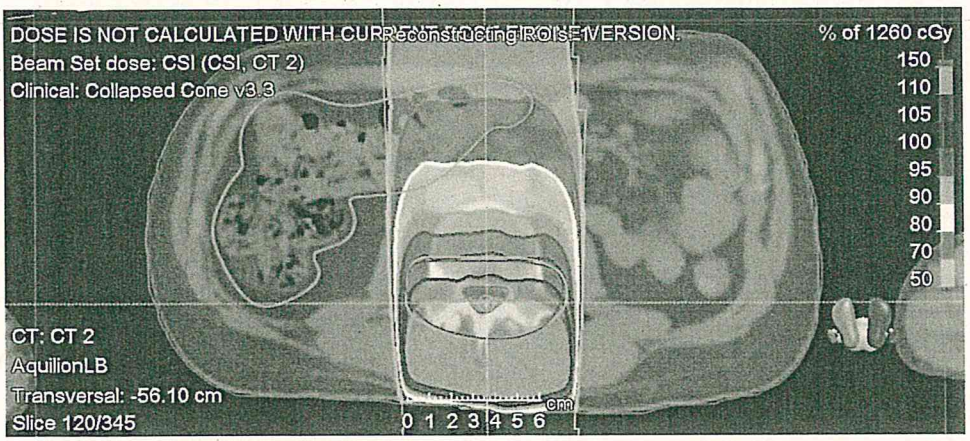


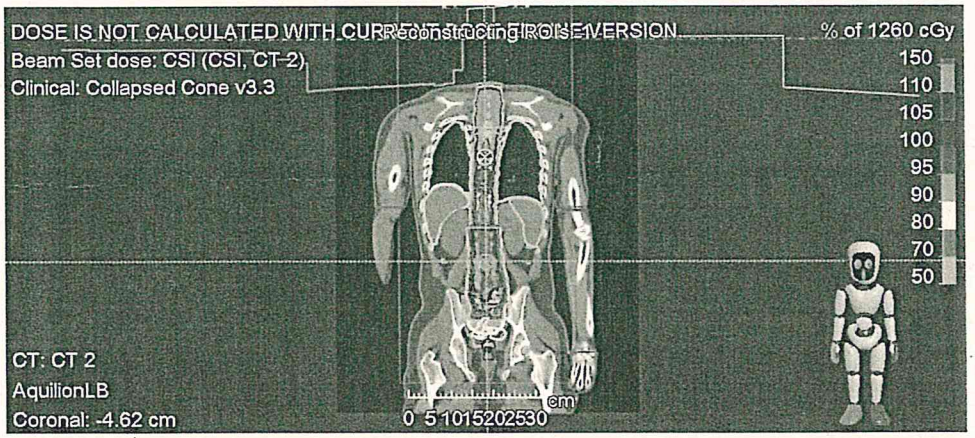


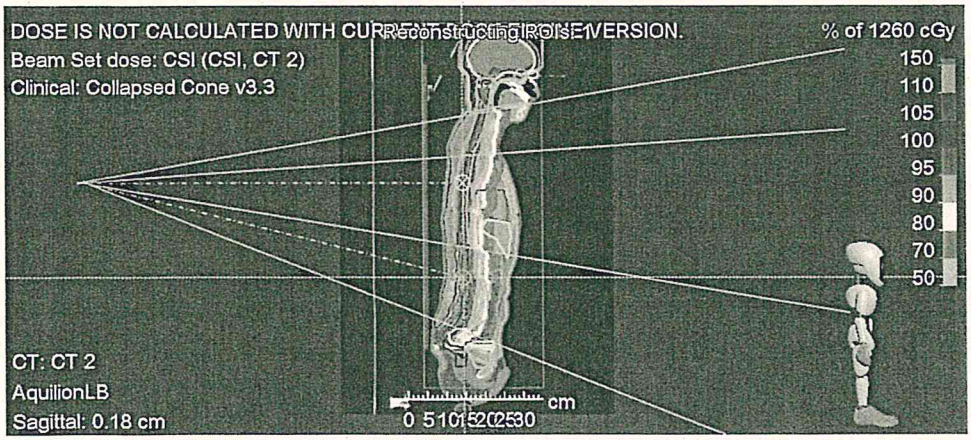


Beamset dose data

Isocenter name	CSI 4
Isocenter [cm]	Right-Left: 0.18 Inf-Sup: -56.10 Post-Ant: -4.62
Dose grid resolution [cm]	Right-Left: 0.20 Inf-Sup: 0.20 Post-Ant: 0.20
Beams	pa2





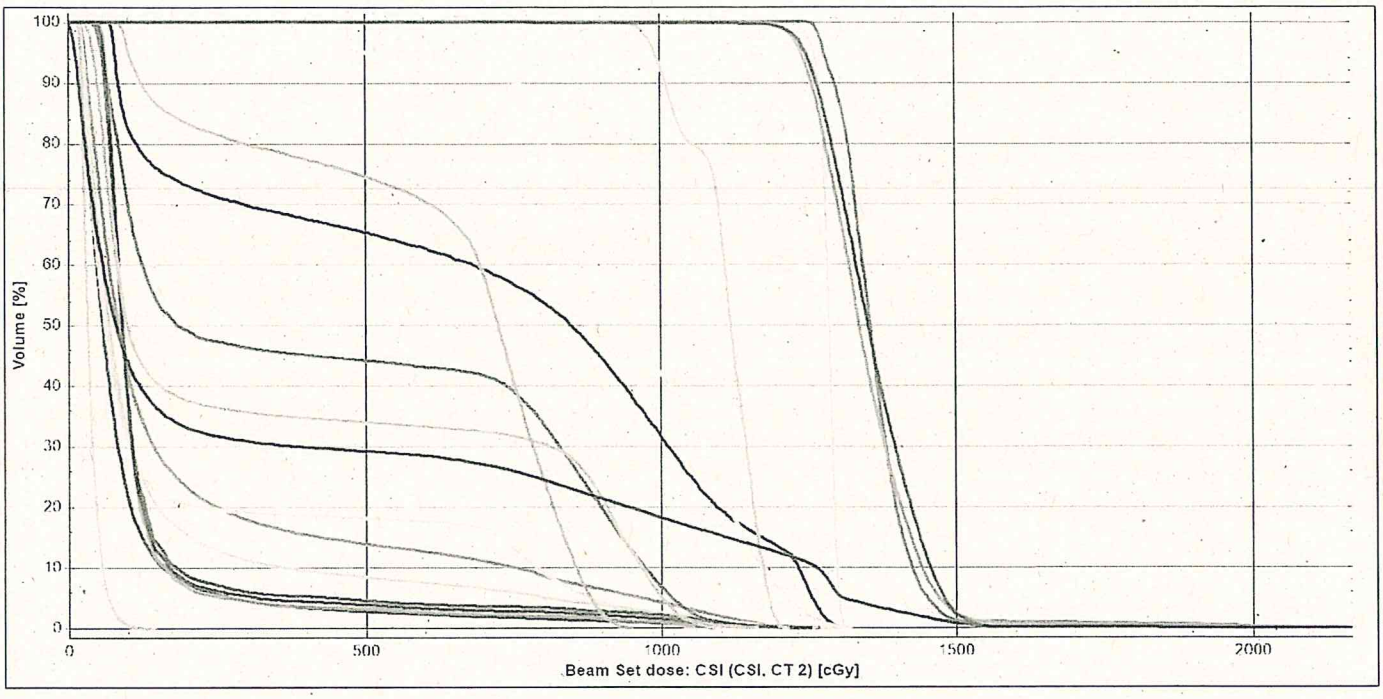


Points Of Interest

		Beam isocenters [cm]	Point - Isocenter [cm]
Name	Reference point	Right-Left: -0.16	Right-Left: -0.07
Type	Localization point	Inf-Sup: -3.15	Inf-Sup: 3.15
Dose [cGy]	1275 [Interpolated]	Post-Ant: 10.93	Post-Ant: -5.01
Location [cm]	Right-Left: -0.23		
	Inf-Sup: 0	Right-Left: 0.18	Right-Left: -0.42
	Post-Ant: 5.93	Inf-Sup: -31.20	Inf-Sup: 31.20
		Post-Ant: -4.62	Post-Ant: 10.55
		Right-Left: 0.18	Right-Left: -0.42
		Inf-Sup: -56.10	Inf-Sup: 56.10
		Post-Ant: -4.62	Post-Ant: 10.55
Name	iso		
Type	Undefined		
Dose [cGy]	0 [Interpolated]		
Location [cm]	N/A		
Name	punto dose		
Type	Undefined		
Dose [cGy]	0 [Interpolated]		
Location [cm]	N/A		
Name	iso_CT 1->CT 2	Right-Left: -0.16	Right-Left: 0.00
Type	Undefined	Inf-Sup: -3.15	Inf-Sup: 0.00
Dose [cGy]	1244 [Interpolated]	Post-Ant: 10.93	Post-Ant: 0.00
Location [cm]	Right-Left: -0.16		
	Inf-Sup: -3.15	Right-Left: 0.18	Right-Left: -0.34
	Post-Ant: 10.93	Inf-Sup: -31.20	Inf-Sup: 28.05
		Post-Ant: -4.62	Post-Ant: 15.56
		Right-Left: 0.18	Right-Left: -0.34
		Inf-Sup: -56.10	Inf-Sup: 52.95
		Post-Ant: -4.62	Post-Ant: 15.56
Name	Isocenter1	Right-Left: -0.16	Right-Left: 0.16
Type	Isocenter	Inf-Sup: -3.15	Inf-Sup: 3.15
Dose [cGy]	1285 [Interpolated]	Post-Ant: 10.93	Post-Ant: -10.93
Location [cm]	Right-Left: 0		
	Inf-Sup: 0	Right-Left: 0.18	Right-Left: -0.18
	Post-Ant: 0	Inf-Sup: -31.20	Inf-Sup: 31.20
		Post-Ant: -4.62	Post-Ant: 4.62
		Right-Left: 0.18	Right-Left: -0.18
		Inf-Sup: -56.10	Inf-Sup: 56.10
		Post-Ant: -4.62	Post-Ant: 4.62

Name	Reference point2	Right-Left: -0.16 Inf-Sup: -3.15 Post-Ant: 10.93	Right-Left: 0.20 Inf-Sup: -55.95 Post-Ant: -10.84
Type	Undefined		
Dose [cGy]	1126 [Interpolated]	Right-Left: 0.18 Inf-Sup: -31.20 Post-Ant: -4.62	Right-Left: -0.14 Inf-Sup: -27.90 Post-Ant: 4.72
Location [cm]	Right-Left: 0.05 Inf-Sup: -59.1 Post-Ant: 0.1		
		Right-Left: 0.18 Inf-Sup: -56.10 Post-Ant: -4.62	Right-Left: -0.14 Inf-Sup: -3.00 Post-Ant: 4.72
Name	iso BWK	Right-Left: -0.16 Inf-Sup: -3.15 Post-Ant: 10.93	Right-Left: 0.34 Inf-Sup: -28.05 Post-Ant: -15.56
Type	Undefined		
Dose [cGy]	1350 [Interpolated]	Right-Left: 0.18 Inf-Sup: -31.20 Post-Ant: -4.62	Right-Left: 0.00 Inf-Sup: 0.00 Post-Ant: 0.00
Location [cm]	Right-Left: 0.18 Inf-Sup: -31.2 Post-Ant: -4.62		
		Right-Left: 0.18 Inf-Sup: -56.10 Post-Ant: -4.62	Right-Left: 0.00 Inf-Sup: 24.90 Post-Ant: 0.00
Name	iso LWS	Right-Left: -0.16 Inf-Sup: -3.15 Post-Ant: 10.93	Right-Left: 0.34 Inf-Sup: -52.95 Post-Ant: -15.56
Type	Undefined		
Dose [cGy]	1398 [Interpolated]	Right-Left: 0.18 Inf-Sup: -31.20 Post-Ant: -4.62	Right-Left: 0.00 Inf-Sup: -24.90 Post-Ant: 0.00
Location [cm]	Right-Left: 0.18 Inf-Sup: -56.1 Post-Ant: -4.62		
		Right-Left: 0.18 Inf-Sup: -56.10 Post-Ant: -4.62	Right-Left: 0.00 Inf-Sup: 0.00 Post-Ant: 0.00
Name	dose point	Right-Left: -0.16 Inf-Sup: -3.15 Post-Ant: 10.93	Right-Left: 0.90 Inf-Sup: 2.25 Post-Ant: -9.17
Type	Undefined		
Dose [cGy]	1262 [Interpolated]	Right-Left: 0.18 Inf-Sup: -31.20 Post-Ant: -4.62	Right-Left: 0.56 Inf-Sup: 30.30 Post-Ant: 6.38
Location [cm]	Right-Left: 0.74 Inf-Sup: -0.9 Post-Ant: 1.76		
		Right-Left: 0.18 Inf-Sup: -56.10 Post-Ant: -4.62	Right-Left: 0.56 Inf-Sup: 55.20 Post-Ant: 6.38

Patient name	[redacted]	Report creation time	31 May 2018, 14:14:35 (hr:min:sec)
Patient ID	27766	Plan last save time	20 Feb 2018, 18:26:24 (hr:min:sec)
Treatment plan name	CSI	Plan approved by	RAYSTATION\raybz
Plan approved	Yes	Plan approval time	20 Feb 2018, 18:26:24 (hr:min:sec)



POI Dose statistics

Dose	POI	Dose [cGy]	Position		
			Right-Left: [cm]	Inf-Sup: [cm]	Post-Ant: [cm]
Beam Set dose: CSI (CSI, CT 2)	Reference point	1275	-0.23	0	5.93
Beam Set dose: CSI (CSI, CT 2)	iso	-	-	-	-
Beam Set dose: CSI (CSI, CT 2)	punto dose	-	-	-	-
Beam Set dose: CSI (CSI, CT 2)	iso_CT 1->CT 2	1244	-0.16	-3.15	10.93
Beam Set dose: CSI (CSI, CT 2)	Isocenter1	1285	0	0	0
Beam Set dose: CSI (CSI, CT 2)	Reference point2	1126	0.05	-59.1	0.1
Beam Set dose: CSI (CSI, CT 2)	iso BWK	1350	0.18	-31.2	-4.62
Beam Set dose: CSI (CSI, CT 2)	iso LWS	1398	0.18	-56.1	-4.62
Beam Set dose: CSI (CSI, CT 2)	dose point	1262	0.74	-0.9	1.76

ROI Dose statistics [Beam Set dose]

Name	Volume [cm³]	D99 [cGy]	D98 [cGy]	D95 [cGy]	Average [cGy]	D50 [cGy]	D2 [cGy]	D1 [cGy]	% outside grid
Boost	618.36	1207	1225	1246	1356	1351	1506	1525	0
Brain									-
Brain (1)	1525.32	1239	1248	1260	1283	1285	1303	1305	0
canale midollare	192.07	1264	1269	1278	1362	1355	1480	1540	0
cuore	736.57	47	50	57	454	183	1059	1080	0
esofago	30.99	963	974	992	1108	1119	1190	1195	0
External	44215.71	5	7	12	369	81	1432	1483	10
Eye (Left)									-
Eye (Right)									-
fegato	1882.99	21	22	25	203	63	966	1002	0
intestino	2301.58	33	37	43	370	101	1032	1054	0
Lens li									-
Lens re									-
milza	543.19	20	20	21	37	34	81	91	0
polmone dx	1920.24	23	25	29	208	85	1094	1141	0

polmone sn	1863.20	19	21	24	96	58	656	931	0
polmone sn + polmone dx	3787.27	21	23	26	153	70	1037	1109	0
PTV	1316.84	1208	1220	1238	1346	1335	1507	1543	0
rene dx	199.50	51	53	57	139	91	1006	1089	0
rene dx + rene sn	400.83	53	55	60	132	91	916	1044	0
rene sn	201.30	56	59	63	125	92	800	970	0
retto	51.34	74	76	79	698	848	1273	1283	0
sigma	127.90	161	207	507	936	950	1247	1268	0
vescica	129.03	91	94	103	617	726	903	915	0

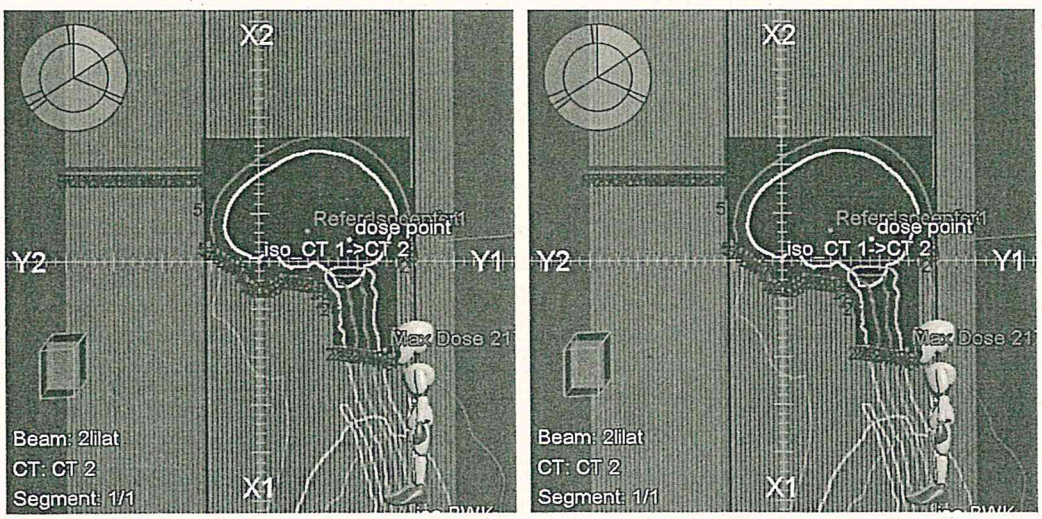
External — This ROI is set as the external ROI that defines the outer border of the patient

Beam data

Beam name	2lilat
Beam number	1
Beam description	
Patient coordinate system	IEC 61217
Isocenter [cm]	CSI 1 - Right-Left: -0.16 Inf-Sup: -3.15 Post-Ant: 10.93
Gantry angle [deg]	83.4
Collimator angle [deg]	90.0
Couch angle [deg]	0.0
Treatment technique	3D-CRT
Number of fractions	7
Beam MU/fraction	83.38
Total beam MU	583.68
Beam weight [%]	15.6
Number of segments	1
Dose calculation algorithm	Collapsed Cone, Version 3.3 (Not current version)
Treatment unit	SynBz-3160
Commission time	18 May 2016, 15:07:11 (hr:min:sec)
Energy [MV]	15.00
Jaw max aperture width [cm]	-
X1 [cm]	-
X2 [cm]	-
Jaw max aperture height [cm]	21.52
Y1 [cm]	-15.89
Y2 [cm]	5.63
Source to skin distance (isocenter) [cm]	93.77
Source to surface distance (isocenter) [cm]	93.77
Bolus data	
No bolus	

Beam dose specification point

Coordinates [cm]	Isocenter
Dose per fraction [cGy]	87.3
Physical depth [cm]	6.23
Water equivalent depth [cm]	6.17
Source to skin distance [cm]	93.77
Source to surface distance [cm]	93.77



Segments

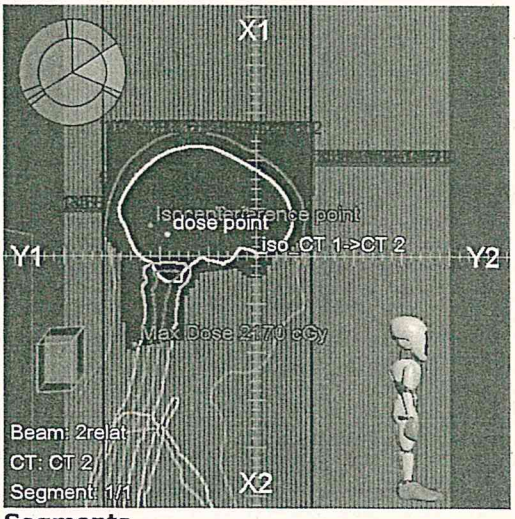
Seg. No.	MU/Fraction	Jaw positions [cm]	
		Y1	Y2
1	83.38	-15.89	5.63

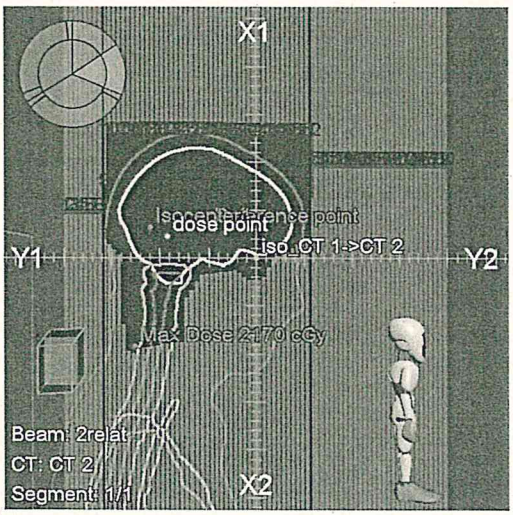
Beam data

Beam name	2relat
Beam number	2
Beam description	
Patient coordinate system	IEC 61217
Isocenter [cm]	CSI 1 - Right-Left: -0.16 Inf-Sup: -3.15 Post-Ant: 10.93
Gantry angle [deg]	263.4
Collimator angle [deg]	270.0
Couch angle [deg]	0.0
Treatment technique	3D-CRT
Number of fractions	7
Beam MU/fraction	83.38
Total beam MU	583.68
Beam weight [%]	15.6
Number of segments	1
Dose calculation algorithm	Collapsed Cone, Version 3.3 (Not current version)
Treatment unit	SynBz-3160
Commission time	18 May 2016, 15:07:11 (hr:min:sec)
Energy [MV]	15.00
Jaw max aperture width [cm]	-
X1 [cm]	-
X2 [cm]	-
Jaw max aperture height [cm]	21.52
Y1 [cm]	-15.89
Y2 [cm]	5.63
Source to skin distance (isocenter) [cm]	93.97
Source to surface distance (isocenter) [cm]	93.97
Bolus data	
No bolus	

Beam dose specification point

Coordinates [cm]	Isocenter
Dose per fraction [cGy]	88.1
Physical depth [cm]	6.03
Water equivalent depth [cm]	5.55
Source to skin distance [cm]	93.97
Source to surface distance [cm]	93.97





Segments

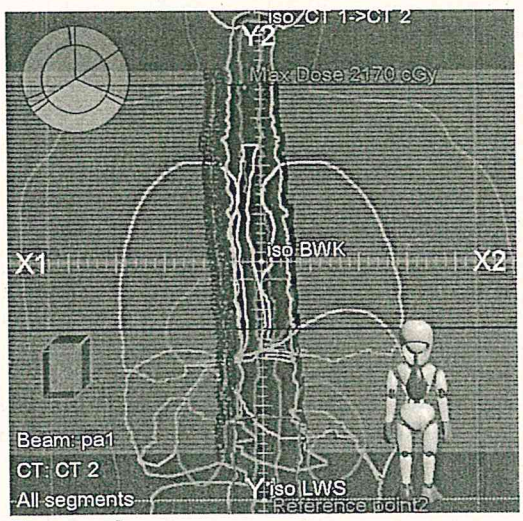
Seg. No.	MU/Fraction	Jaw positions [cm]	
		Y1	Y2
1	83.38	-15.89	5.63

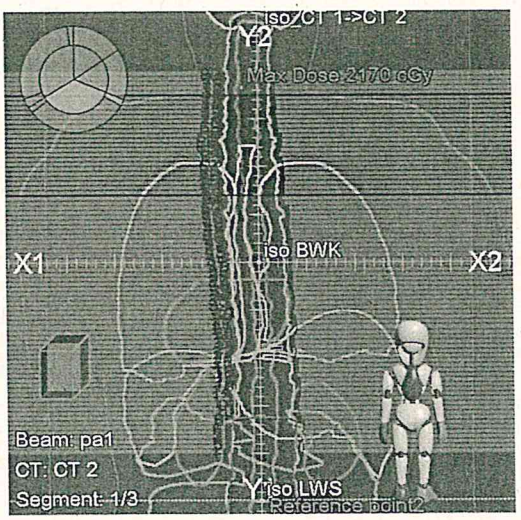
Beam data

Beam name	pa1
Beam number	5
Beam description	
Patient coordinate system	IEC 61217
Isocenter [cm]	CSI 2 - Right-Left: 0.18 Inf-Sup: -31.20 Post-Ant: -4.62
Gantry angle [deg]	180.0
Collimator angle [deg]	0.0
Couch angle [deg]	0.0
Treatment technique	3D-CRT
Number of fractions	7
Beam MU/fraction	186.10
Total beam MU	1302.67
Beam weight [%]	34.9
Number of segments	3
Dose calculation algorithm	Collapsed Cone, Version 3.3 (Not current version)
Treatment unit	SynBz-3160
Commission time	18 May 2016, 15:07:11 (hr:min:sec)
Energy [MV]	15.00
Jaw max aperture width [cm]	-
X1 [cm]	-
X2 [cm]	-
Jaw max aperture height [cm]	25.50
Y1 [cm]	-7.00
Y2 [cm]	18.50
Source to skin distance (isocenter) [cm]	95.62
Source to surface distance (isocenter) [cm]	90.17
Bolus data	
No bolus	

Beam dose specification point

Coordinates [cm]	Isocenter
Dose per fraction [cGy]	190.4
Physical depth [cm]	9.83
Water equivalent depth [cm]	5.38
Source to skin distance [cm]	95.62
Source to surface distance [cm]	90.17





Segments

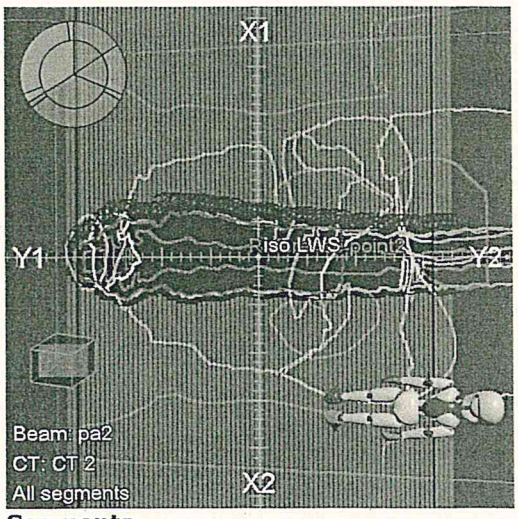
Seg. No.	MU/Fraction	Jaw positions [cm] Y1	Y2
1	10.01	7.00	17.50
2	166.09	-7.00	18.50
3	10.01	0.00	17.50

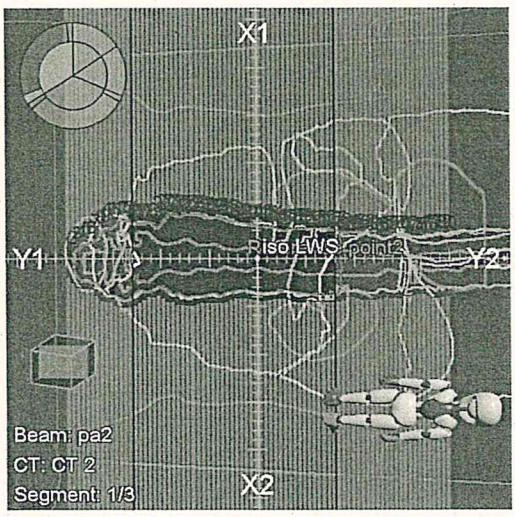
Beam data

Beam name	pa2
Beam number	7
Beam description	
Patient coordinate system	IEC 61217
Isocenter [cm]	CSI 4 - Right-Left: 0.18 Inf-Sup: -56.10 Post-Ant: -4.62
Gantry angle [deg]	194.2
Collimator angle [deg]	270.0
Couch angle [deg]	90.0
Treatment technique	3D-CRT
Number of fractions	7
Beam MU/fraction	180.09
Total beam MU	1260.65
Beam weight [%]	33.8
Number of segments	3
Dose calculation algorithm	Collapsed Cone, Version 3.3 (Not current version)
Treatment unit	SynBz-3160
Commission time	18 May 2016, 15:07:11 (hr:min:sec)
Energy [MV]	15.00
Jaw max aperture width [cm]	-
X1 [cm]	-
X2 [cm]	-
Jaw max aperture height [cm]	36.80
Y1 [cm]	-18.80
Y2 [cm]	18.00
Source to skin distance (isocenter) [cm]	95.00
Source to surface distance (isocenter) [cm]	89.86
Bolus data	
No bolus	

Beam dose specification point

Coordinates [cm]	Isocenter
Dose per fraction [cGy]	199.7
Physical depth [cm]	10.14
Water equivalent depth [cm]	5.99
Source to skin distance [cm]	95.00
Source to surface distance [cm]	89.86





Segments

Seg. No.	MU/Fraction	Jaw positions [cm] Y1	Y2
1	15.01	-13.00	8.00
2	155.08	-18.80	18.00
3	10.01	-15.00	1.00

Beam Set Report

Beam Set data

Beam Set name	boost
Modality	Photons
Treatment technique	3D-CRT
Number of beams	4
Number of segments	4
DICOM Plan UID	1.2.752.243.1.1.20180220182547047.6000.48784
Planning image set	CT 2
CT to density table	AquilionLB 29 Jan 2014, 14:04:29 (hr:min:sec)
Treatment unit	SynBz-3160
Commission time	18 May 2016, 15:07:11 (hr:min:sec)
Treatment machine scale	IEC 61217
Jaw labeling standard	IEC 61217
Energy [MV]	15.00
Dose calculation algorithm	Collapsed Cone, Version 3.3 (Not current version)
Density calculation algorithm version	2.0
MU per fraction	297.09
Number of fractions	6
ROI(s) with density override	ibeam, barra1
Beam set approval data	
Approved	Yes
Approved by	RAYSTATION\raybz
Approval time	20 Feb 2018, 18:25:47 (hr:min:sec)
Structure set UID	1.2.752.243.1.1.20180220163945145.2000.11075
Structure set approval data	
Approved	Yes
Approved by	RAYSTATION\raybz
Approval time	20 Feb 2018, 18:25:47 (hr:min:sec)

Beam Data Overview [Right-Left: 0.18 Inf-Sup: -56.10 Post-Ant: -4.62]

#	Beam name	Number of segments	Maximum jaw aperture [cm] Y1	Y2	Gantry angle [deg]	Coll. angle [deg]	Couch angle [deg]	MU per fraction	Bolus [Y/N]	Block [Y/N]
1	brelat	1	-17.87	-0.10	278.8	0.0	0.0	64.01	N	N
2	bpa	1	-19.18	9.28	180.0	0.0	0.0	64.01	N	N
3	blilat	1	-17.76	0.00	83.5	0.0	0.0	64.01	N	N
4	bpa2	1	0.00	9.28	180.0	0.0	0.0	105.06	N	N

Prescription

Prescription	180 cGy x 6 fx = 1080 cGy
Prescription Type	Median dose (D50%)
ROI	Boost
Fulfillment	Fulfilled (180 cGy x 6 fx = 1080 cGy)
Dose type	Relates to beam set dose

Patient setup

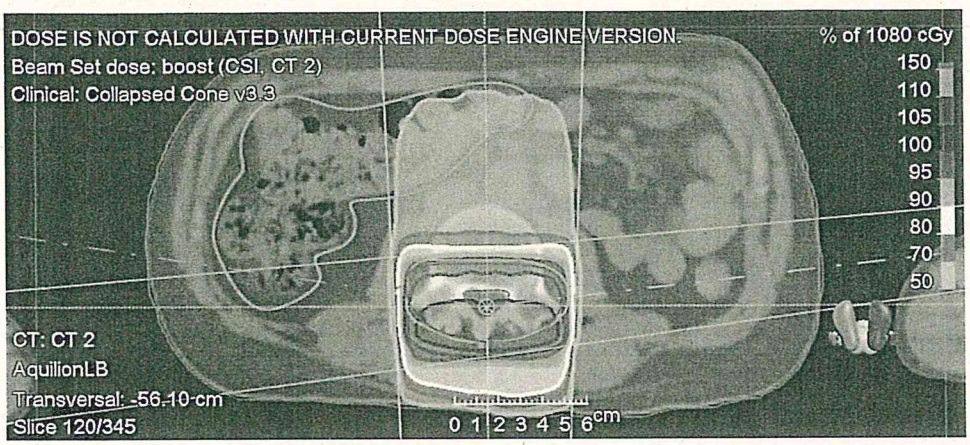
Localization point	
POI	Reference point
Treatment position	HFS : Head First Supine
Position [cm]	X(Right-Left) = -0.23 , Y(Inf-Sup) = 0 , Z(Post-Ant) = 5.93
Patient setup	
Beams	brelat, bpa, blilat, bpa2
Isocenter [cm]	boost 1 - X(R-L) = 0.18 , Y(I-S) = -56.1 , Z(P-A) = -4.62
Localization point - Isocenter [cm]	X(R-L) = -0.42 , Y(I-S) = 56.1 , Z(P-A) = 10.55

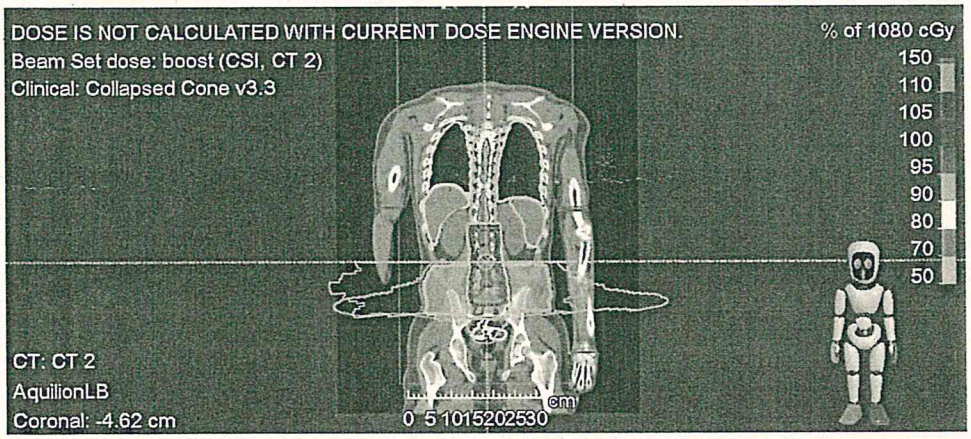
Position patient such that lasers line up with patient marks.
Perform the couch shift so that the PATIENT is moved according to the instructions below:

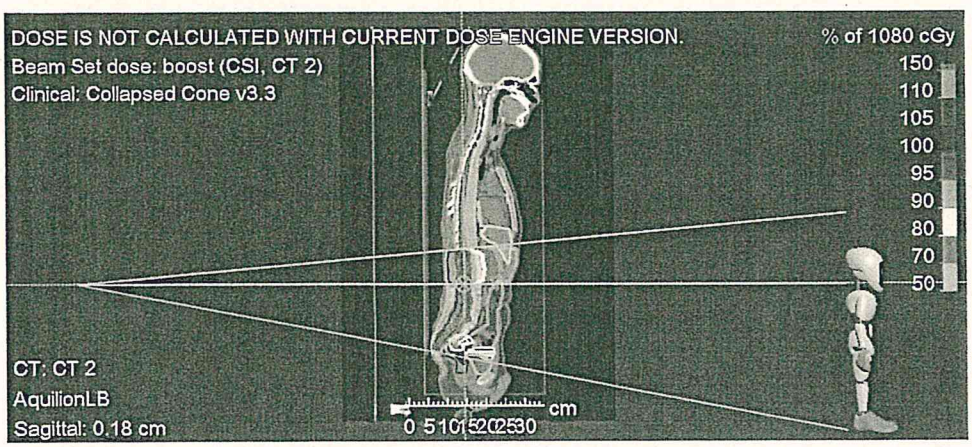
Right 0.42 cm (patient's right)
Superior 56.1 cm
Anterior 10.55 cm

Beamset dose data

Isocenter name	boost 1
Isocenter [cm]	Right-Left: 0.18 Inf-Sup: -56.10 Post-Ant: -4.62
Dose grid resolution [cm]	Right-Left: 0.20 Inf-Sup: 0.20 Post-Ant: 0.20
Beams	brelat, bpa, blilat, bpa2



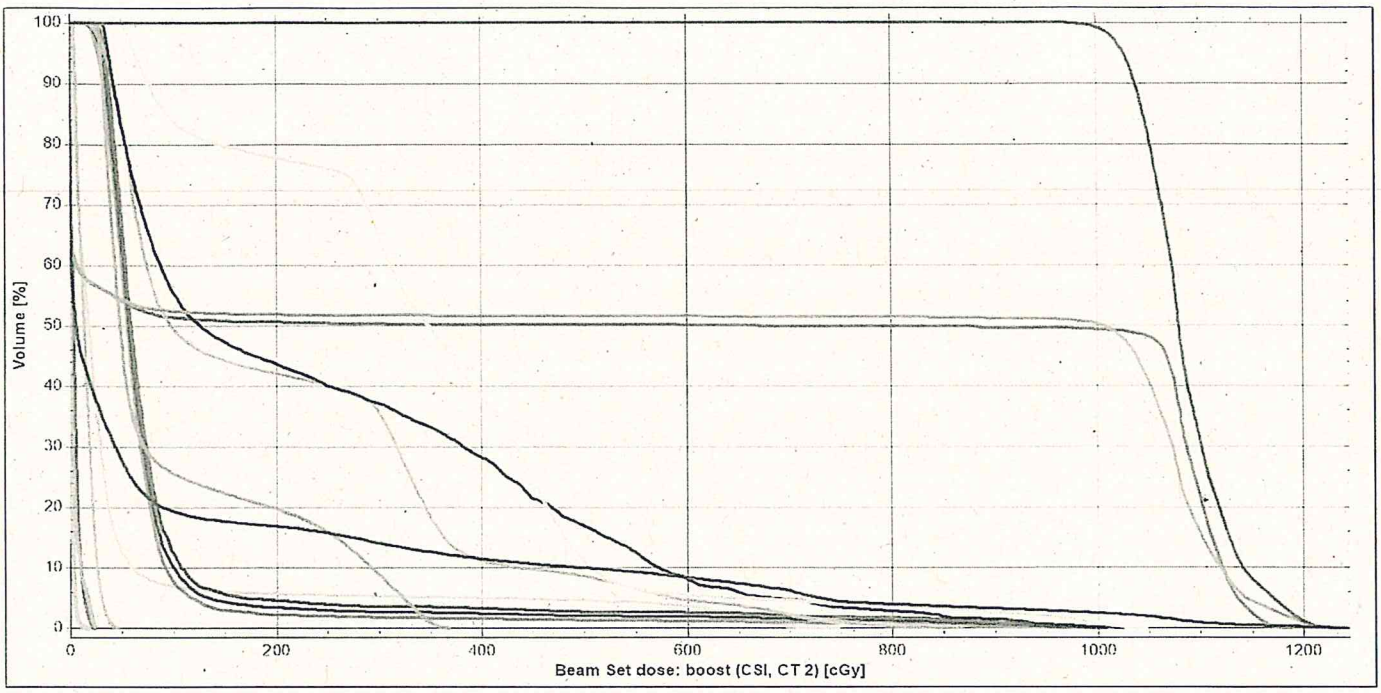




Points Of Interest

		Beam isocenters [cm]	Point - Isocenter [cm]
Name	Reference point	Right-Left: 0.18	Right-Left: -0.42
Type	Localization point	Inf-Sup: -56.10	Inf-Sup: 56.10
Dose [cGy]	0 [Interpolated]	Post-Ant: -4.62	Post-Ant: 10.55
Location [cm]	Right-Left: -0.23 Inf-Sup: 0 Post-Ant: 5.93		
Name	iso		
Type	Undefined		
Dose [cGy]	0 [Interpolated]		
Location [cm]	N/A		
Name	punto dose		
Type	Undefined		
Dose [cGy]	0 [Interpolated]		
Location [cm]	N/A		
Name	iso_CT 1->CT 2	Right-Left: 0.18	Right-Left: -0.34
Type	Undefined	Inf-Sup: -56.10	Inf-Sup: 52.95
Dose [cGy]	0 [Interpolated]	Post-Ant: -4.62	Post-Ant: 15.56
Location [cm]	Right-Left: -0.16 Inf-Sup: -3.15 Post-Ant: 10.93		
Name	Isocenter1	Right-Left: 0.18	Right-Left: -0.18
Type	Isocenter	Inf-Sup: -56.10	Inf-Sup: 56.10
Dose [cGy]	0 [Interpolated]	Post-Ant: -4.62	Post-Ant: 4.62
Location [cm]	Right-Left: 0 Inf-Sup: 0 Post-Ant: 0		
Name	Reference point2	Right-Left: 0.18	Right-Left: -0.14
Type	Undefined	Inf-Sup: -56.10	Inf-Sup: -3.00
Dose [cGy]	411 [Interpolated]	Post-Ant: -4.62	Post-Ant: 4.72
Location [cm]	Right-Left: 0.05 Inf-Sup: -59.1 Post-Ant: 0.1		
Name	iso BWK	Right-Left: 0.18	Right-Left: 0.00
Type	Undefined	Inf-Sup: -56.10	Inf-Sup: 24.90
Dose [cGy]	0 [Interpolated]	Post-Ant: -4.62	Post-Ant: 0.00
Location [cm]	Right-Left: 0.18 Inf-Sup: -31.2 Post-Ant: -4.62		
Name	iso LWS	Right-Left: 0.18	Right-Left: 0.00
Type	Undefined	Inf-Sup: -56.10	Inf-Sup: 0.00
Dose [cGy]	1142 [Interpolated]	Post-Ant: -4.62	Post-Ant: 0.00
Location [cm]	Right-Left: 0.18 Inf-Sup: -56.1 Post-Ant: -4.62		
Name	dose point	Right-Left: 0.18	Right-Left: 0.56
Type	Undefined	Inf-Sup: -56.10	Inf-Sup: 55.20
Dose [cGy]	0 [Interpolated]	Post-Ant: -4.62	Post-Ant: 6.38
Location [cm]	Right-Left: 0.74 Inf-Sup: -0.9 Post-Ant: 1.76		

Patient name	[redacted]	Report creation time	31 May 2018, 14:14:35 (hr:min:sec)
Patient ID	27766	Plan last save time	20 Feb 2018, 18:26:24 (hr:min:sec)
Treatment plan name	CSI	Plan approved by	RAYSTATION\raybz
Plan approved	Yes	Plan approval time	20 Feb 2018, 18:26:24 (hr:min:sec)



POI Dose statistics

Dose	POI	Dose [cGy]	Position Right-Left: [cm]	Position Inf-Sup: [cm]	Position Post-Ant: [cm]
Beam Set dose: boost (CSI, CT 2)	Reference point	0	-0.23	0	5.93
Beam Set dose: boost (CSI, CT 2)	iso	-	-	-	-
Beam Set dose: boost (CSI, CT 2)	punto dose	-	-	-	-
Beam Set dose: boost (CSI, CT 2)	iso_CT 1->CT 2	0	-0.16	-3.15	10.93
Beam Set dose: boost (CSI, CT 2)	Isocenter1	0	0	0	0
Beam Set dose: boost (CSI, CT 2)	Reference point2	411	0.05	-59.1	0.1
Beam Set dose: boost (CSI, CT 2)	iso BWK	0	0.18	-31.2	-4.62
Beam Set dose: boost (CSI, CT 2)	iso LWS	1142	0.18	-56.1	-4.62
Beam Set dose: boost (CSI, CT 2)	dose point	0	0.74	-0.9	1.76

ROI Dose statistics [Beam Set dose]

Name	Volume [cm³]	D99 [cGy]	D98 [cGy]	D95 [cGy]	Average [cGy]	D50 [cGy]	D2 [cGy]	D1 [cGy]	% outside grid
Boost	618.36	1004	1014	1027	1086	1080	1192	1201	0
Brain									-
Brain (1)	1525.32	0	0	0	0	0	0	0	0
canale midollare	192.07	0	0	0	554	630	1153	1161	0
cuore	736.57	0	0	0	5	4	18	20	0
esofago	30.99	0	0	0	3	0	22	23	0
External	44215.71	0	0	0	117	6	1039	1091	10
Eye (Left)									-
Eye (Right)									-
fegato	1882.99	2	2	3	54	19	648	673	0
intestino	2301.58	25	28	36	205	98	705	746	0
Lens li									-
Lens re									-
milza	543.19	4	4	5	15	14	36	39	0
polmone dx	1920.24	0	0	0	1	0	7	9	0

polmone sn	1863.20	0	0	0	1	1	7	8	0
polmone sn + polmone dx	3787.27	0	0	0	1	1	7	9	0
PTV	1316.84	0	0	0	562	1004	1183	1199	0
rene dx	199.50	30	31	35	89	60	703	880	0
rene dx + rene sn	400.83	23	26	31	80	58	486	830	0
rene sn	201.30	21	23	28	71	56	234	643	0
retto	51.34	35	36	39	250	127	847	924	0
sigma	127.90	55	57	64	347	349	947	995	0
vescica	129.03	28	29	31	100	49	342	349	0

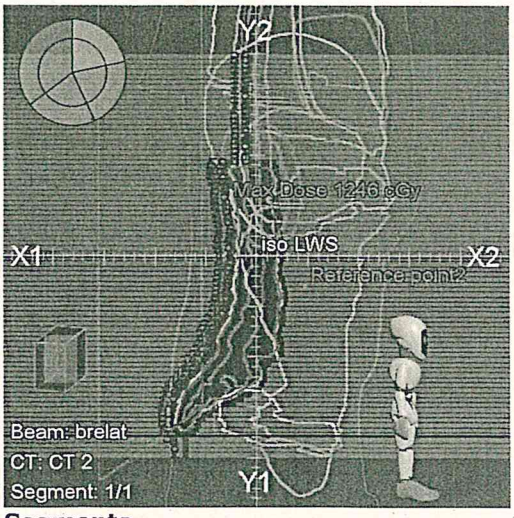
External — This ROI is set as the external ROI that defines the outer border of the patient

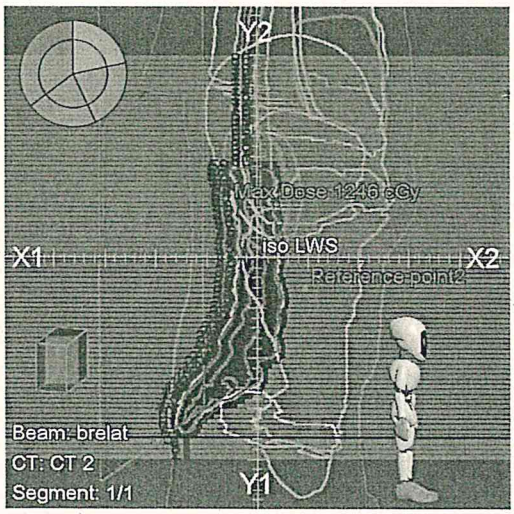
Beam data

Beam name	brelat
Beam number	1
Beam description	
Patient coordinate system	IEC 61217
Isocenter [cm]	boost 1 - Right-Left: 0.18 Inf-Sup: -56.10 Post-Ant: -4.62
Gantry angle [deg]	278.8
Collimator angle [deg]	0.0
Couch angle [deg]	0.0
Treatment technique	3D-CRT
Number of fractions	6
Beam MU/fraction	64.01
Total beam MU	384.07
Beam weight [%]	21.5
Number of segments	1
Dose calculation algorithm	Collapsed Cone, Version 3.3 (Not current version)
Treatment unit	SynBz-3160
Commission time	18 May 2016, 15:07:11 (hr:min:sec)
Energy [MV]	15.00
Jaw max aperture width [cm]	-
X1 [cm]	-
X2 [cm]	-
Jaw max aperture height [cm]	17.77
Y1 [cm]	-17.87
Y2 [cm]	-0.10
Source to skin distance (isocenter) [cm]	84.47
Source to surface distance (isocenter) [cm]	84.47
Bolus data	
No bolus	

Beam dose specification point

Coordinates [cm]	Isocenter
Dose per fraction [cGy]	23.4
Physical depth [cm]	15.53
Water equivalent depth [cm]	15.40
Source to skin distance [cm]	84.47
Source to surface distance [cm]	84.47





Segments

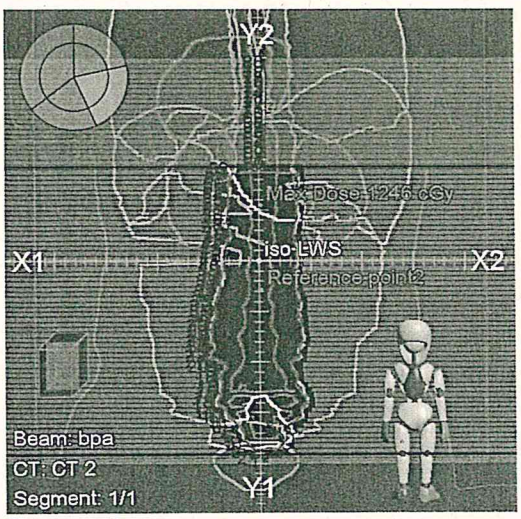
Seg. No.	MU/Fraction	Jaw positions [cm]	
		Y1	Y2
1	64.01	-17.87	-0.10

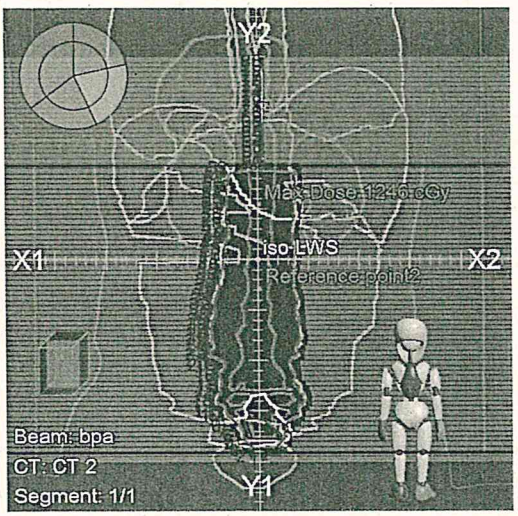
Beam data

Beam name	bpa
Beam number	2
Beam description	
Patient coordinate system	IEC 61217
Isocenter [cm]	boost 1 - Right-Left: 0.18 Inf-Sup: -56.10 Post-Ant: -4.62
Gantry angle [deg]	180.0
Collimator angle [deg]	0.0
Couch angle [deg]	0.0
Treatment technique	3D-CRT
Number of fractions	6
Beam MU/fraction	64.01
Total beam MU	384.07
Beam weight [%]	21.5
Number of segments	1
Dose calculation algorithm	Collapsed Cone, Version 3.3 (Not current version)
Treatment unit	SynBz-3160
Commission time	18 May 2016, 15:07:11 (hr:min:sec)
Energy [MV]	15.00
Jaw max aperture width [cm]	-
X1 [cm]	-
X2 [cm]	-
Jaw max aperture height [cm]	28.46
Y1 [cm]	-19.18
Y2 [cm]	9.28
Source to skin distance (isocenter) [cm]	95.14
Source to surface distance (isocenter) [cm]	90.17
Bolus data	
No bolus	

Beam dose specification point

Coordinates [cm]	Isocenter
Dose per fraction [cGy]	71.2
Physical depth [cm]	9.83
Water equivalent depth [cm]	6.03
Source to skin distance [cm]	95.14
Source to surface distance [cm]	90.17





Segments

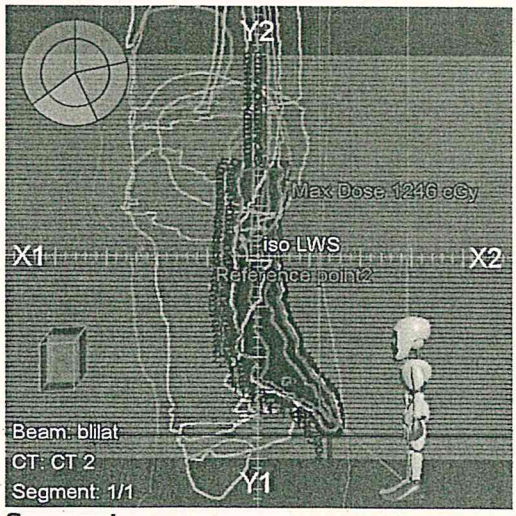
Seg. No.	MU/Fraction	Jaw positions [cm] Y1	Y2
1	64.01	-19.18	9.28

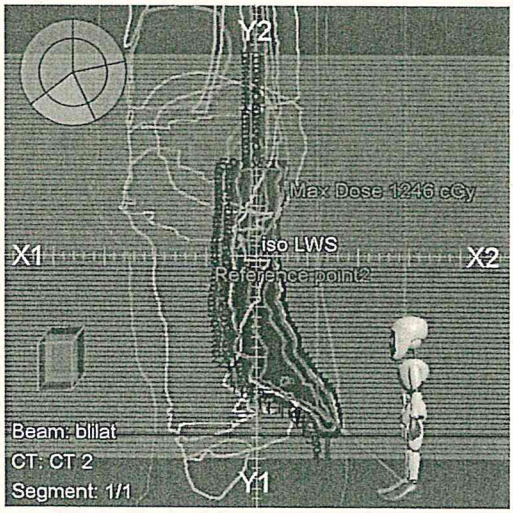
Beam data

Beam name	blilat
Beam number	3
Beam description	
Patient coordinate system	IEC 61217
Isocenter [cm]	boost 1 - Right-Left: 0.18 Inf-Sup: -56.10 Post-Ant: -4.62
Gantry angle [deg]	83.5
Collimator angle [deg]	0.0
Couch angle [deg]	0.0
Treatment technique	3D-CRT
Number of fractions	6
Beam MU/fraction	64.01
Total beam MU	384.07
Beam weight [%]	21.5
Number of segments	1
Dose calculation algorithm	Collapsed Cone, Version 3.3 (Not current version)
Treatment unit	SynBz-3160
Commission time	18 May 2016, 15:07:11 (hr:min:sec)
Energy [MV]	15.00
Jaw max aperture width [cm]	-
X1 [cm]	-
X2 [cm]	-
Jaw max aperture height [cm]	17.76
Y1 [cm]	-17.76
Y2 [cm]	0.00
Source to skin distance (isocenter) [cm]	84.65
Source to surface distance (isocenter) [cm]	84.65
Bolus data	
No bolus	

Beam dose specification point

Coordinates [cm]	Isocenter
Dose per fraction [cGy]	30.4
Physical depth [cm]	15.35
Water equivalent depth [cm]	15.37
Source to skin distance [cm]	84.65
Source to surface distance [cm]	84.65





Segments

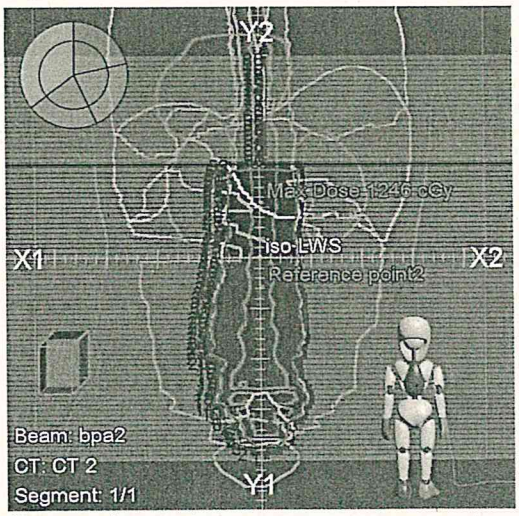
Seg. No.	MU/Fraction	Jaw positions [cm] Y1	Y2
1	64.01	-17.76	0.00

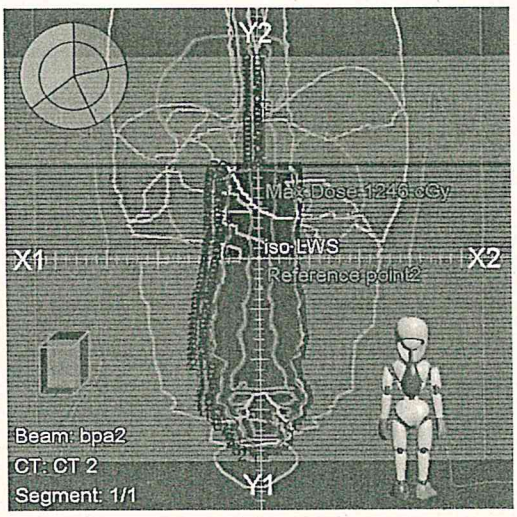
Beam data

Beam name	bpa2
Beam number	4
Beam description	
Patient coordinate system	IEC 61217
Isocenter [cm]	boost 1 - Right-Left: 0.18 Inf-Sup: -56.10 Post-Ant: -4.62
Gantry angle [deg]	180.0
Collimator angle [deg]	0.0
Couch angle [deg]	0.0
Treatment technique	3D-CRT
Number of fractions	6
Beam MU/fraction	105.06
Total beam MU	630.37
Beam weight [%]	35.4
Number of segments	1
Dose calculation algorithm	Collapsed Cone, Version 3.3 (Not current version)
Treatment unit	SynBz-3160
Commission time	18 May 2016, 15:07:11 (hr:min:sec)
Energy [MV]	15.00
Jaw max aperture width [cm]	-
X1 [cm]	-
X2 [cm]	-
Jaw max aperture height [cm]	9.28
Y1 [cm]	0.00
Y2 [cm]	9.28
Source to skin distance (isocenter) [cm]	95.14
Source to surface distance (isocenter) [cm]	90.17
Bolus data	
No bolus	

Beam dose specification point

Coordinates [cm]	Isocenter
Dose per fraction [cGy]	65.4
Physical depth [cm]	9.83
Water equivalent depth [cm]	6.03
Source to skin distance [cm]	95.14
Source to surface distance [cm]	90.17





Segments

Seg. No.	MU/Fraction	Jaw positions [cm] Y1	Y2
1	105.06	0.00	9.28