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Patient Name Patient 15	Date/Time: Nov 30 2009	Revision: R01.P01.D01	Page: 1 of 1
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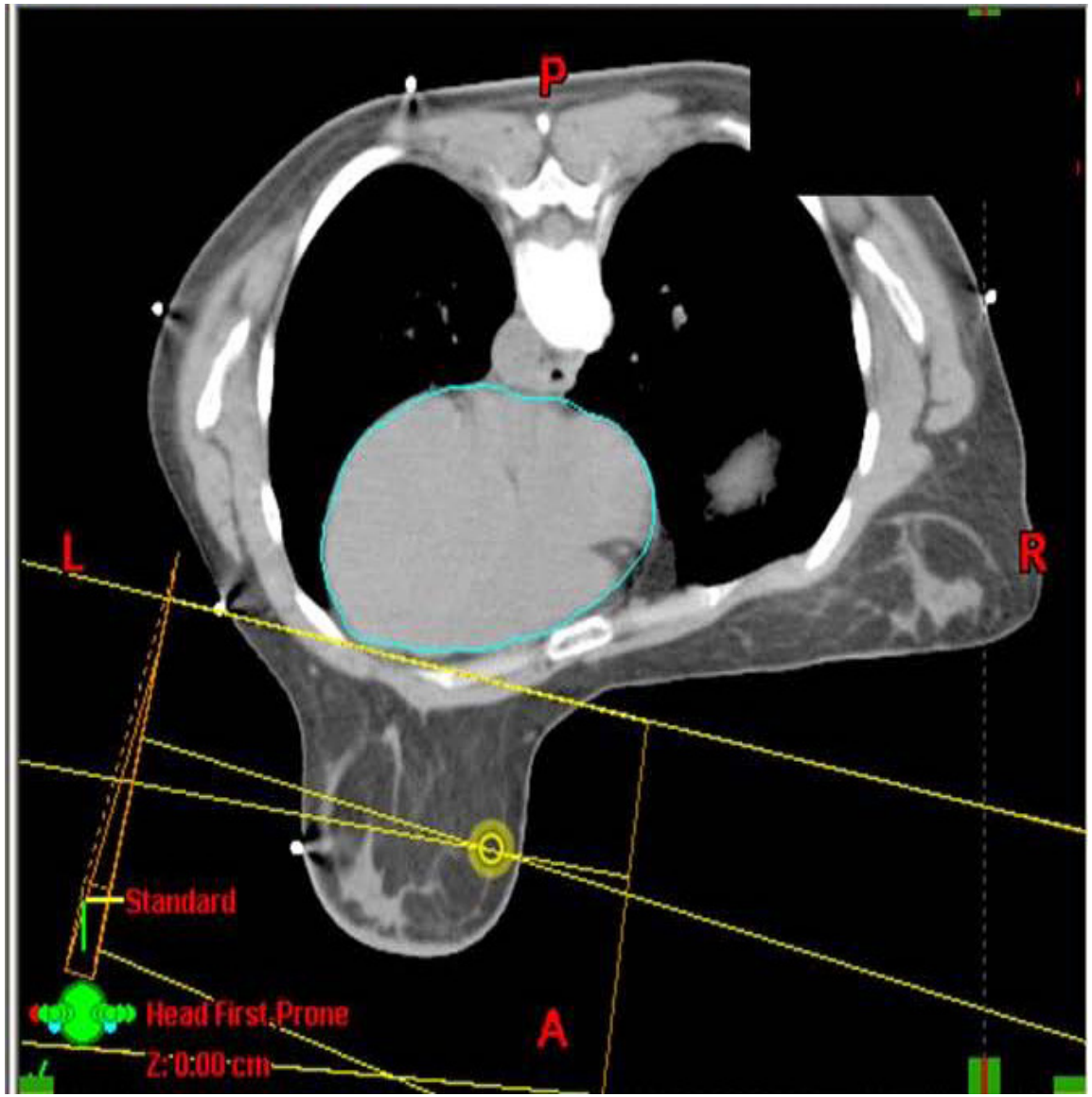
Plan Name: Ca breat	Physician/Physicist: /_mariam	Institution: Radiation and Isotopes Center Khartoum	



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Patient Name Patient 15	Date/Time: Nov 30 2009	Revision: R01.P01.D01	Page: 1 of 1
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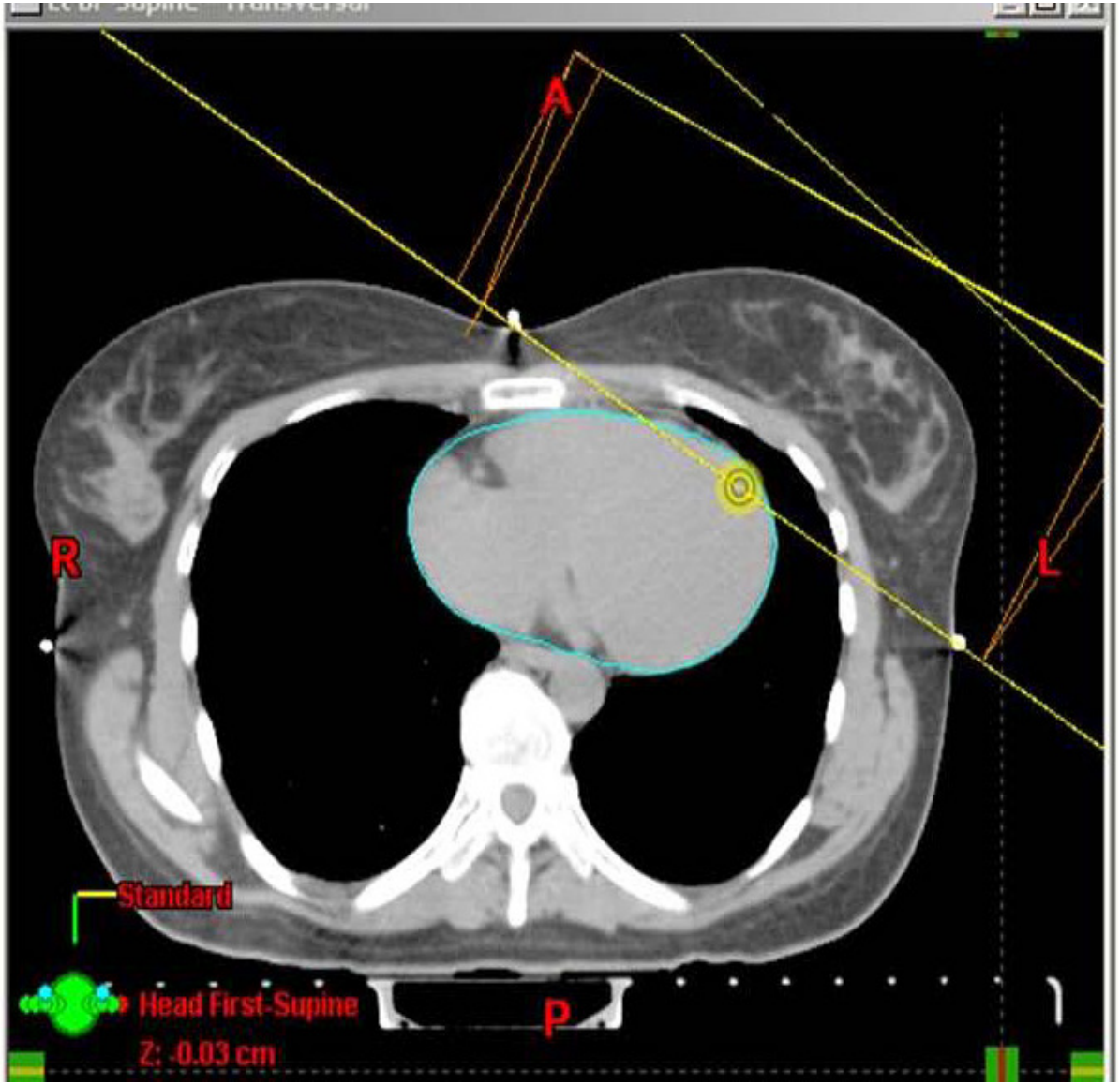

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Pinnacle³

Patient Name Patient 15	Date/Time: Nov 30 2009	Revision: R01.P01.D01	Page: 1 of 1
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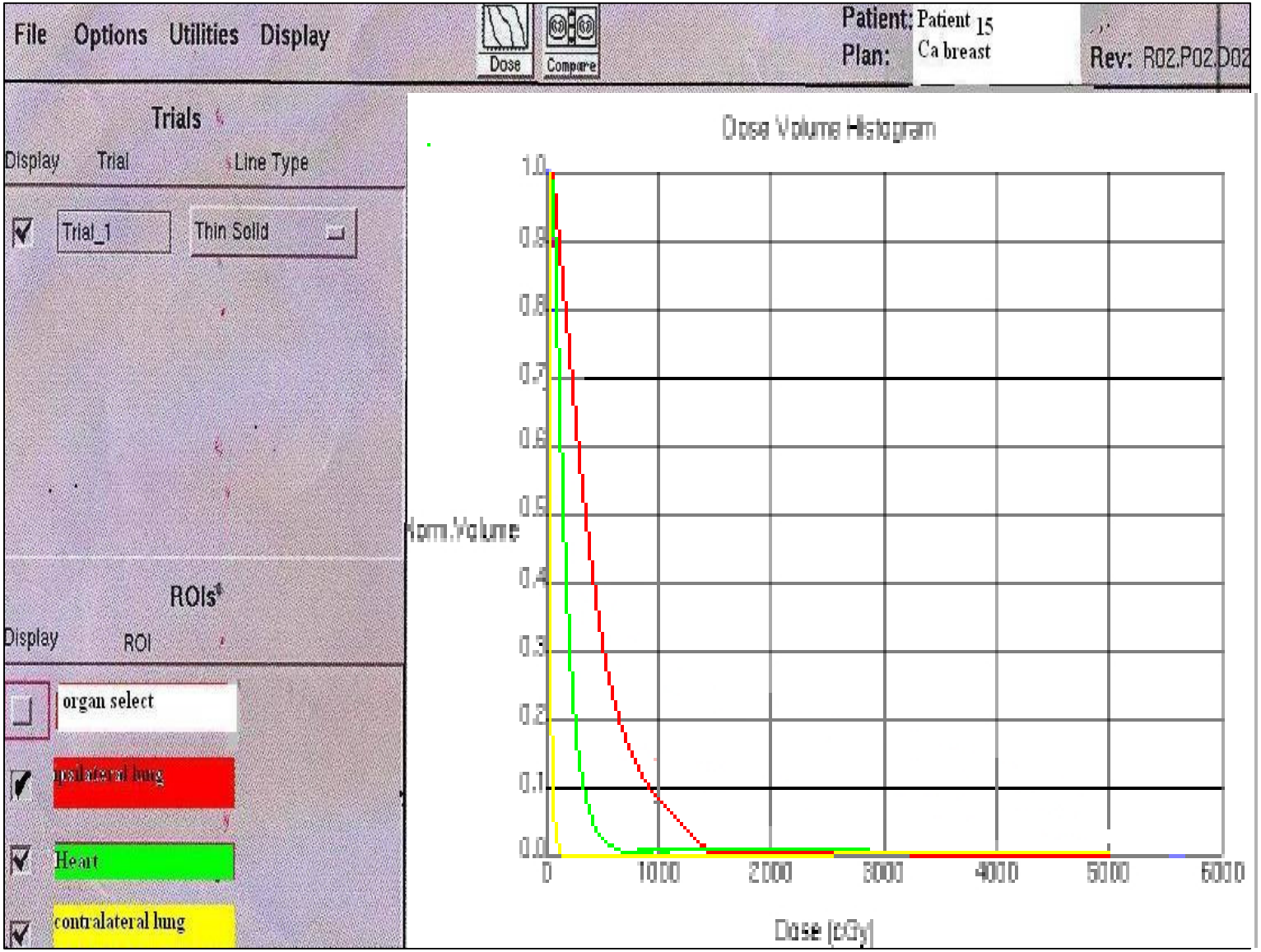

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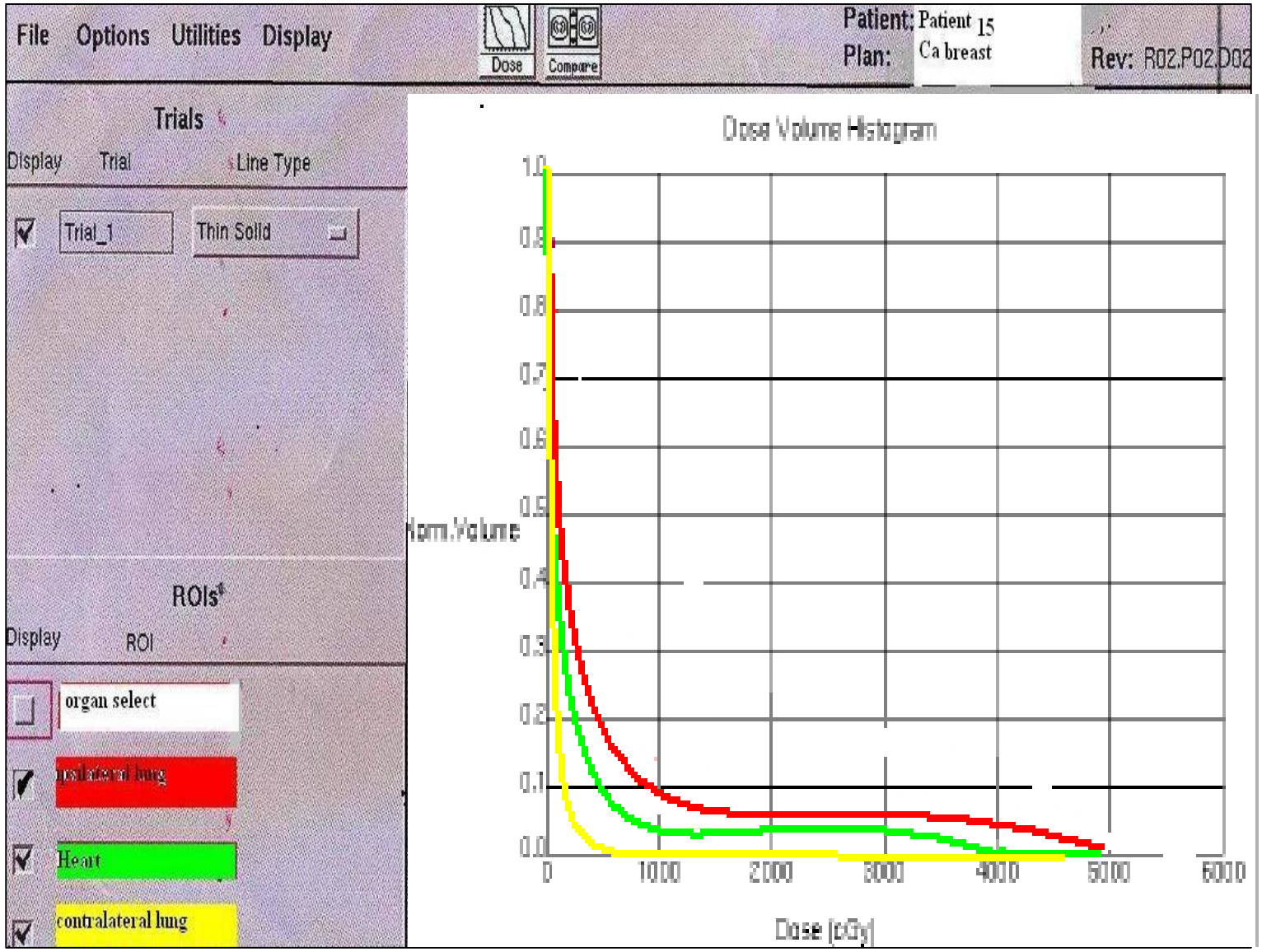

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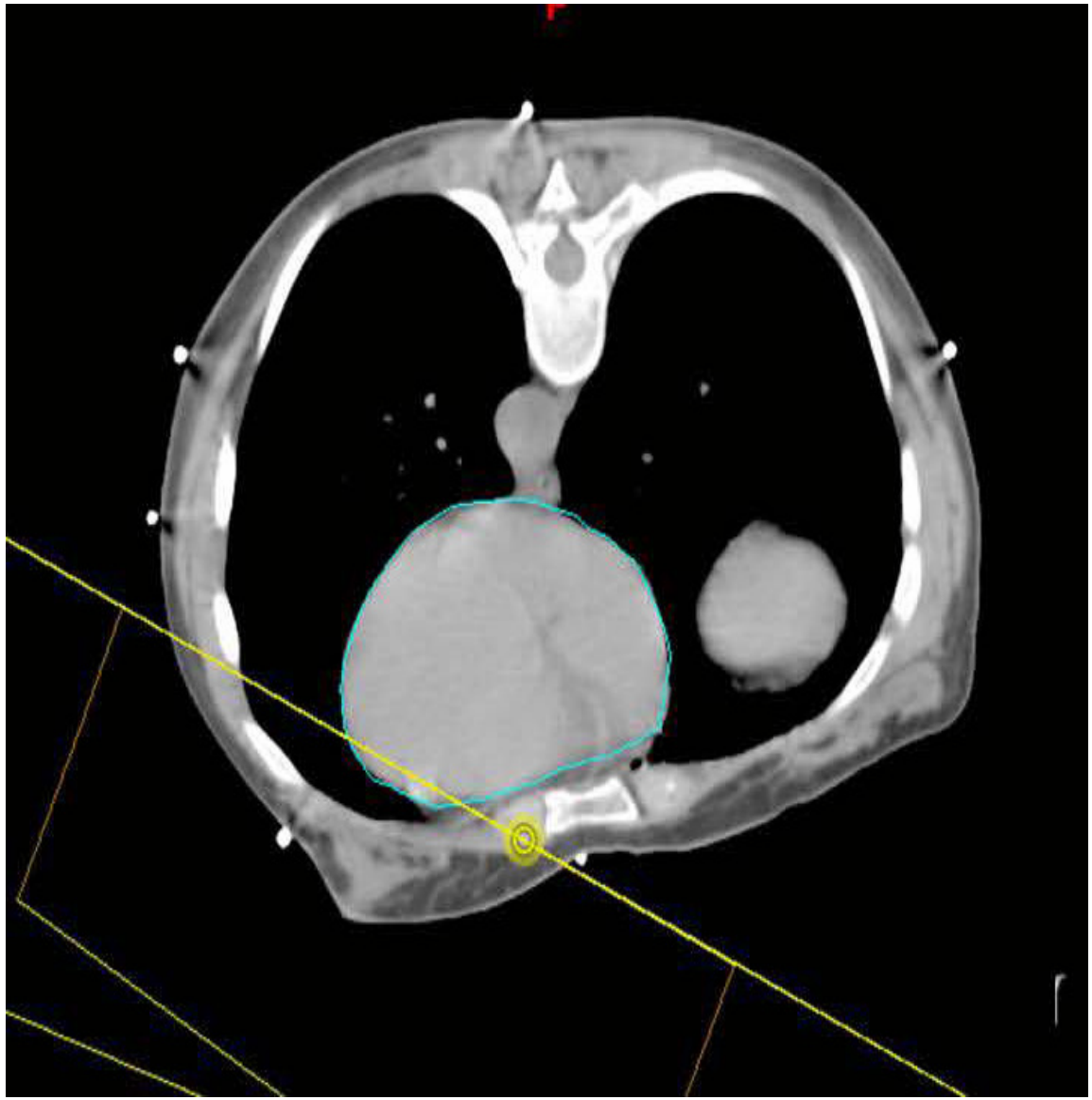

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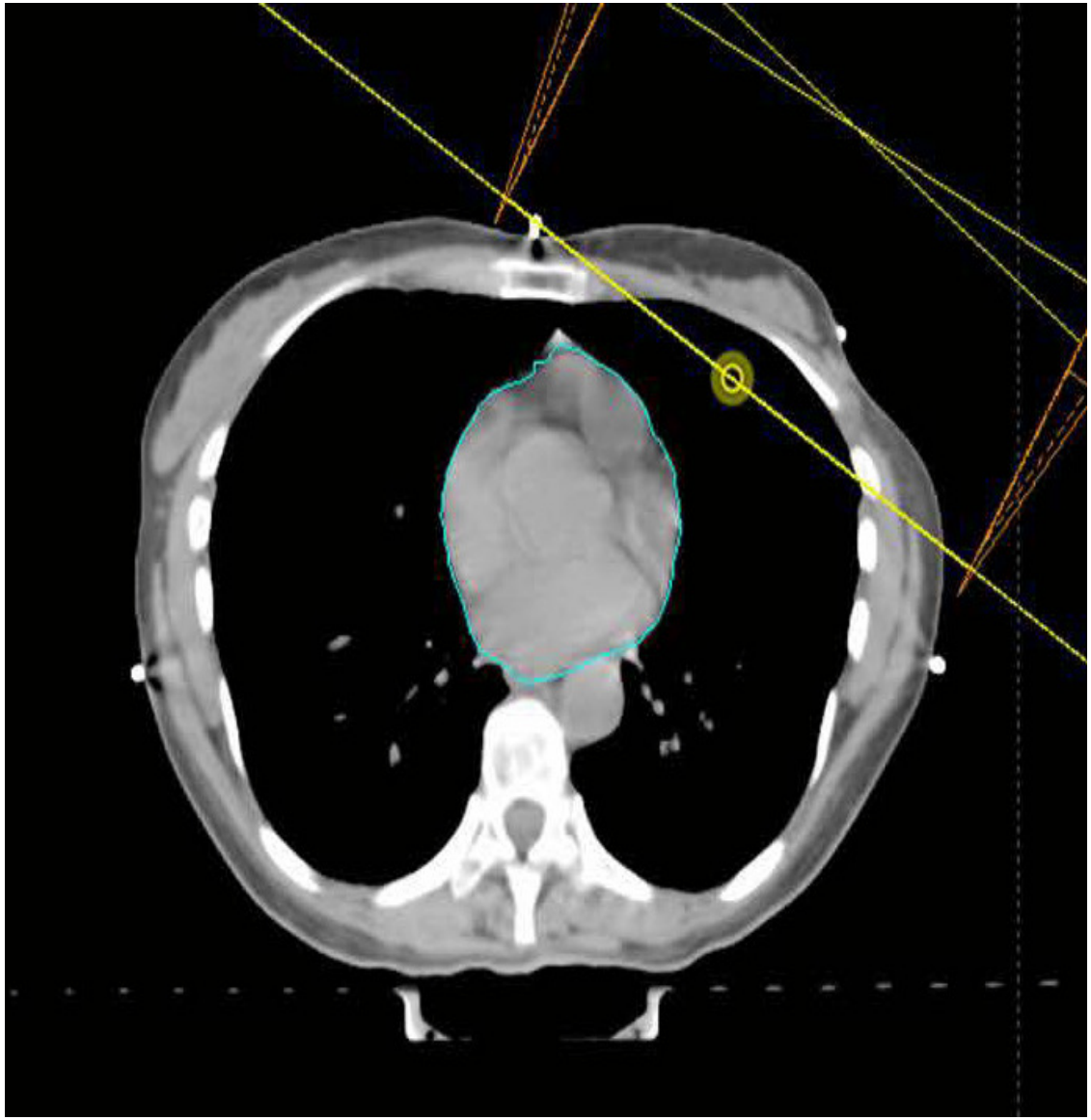

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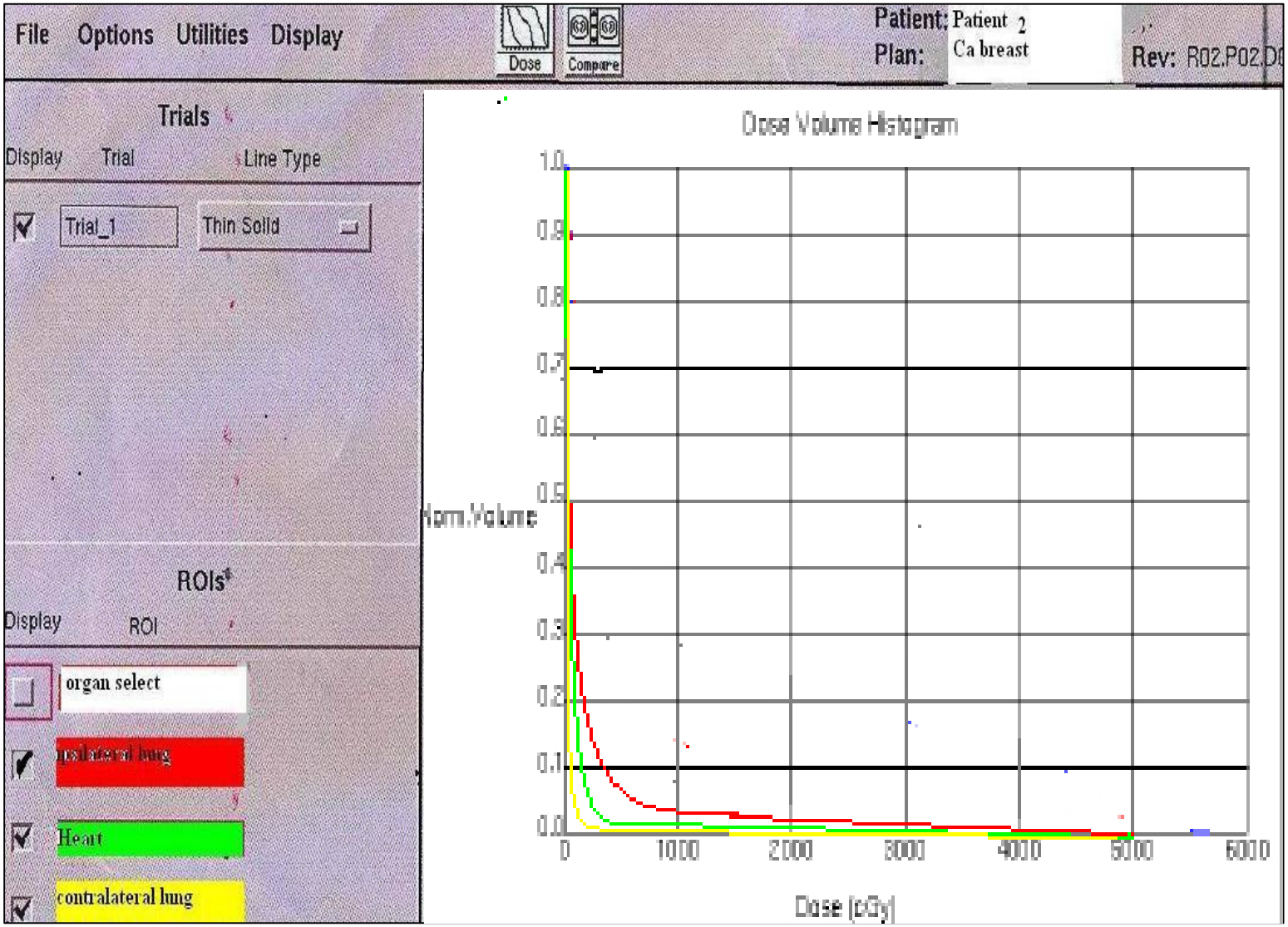

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Patient Name Patient 2	Date/Time: Nov 10 2009	Revision: R01.P01.D01	Page: 1 of 1
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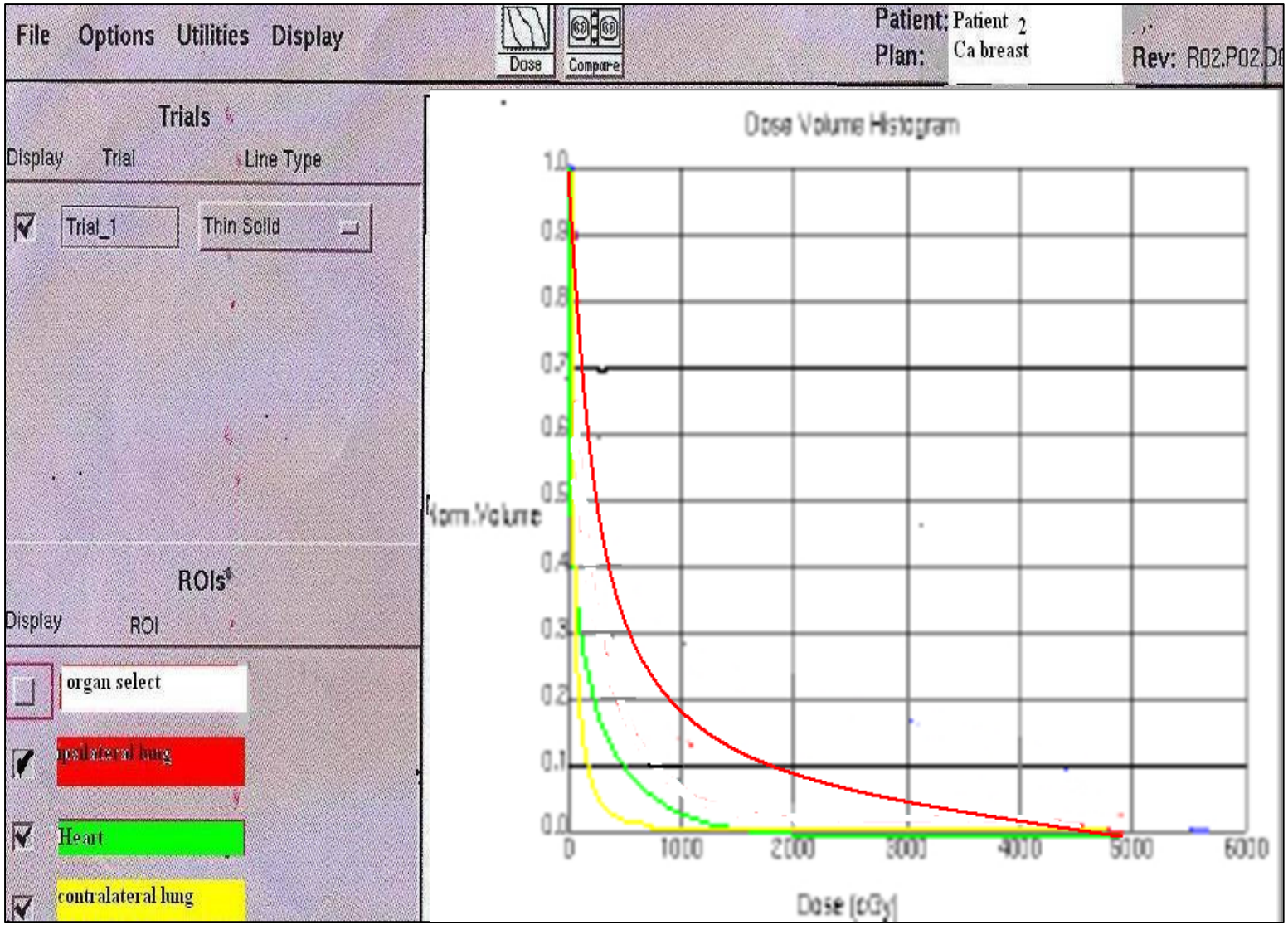

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Plan Name: Ca breat	Physician/Physicist: /_mariam	Institution: Radiation and Isotopes Center Khartoum	

Pinnacle³

Patient Name Patient 10	Date/Time: Nov 22 2009	Revision: R01.P01.D01	Page: 1 of 1
Patient ID:	Comment:	Planner:	Scaling: Fill Page
Plan Name: Ca breat	Physician/Physicist: /_mariam	Institution: Radiation and Isotopes Center Khartoum	

Pinnacle³

Patient Name Patient 10	Date/Time: Nov 22 2009	Revision: R01.P01.D01	Page: 1 of 1
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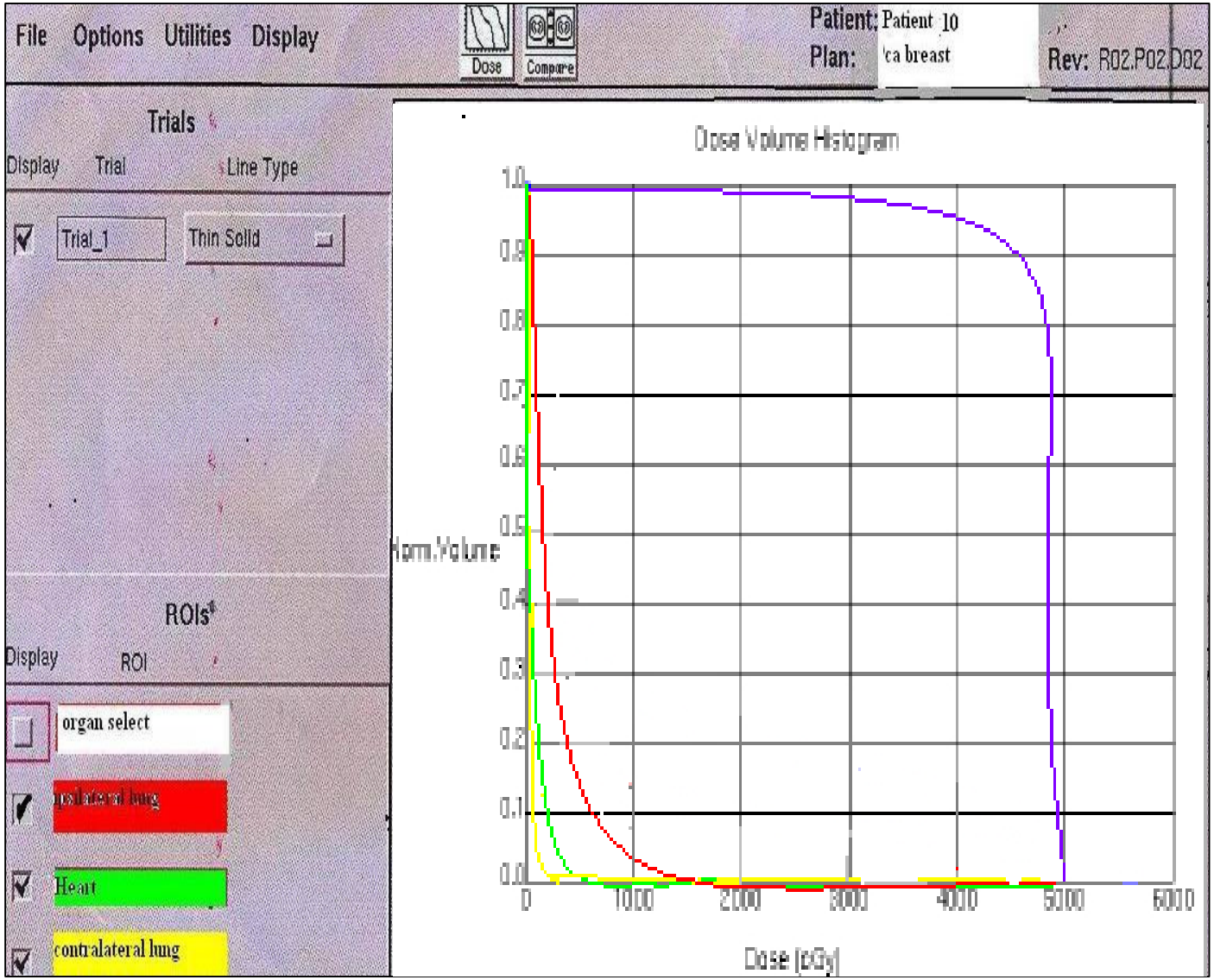

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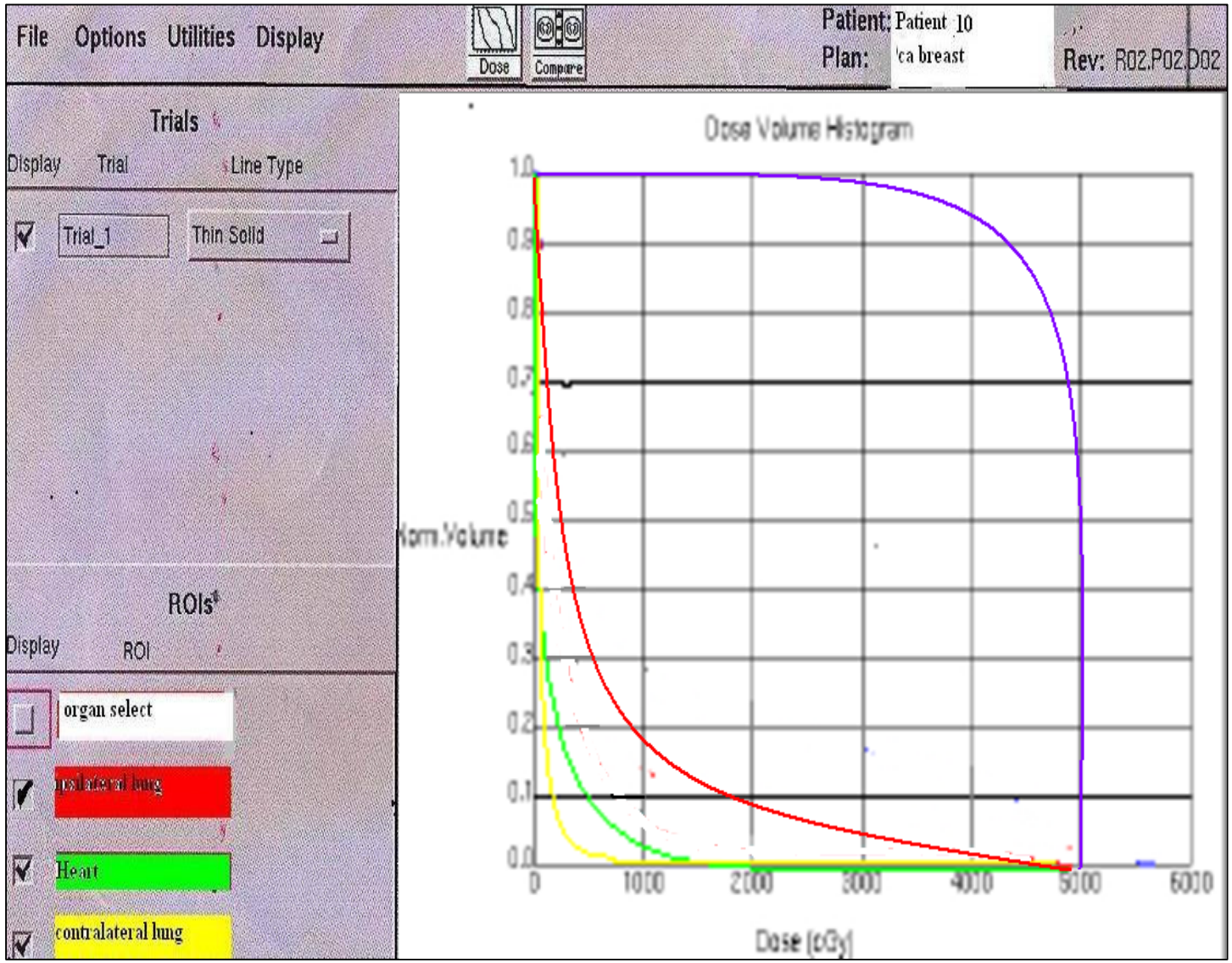

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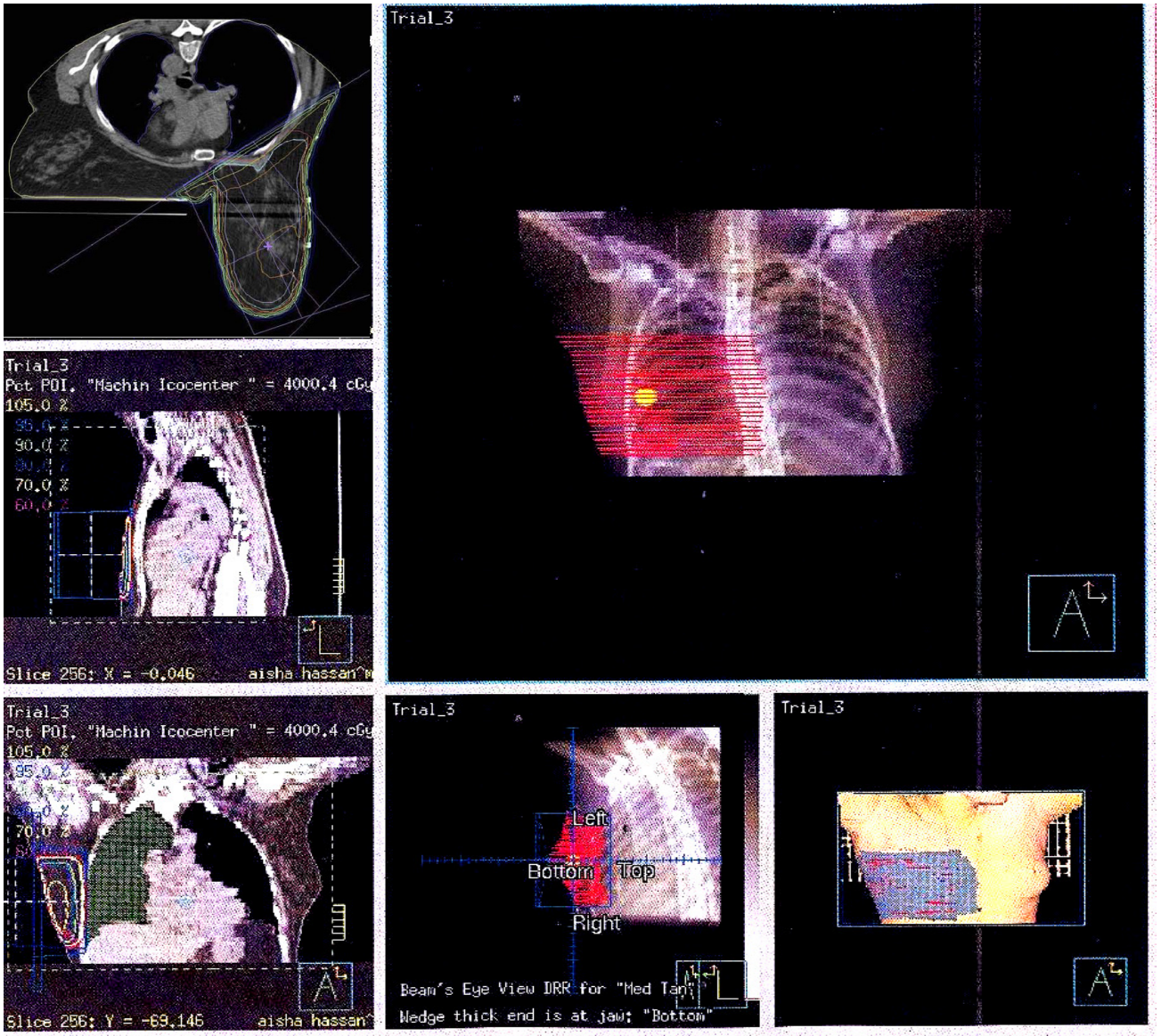

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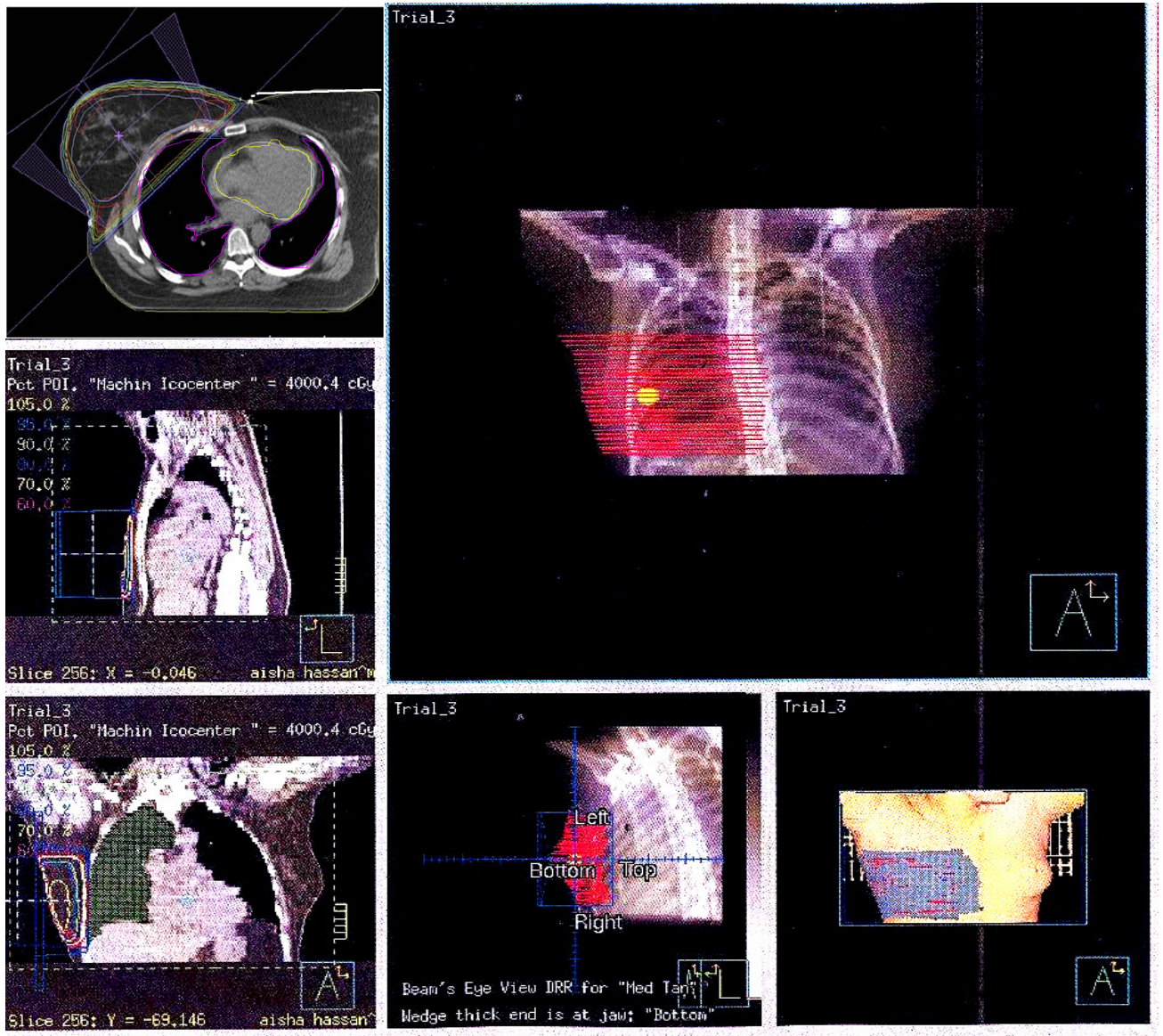

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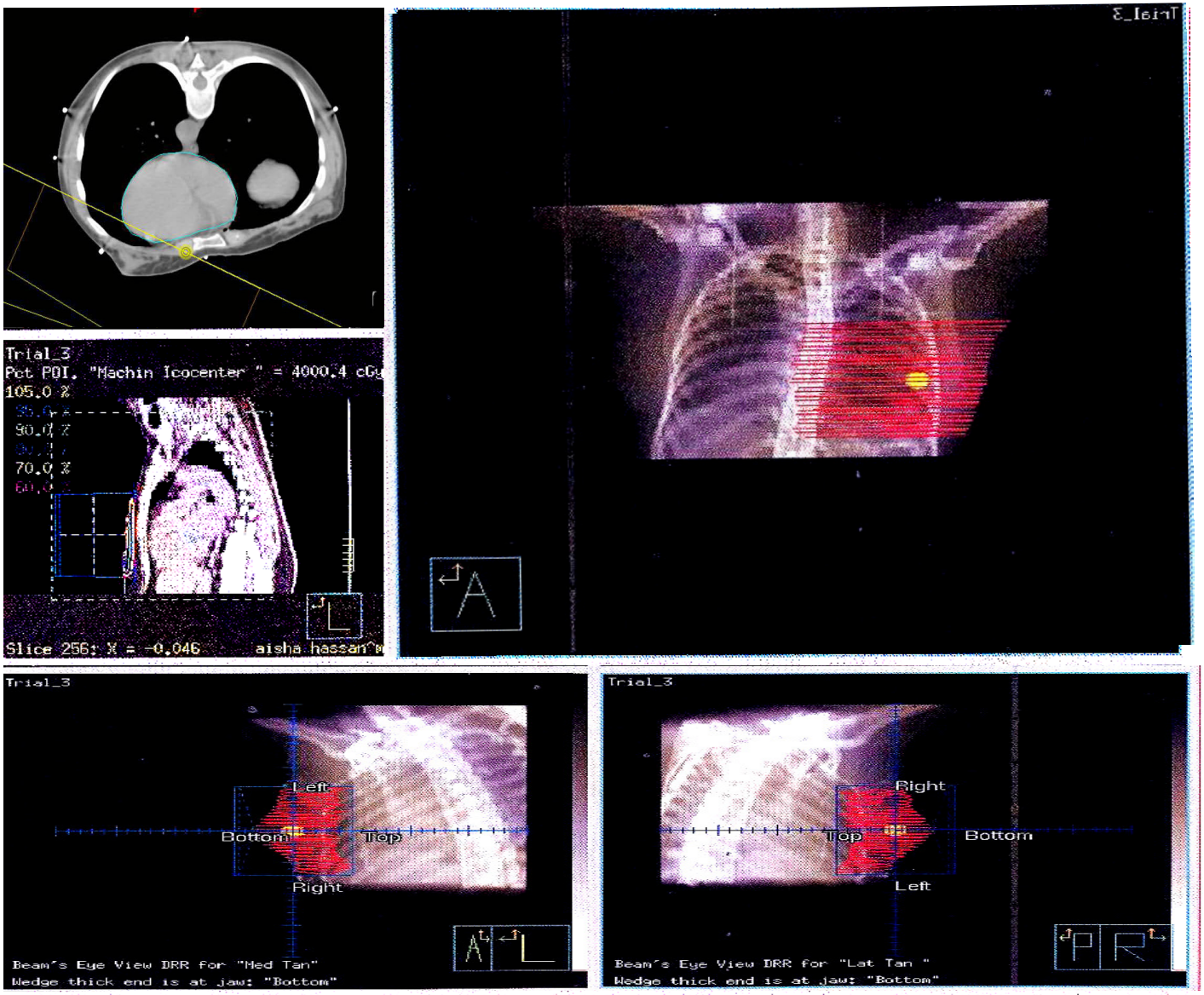

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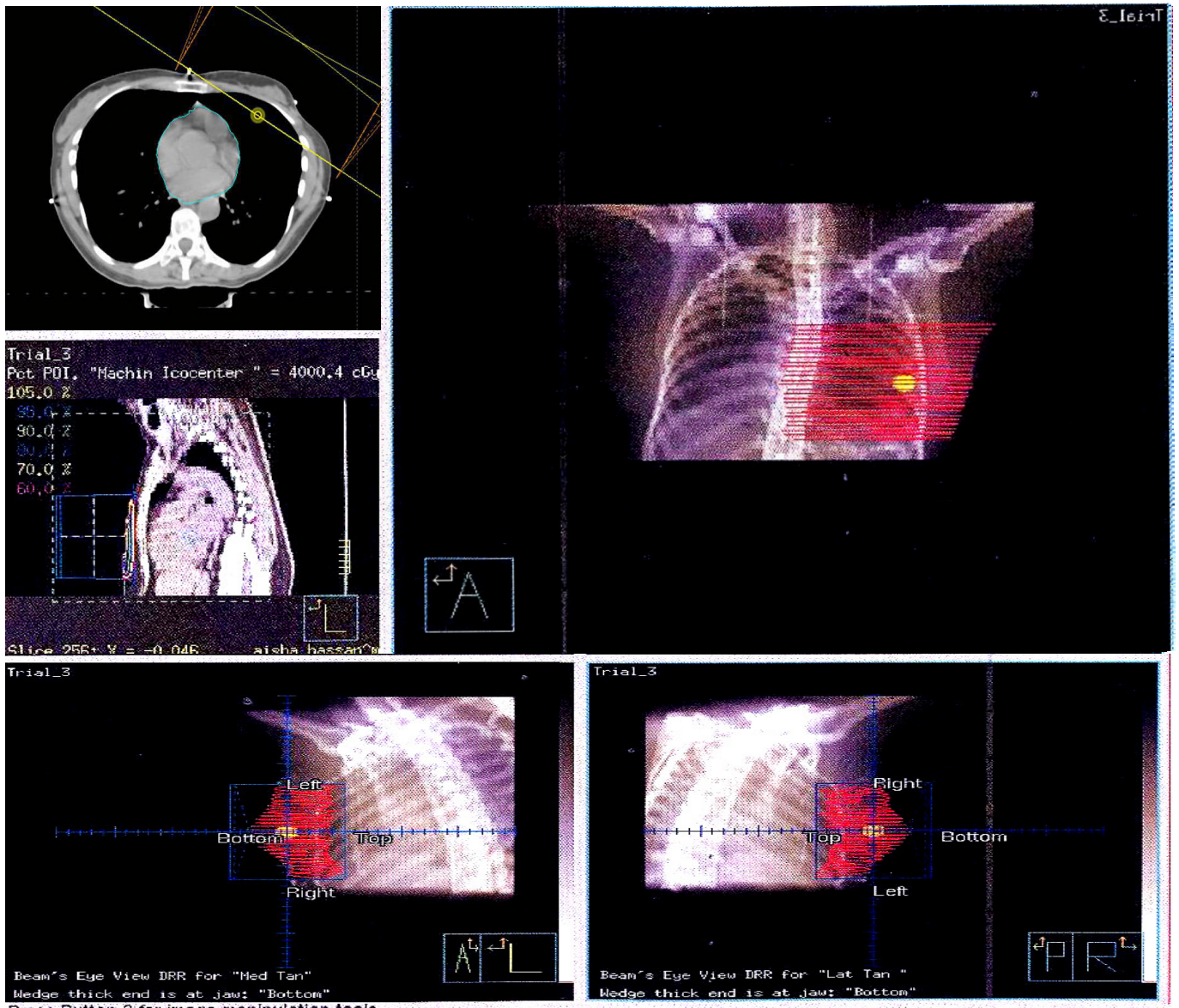

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Pinnacle³

Patient Name Patient 15	Date/Time: Nov 30 2009	Revision: R01.P01.D01	Page: 1 of 1
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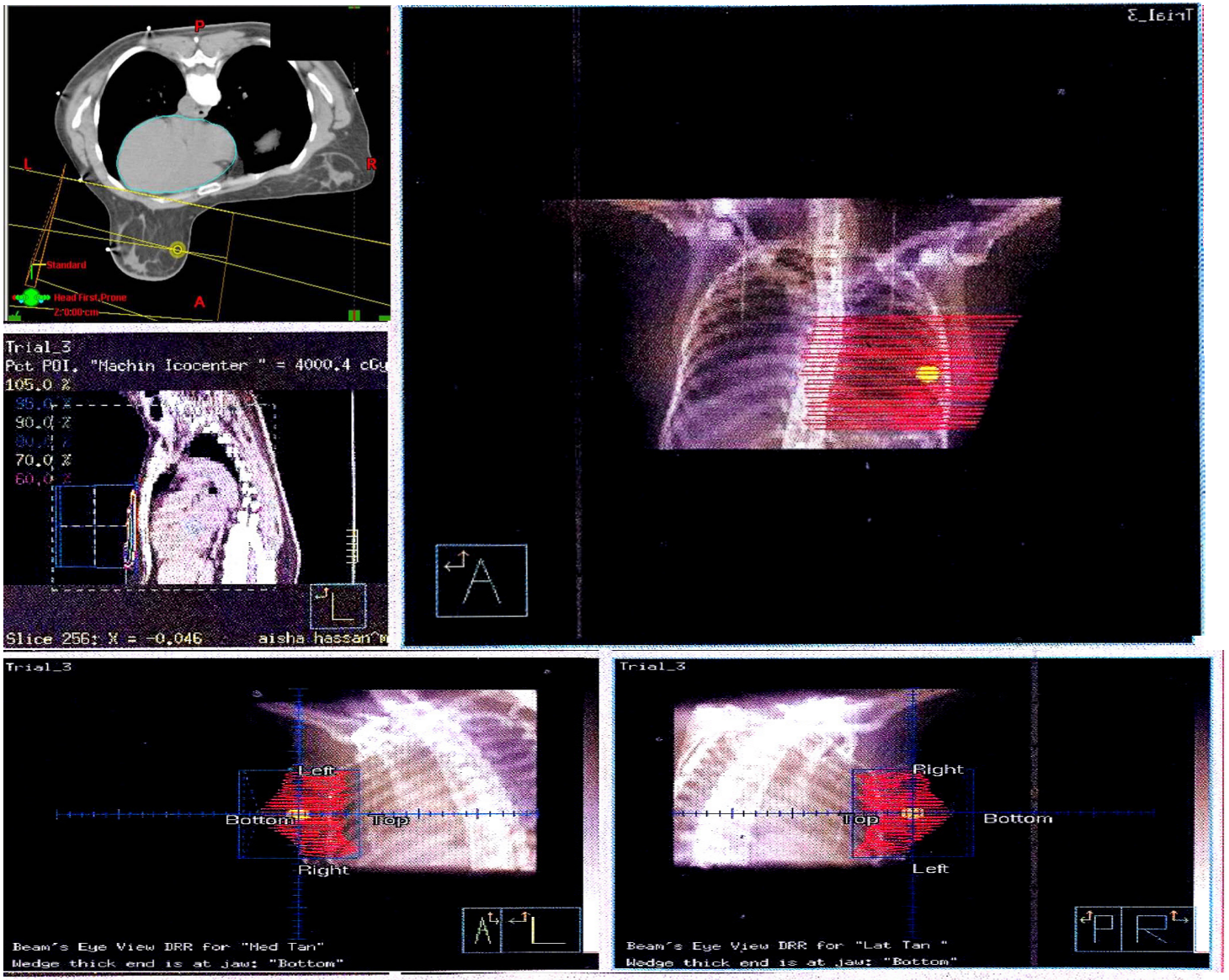

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Patient Name Patient 15	Date/Time: Nov 30 2009	Revision: R01.P01.D01	Page: 1 of 1
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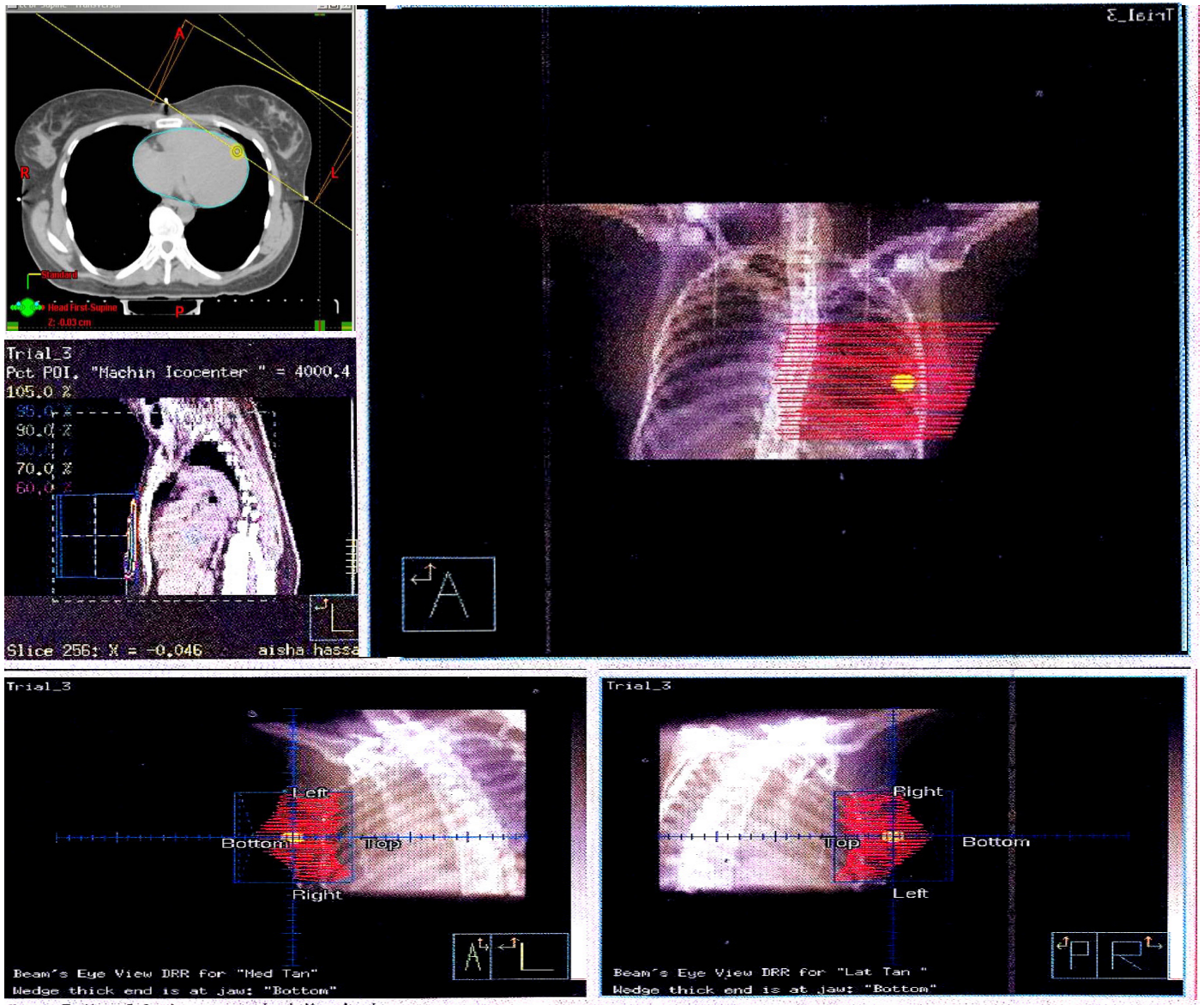

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Orbital Therapy

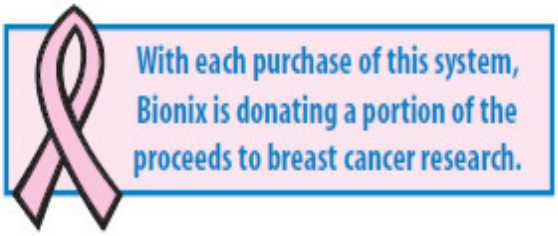
Is a medical device company dedicated to the development of products for the treatment of breast cancer. Early detection is leading to longer survival and is shifting focus to long term effects associated with conventional treatment techniques. Medical practitioners have initiated protocols to find a way to better isolate the breast tissue from the rest of the body to reduce these long-term complications as well as deliver a higher, more precise treatment to the tumor bed, and in less time. Our products are designed from top quality materials to offer superior performance, and address both current and future needs of the clinician.

Figure B-4 Orbital Therapy Machine

Prone position breast radiation therapy offers the patient significant advantages as compared to conventional treatments. Orbital Therapy's approach demonstrates continued advancement of this technique and brings additional benefits in the treatment of this prevalent disease in women".

Prone Breast System

The Bionix Prone Breast System is one of the most popular products in the line of comfortable patient positioning devices. The Prone Breast System features a foam cushion set designed to attach to the T-Form Multi-Treatment Base, which can also used with the Pelvis/Belly PLUS System cushion set.



Prone Breast System shown with indexing face cushion.

Features:

- Utilizes prone positioning for breast treatment to deliver less irradiation to the lung and cardiac tissue.
- Massage-style face cushion supports the head with openings for air flow.
- Reversible, carbon fiber breast bridge holds the contralateral breast comfortably out of the treatment field.
- New hand rest with multiple indexing hand positions.
- Comfortable foam design cradles the patient during treatment cycle.
- Height of 23cm enables system to fit through most CT's.
- Lightweight design; total weight (including Multi-Treatment Base) is 18 pounds.

Figure B-5 Prone breast system

Prone Breast System Accessories

RT-6243 15° Contralateral Breast Wedge Insert

RT-8000 Storage Cart

RT-6125 Box of 50 disposable face covers.

SecureFit™ Bars

SecureFit Bars are also available in or order to securely attach

Figure B-6 Prone breast system accessories

Prone Breast Patient Positioning

PRONE BREAST, this was one of the hottest topics at this years AAMD, AAPM, and ASTRO meetings. Prone Breast Irradiation is growing in acceptance as an alternative to treating the breast in the Supine position. The benefits of this technique have been well documented and include:

- A displacement of the lumpectomy cavity away from chest wall, hart and lungs (Wazer, 2006)
- Reduction in cardiac systole and respiratory movement. (Wazer, 2006)
- Enhanced cosmetic results with less soumess/ skin reaction.
- Optimized daily reproducibility (Wazer, 2006)

Patients who benefit from the prone technique are those who can tolerate the prone position (Wazer, 2006). Using a specially designed dual density memory foam called PatientCare™ memory foam a system has been designed that will enable your center to implement Prone Breast in an easy to use customizable fashion that puts patient comfort first. Without compromising accuracy, reproduce-ability and most of all treatment access. If you are interested in an onsite discussion of Prone Breast or an educational DVD about the Prone Breast Technique email info@cdrsys.ca

CDR Systems Prone Breast Positioning

focus on comfort

Features include:

- Indexable carbon fiber contra-lateral breast support adjustable from 18cm to 28cm.
- Small and large indexable contra-lateral breast pad.
- Couch indexing for both front and rear sections independently.
- Indexable MAXGrip™ handles.
- Dual density PatientCare™ memory foam.
- Low density construction
- Can be used as a belly-board by reversing lower section (PB06 model only).
- Built-in side handles on all sides.
- Light weight.
- Large bore CT or small bore CT versions available.

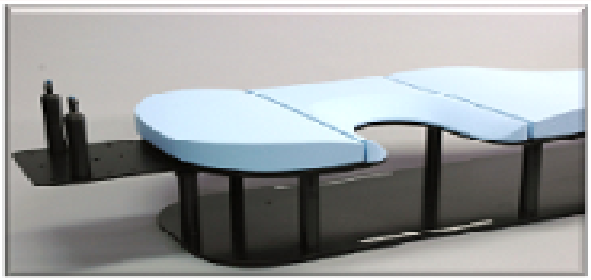
Product ID# PB06-S
More treatment access

CDR SYSTEMS
www.cdrsys.ca
Immobilization solutions for Radiation Oncology

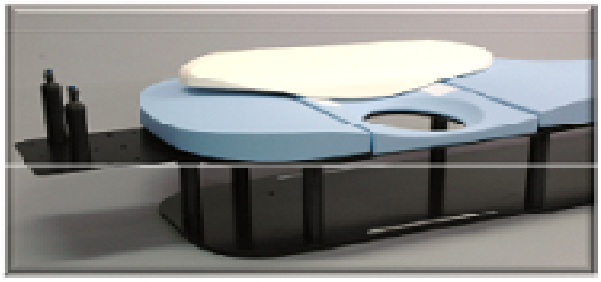
Product ID# PB06
Maximized patient support

For more information or to arrange an onsite demo, give us a call or drop an email
PH: 403.850.7035 FX: 403.271.0201 EM: info@cdrsys.ca WEB: www.cdrsys.ca

Figure B-7 Prone breast patient positioning



"U" Configuration



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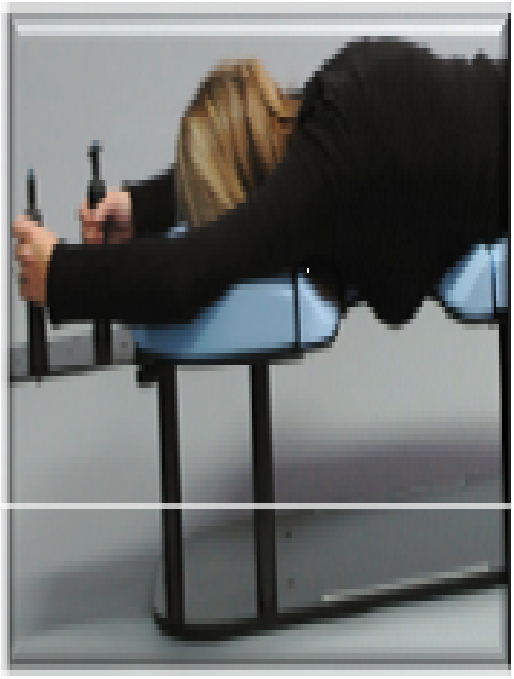


No	Tumor	Frequency	Percentage
1	50-BREAST	6622	17.2
2	42-BLOOD, SPLEEN	3626	9.4
3	77-LYMPH NODES	2985	7.8
4	15-ESOPHAGUS	2034	5.3
5	53-CERVIX UTERI	1838	4.8
6	61-PROSTATE	1502	3.9
7	56-OVARY	1316	3.4
8	11-NASOPHARYNX	1140	3
9	67-BLADDER	979	2.5
10	16-STOMACH	860	2.2
		22902	

Table B-1 shows the most common cancer in RICK 2000-2009

Year	Frequency	Percentage
2000	443	6.7
2001	505	7.6
2002	543	8.2
2003	610	9.2
2004	675	10.2
2005	616	9.3
2006	712	10.8
2007	788	11.9
2008	882	13.3
2009	848	12.8
Total	6622	100

Table B-2 shows the breast cancer in RICK 2000-2009

PATIENT NUMBER	Mean radiation dose (covering isodose)		
	Organs	SUPINE	PRONE
Patient 1	Ipsilateral lung	7.8	2.8
	Contralateral lung	0.8	0.5
	Heart	5.5	4.8
0Patient 2	Ipsilateral lung	7	1.3
	Contralateral lung	0.8	0.3
	Heart	4.9	3.2
Patient3	Ipsilateral lung	5.9	0.7
	Contralateral lung	0.6	0.1
	Heart	6.3	4.4
Patient 4	Ipsilateral lung	5.3	1.1
	Contralateral lung	1.1	0.4
	Heart	5.0	4.2
Patient 5	Ipsilateral lung	8.0	1.0
	Contralateral lung	2.1	0.1
	Heart	5.4	2.7
Patient 6	Ipsilateral lung	6.6	1.2
	Contralateral lung	0.9	0.6
	Heart	6.0	4.0
Patient 7	Ipsilateral lung	5.8	0.8
	Contralateral lung	0.7	0.2
	Heart	4.6	2.8

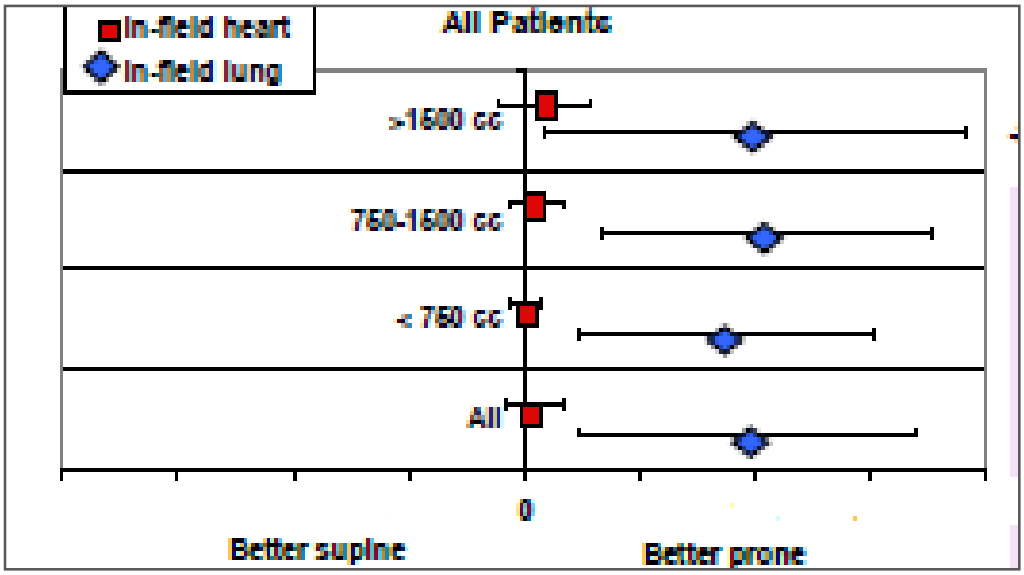
Patient 8	Ipsilateral lung	8.8	0.6
	Contralateral lung	0.5	0.3
	Heart	4.5	2.7
Patient 9	Ipsilateral lung	14.2	2.0
	Contralateral lung	1.2	0.2
	Heart	6.8	4.1
Patient 10	Ipsilateral lung	14.0	2.5
	Contralateral lung	1.6	0.1
	Heart	4.2	3.8

Table B-3 shows the group of patient (10) who planning in left breast

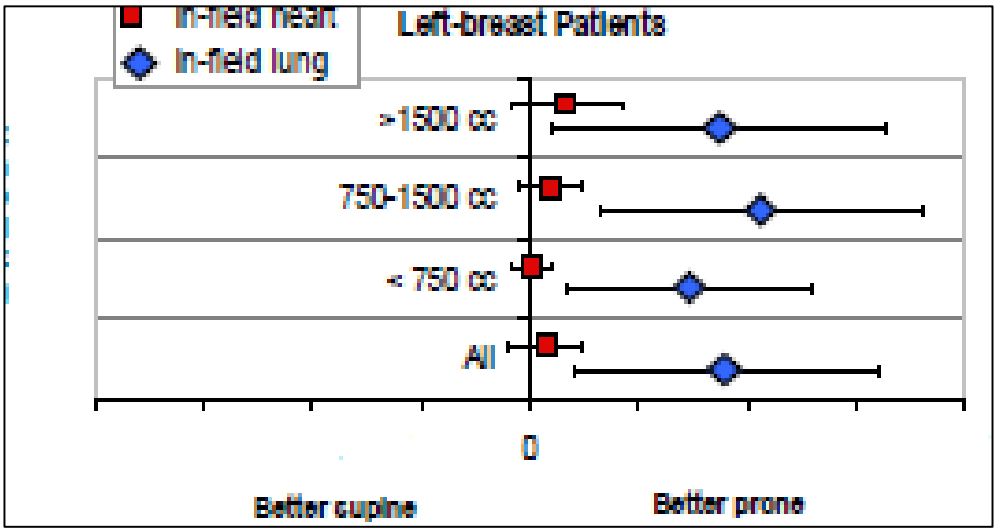
patient	Mean radiation dose (covering isodose)		
	organs	SUPINE	PRONE
Patient 1	Ipsilateral lung	7.8	3.2
	Contralateral lung	1.3	0.4
	Heart	3.9	1.7
Patient 2	Ipsilateral lung	5.5	0.9
	Contralateral lung	0.4	0.2
	Heart	2.1	0.7
Patient3	Ipsilateral lung	5.7	0.5
	Contralateral lung	1.0	0.1
	Heart	4.2	2.2
Patient 4	Ipsilateral lung	10.2	0.9
	Contralateral lung	1.5	0.6
	Heart	4.0	1.1
Patient 5	Ipsilateral lung	12.8	1.3
	Contralateral lung	1.7	0.1
	Heart	3.6	2.0

Table B-4 shows the group of patient (5) who planning in left breast

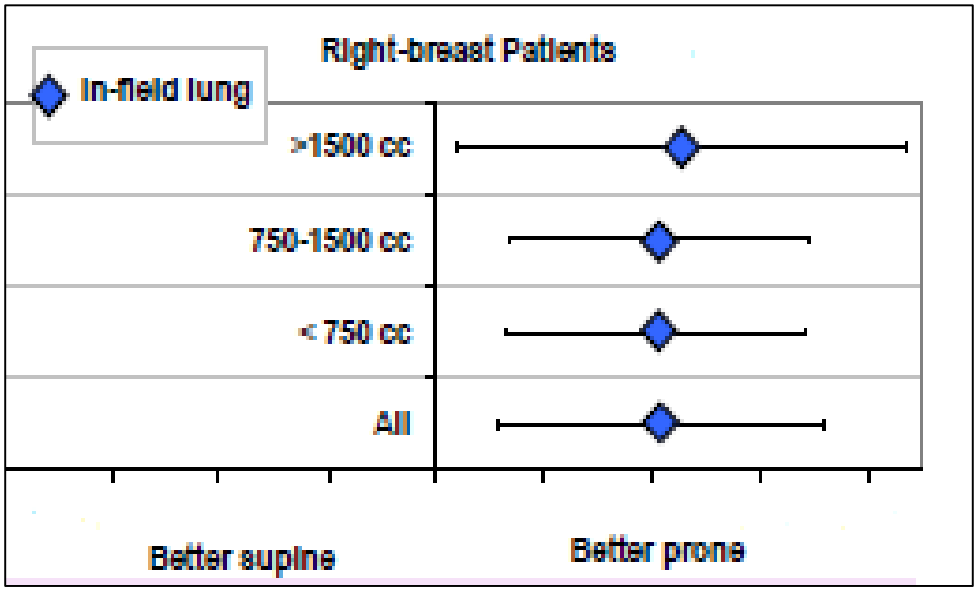
Forest plots of differences in volume of spared lung and heart, based on breast size (cc) (average and SD)



Graph 4-7 show the dose given of heart and lung in both supine and prone position



Graph 4-8 show the dose given of heart and lung in both supine and prone position for left breast



Graph 1-8 show the dose given of heart and lung in both supine and prone position for right breast

Normal tissue sparing ,namely heart and lung protection was evaluated for both the planned prone and supine breast treatments by looking at the infield volume of either heart or lung :for both right and left breast cancer patients the prone position better spares heart and lung.