

## Awareness to Cure!

### What is Exciting in Brachytherapy?

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(Hon)

Brachynext Meeting  
May 30, 2014, Miami FL

## Disclosures

- Secretary/Treasurer of ASTRO
- President of Mass Radiological
- Textbook Royalties, LWW Inc
- Lecture fees at CME course



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## **RICH HISTORY**





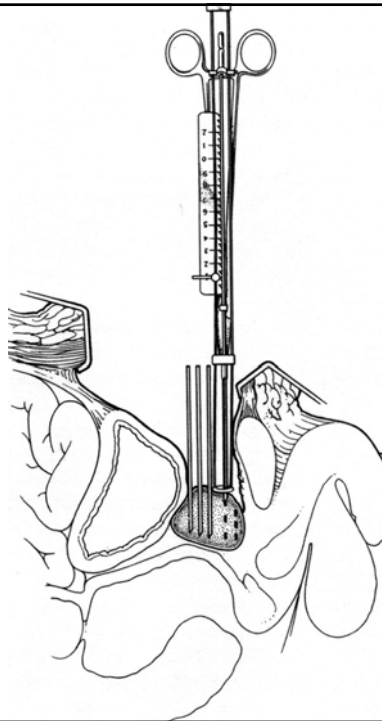
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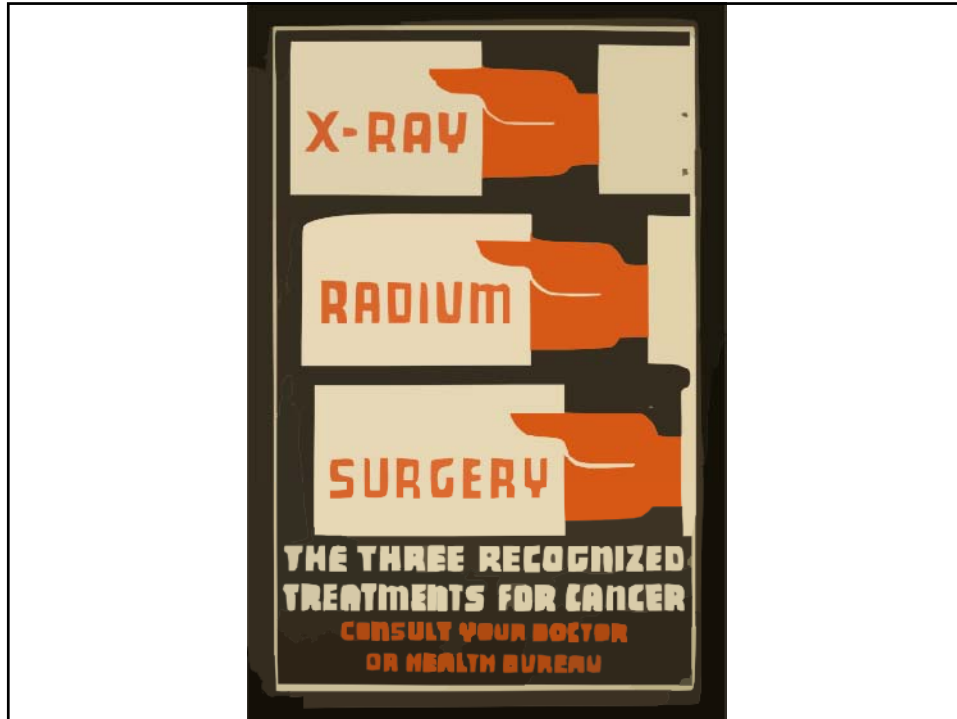
# MARIE CURIE





# 18 RADIUM SURGEONS





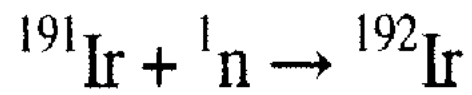
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# MEGAVOLTAGE BEAMS



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# ARTIFICIAL ISOTOPES



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**INTERPLAY**

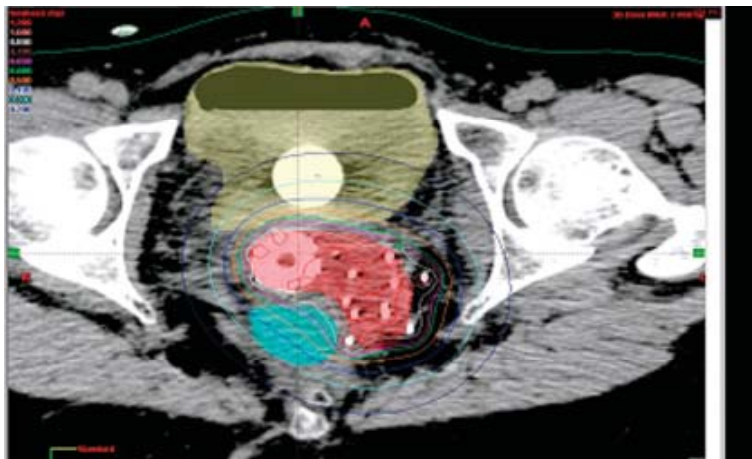


External Beam Radiation Therapy  
With  
Isotope-based Brachytherapy

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# GYNECOLOGIC BRACHYTHERAPY





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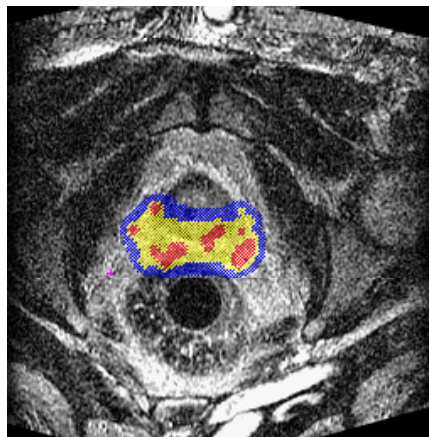
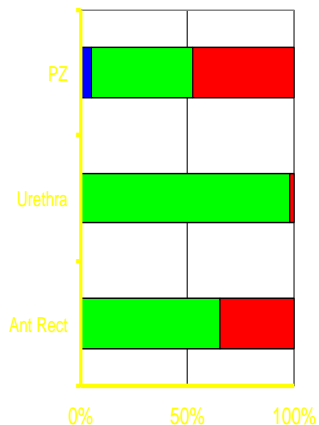
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**GU**

**BRACHYTHERAPY**



Planning: Manipulate virtual needles  
for coverage



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# CUTANEOUS BRACHYTHERAPY

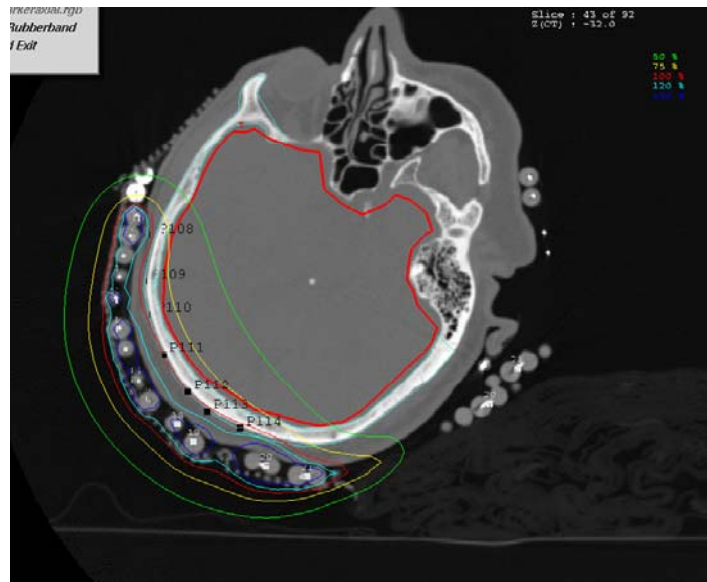


Conformal surface applicator  
Freiburg flap catheters attached to  
thermoplastic shell



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## HDR brachytherapy dosimetry (50% isodose in green)



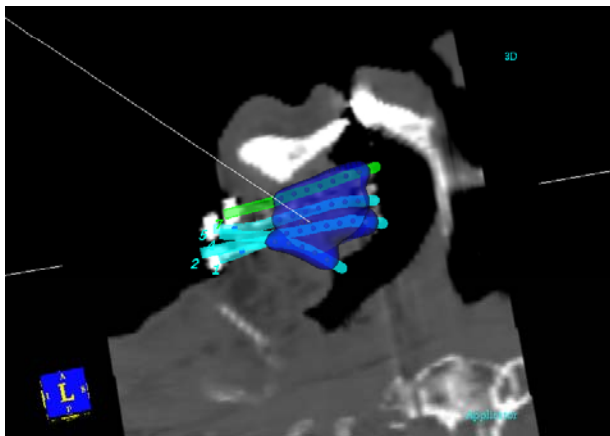
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# HEAD/NECK/CNS /PEDS BRACHYTHERAPY

## HDR Brachytherapy



Busse, PM  
HMS Brachytherapy Review September,  
2007, with permission

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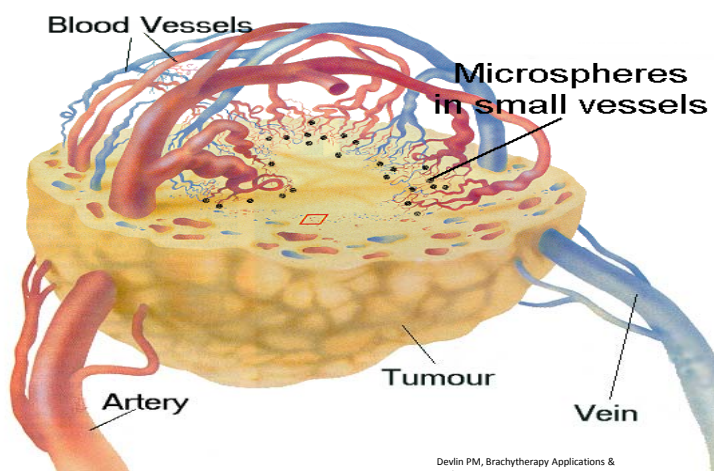


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# UNSEALED BRACHYTHERAPY

## Microspheres:

1. embolize the tumor arterioles
2. deliver very localized radiation dose

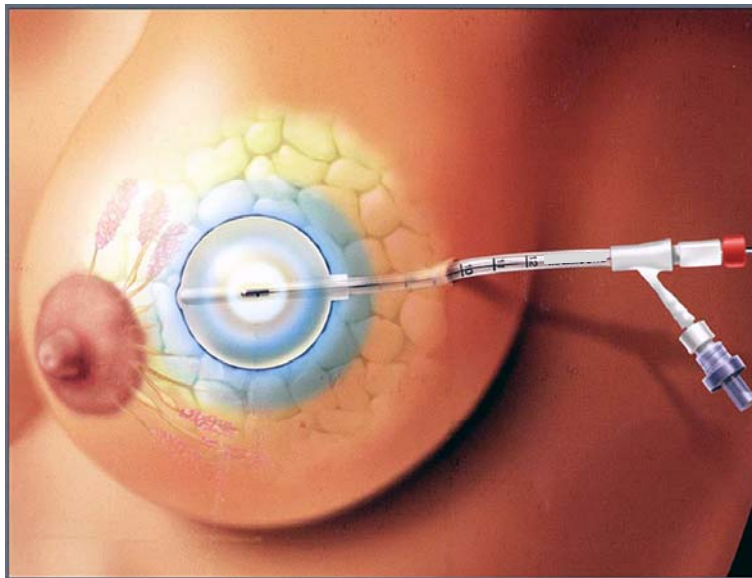


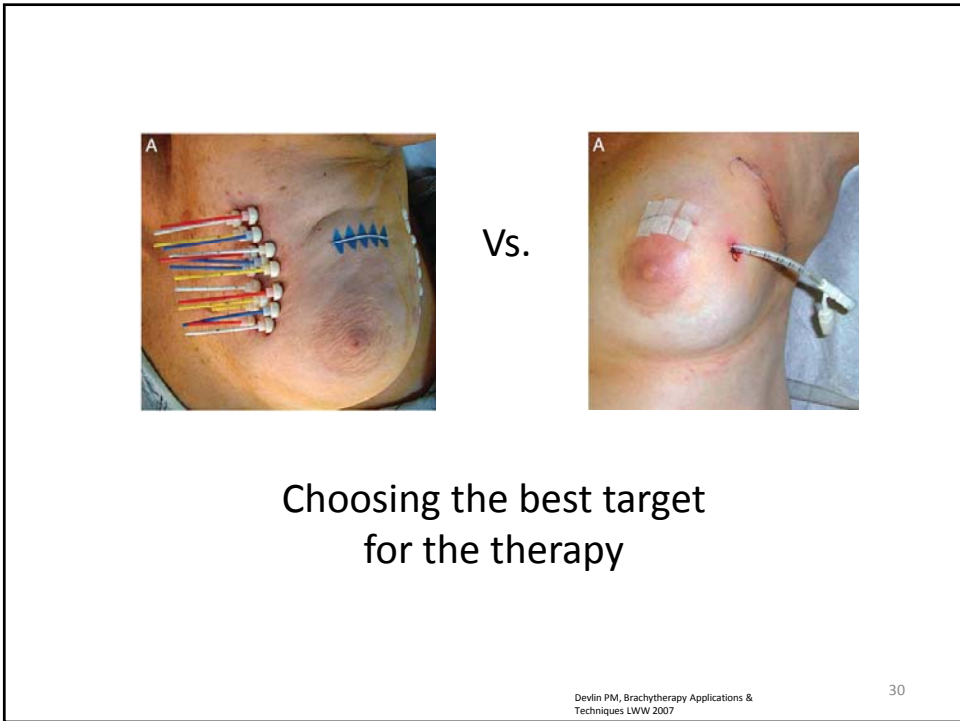
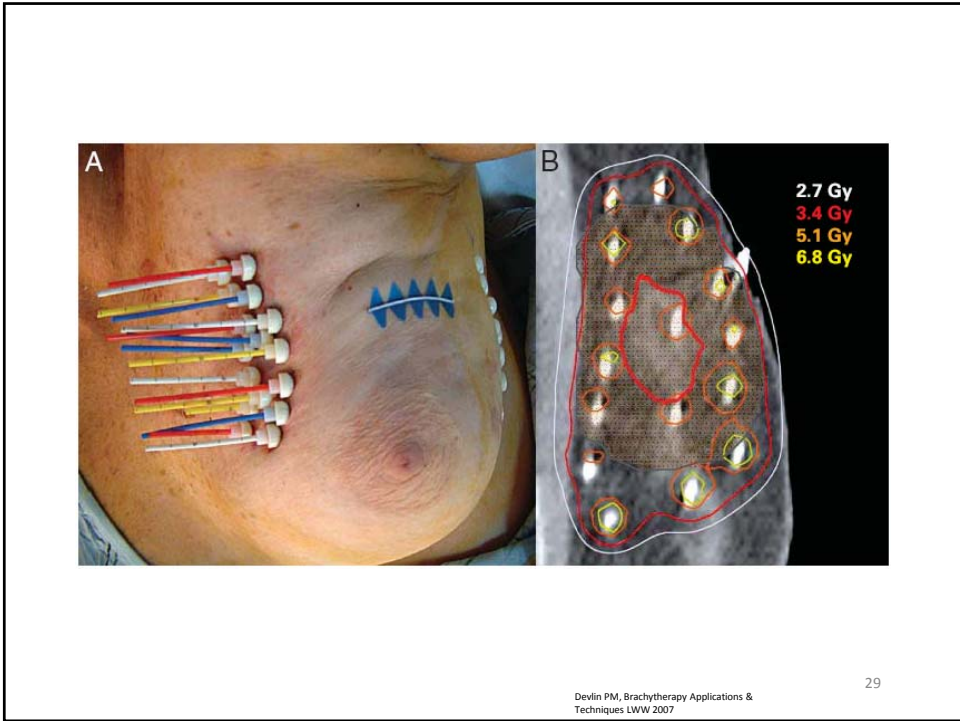
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# BREAST BRACHYTHERAPY



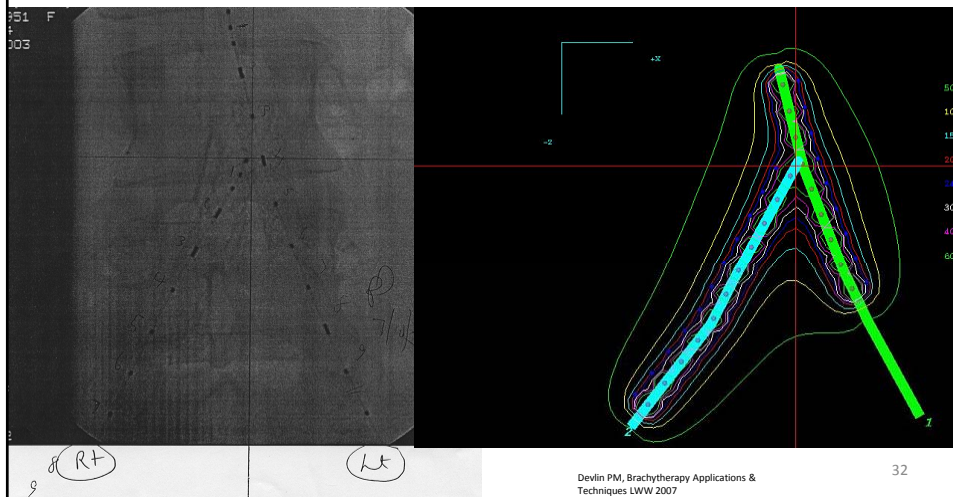




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# VASCULAR BRACHYTHERAPY

## Peripheral Artery Brachytherapy

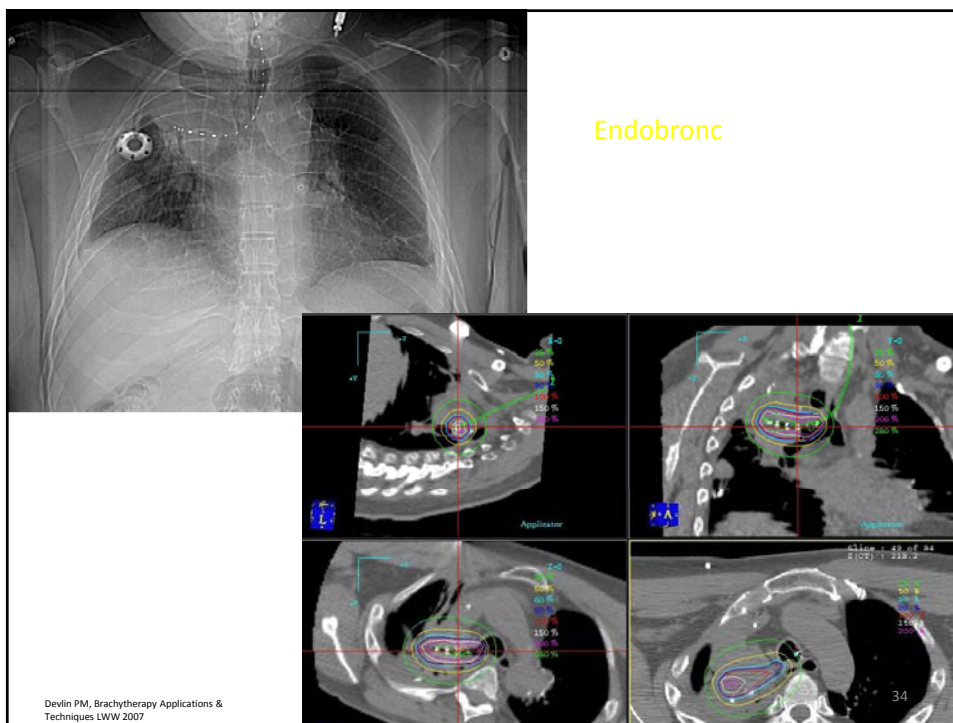


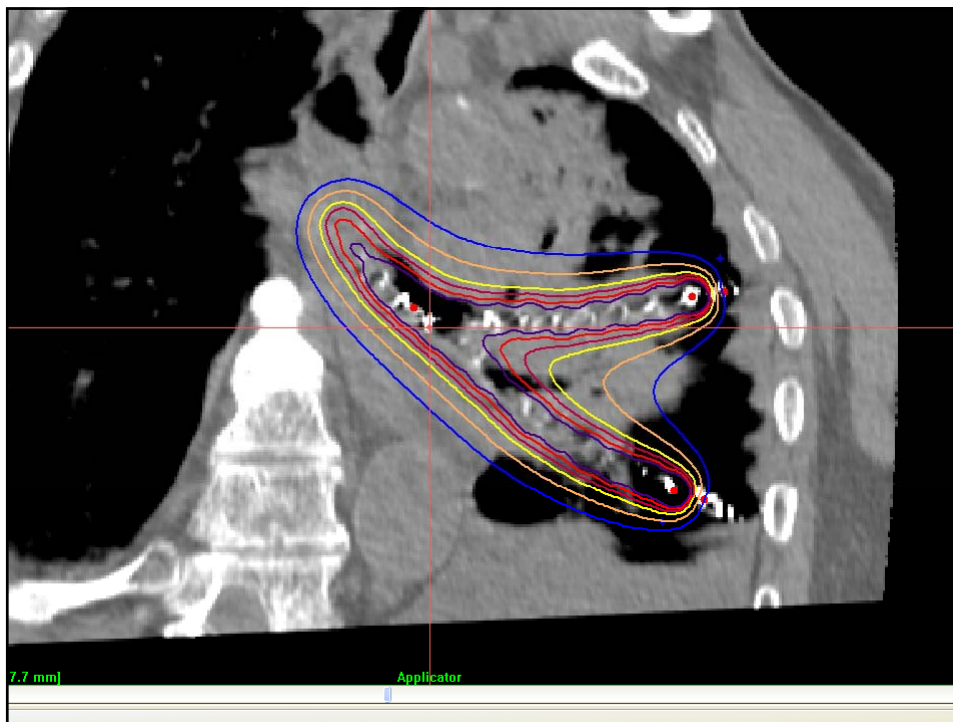




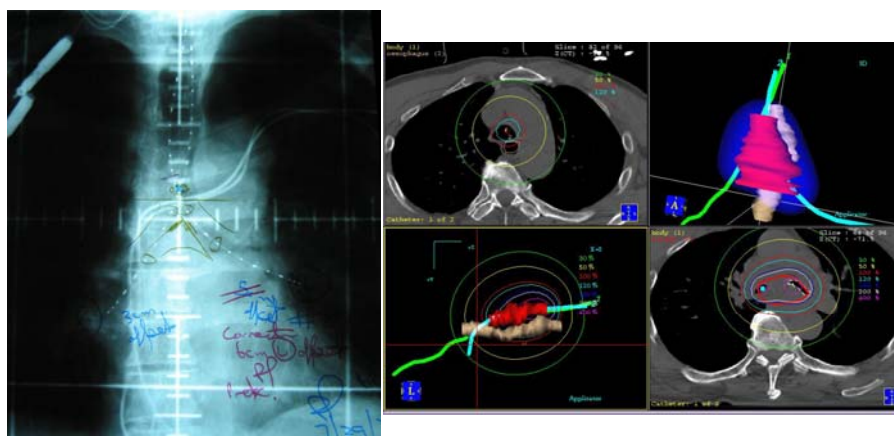
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# THORACIC BRACHYTHERAPY



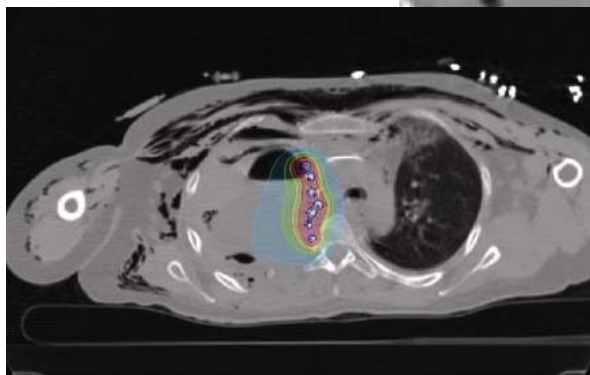
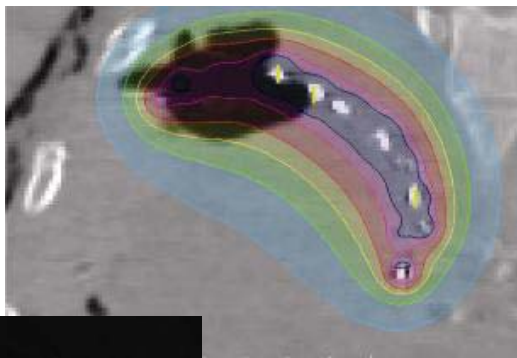


## Sub-carinal mass





Axial and coronal  
isodose distributions  
for planar implant to  
right upper  
mediastinal target



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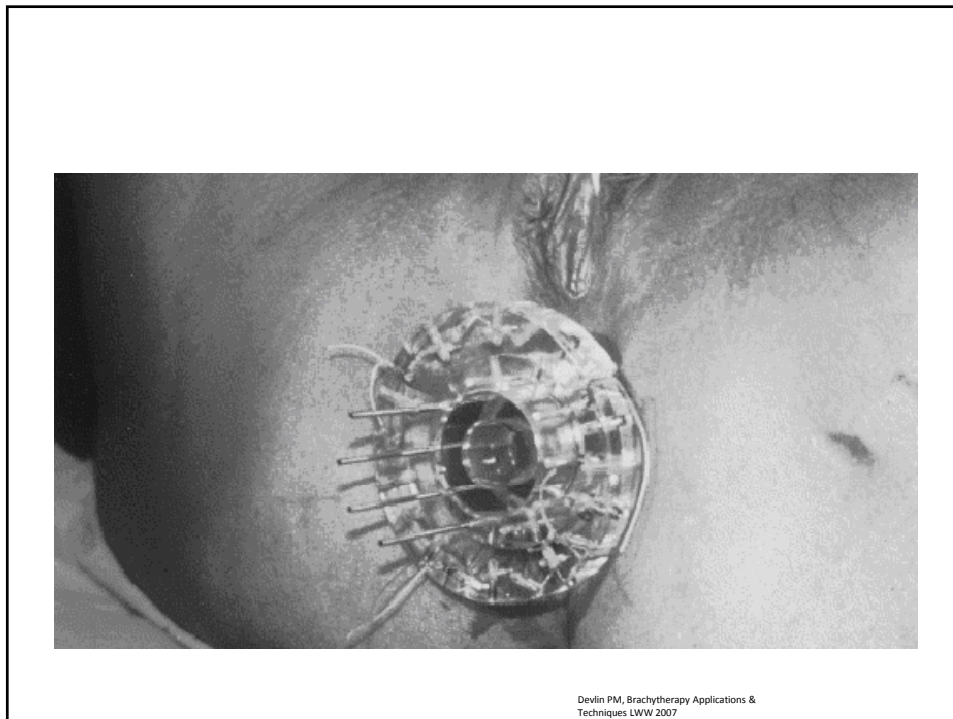
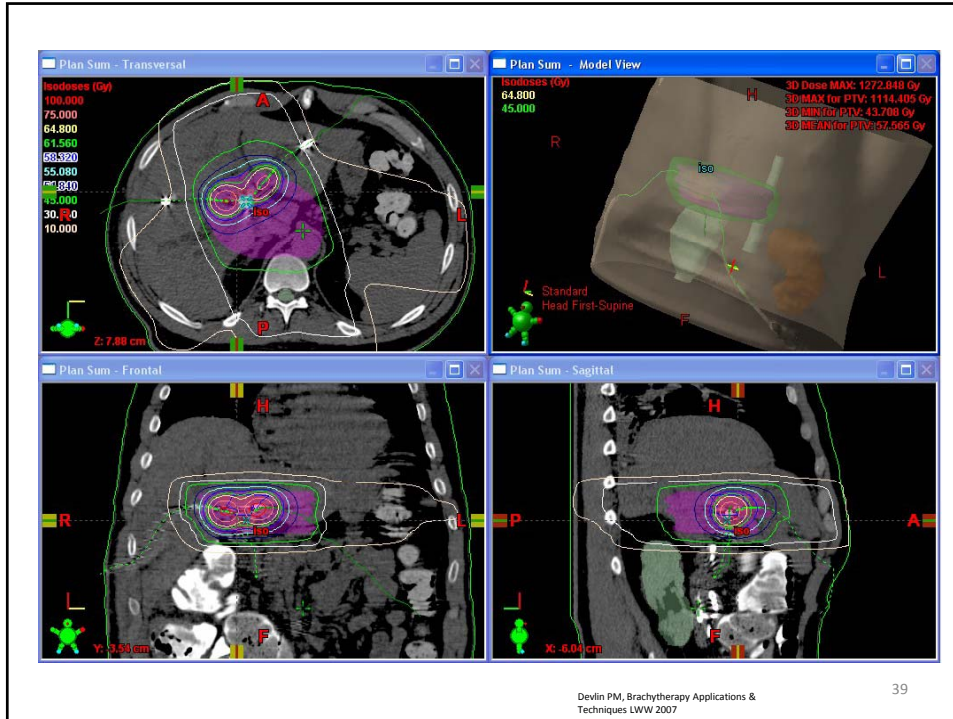
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**GI**

**BRACHYTHERAPY**

# BrachyNext

Working Together to Shape the Future of  
Brachytherapy

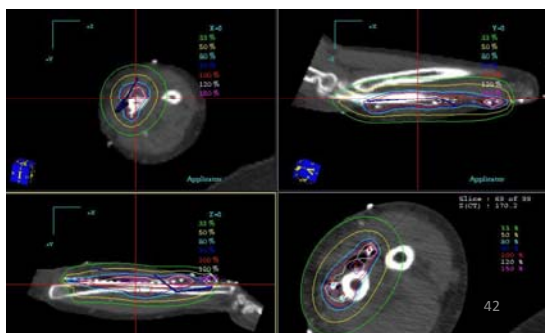
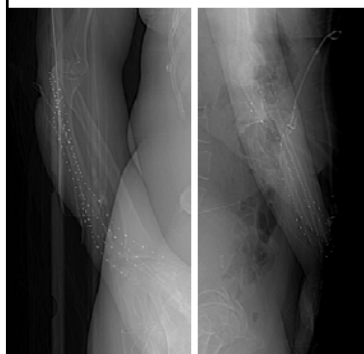




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# SARCOMA BRACHYTHERAPY

Sarcoma





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## **IMAGE FUSION**

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## **ADVANCED IMAGE GUIDANCE**



## The OR and MR rooms of AMIGO

Advanced Multimodality Image Guided Operating (AMIGO) Suite  
P41 RR019703 – National Center for Image Guided Therapy (NCIGT) 2005-2015  
Ferenc Jolesz, MD      Clare Tempny, MD

## MR-guided interstitial implant



Dr. Akila Viswanathan &  
Dr. Clare Tempny



## **2 INTEGRATION OF BRACHYTHERAPY INTO MANY CLINICAL SCENARIOS**

## **1 INCREASED TRAINING OPPORTUNITIES**





**AND MOST OF ALL....**

**THE PASSION  
AND  
ENTHUSIASM OF  
ALL OF YOU!**

# BrachyNext

Working Together to Shape the Future of

**Brachytherapy**

