



IS3R 2023

Berlin/Germany

August 24–26, 2023

Targeted Therapy with IR:

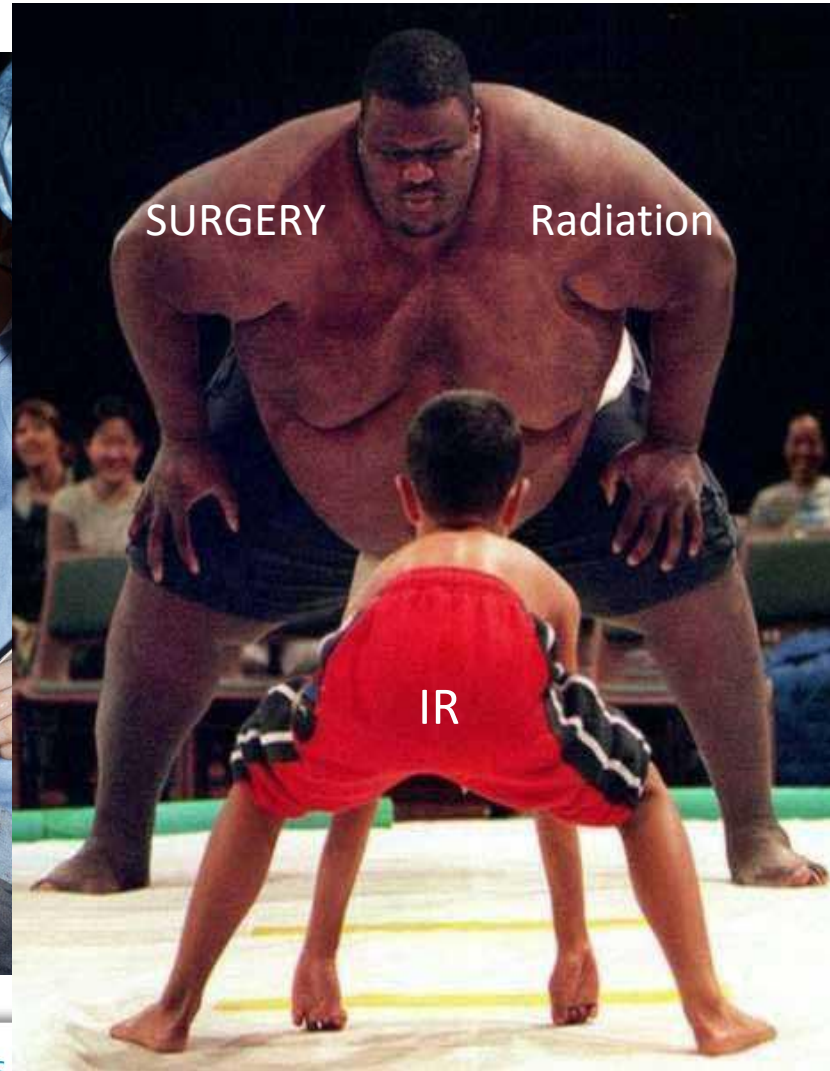
**How does IR
continue to
differentiate and
add value, distinct
from other
minimally invasive
targeted therapies?**

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Memorial Sloan Kettering
New York, New York**

Conflicts of Interest

- Consultant: GE Healthcare, Johnson & Johnson, XACT Robotics, Aperture Medical, Orchestra Biomed, MedX Incubator, Microbot, Merck
- Grants: GE Healthcare, AngioDynamics, Elesta
- Shareholder: Johnson & Johnson, Lantheus, Aspire Bariatrics, Aperture Medical

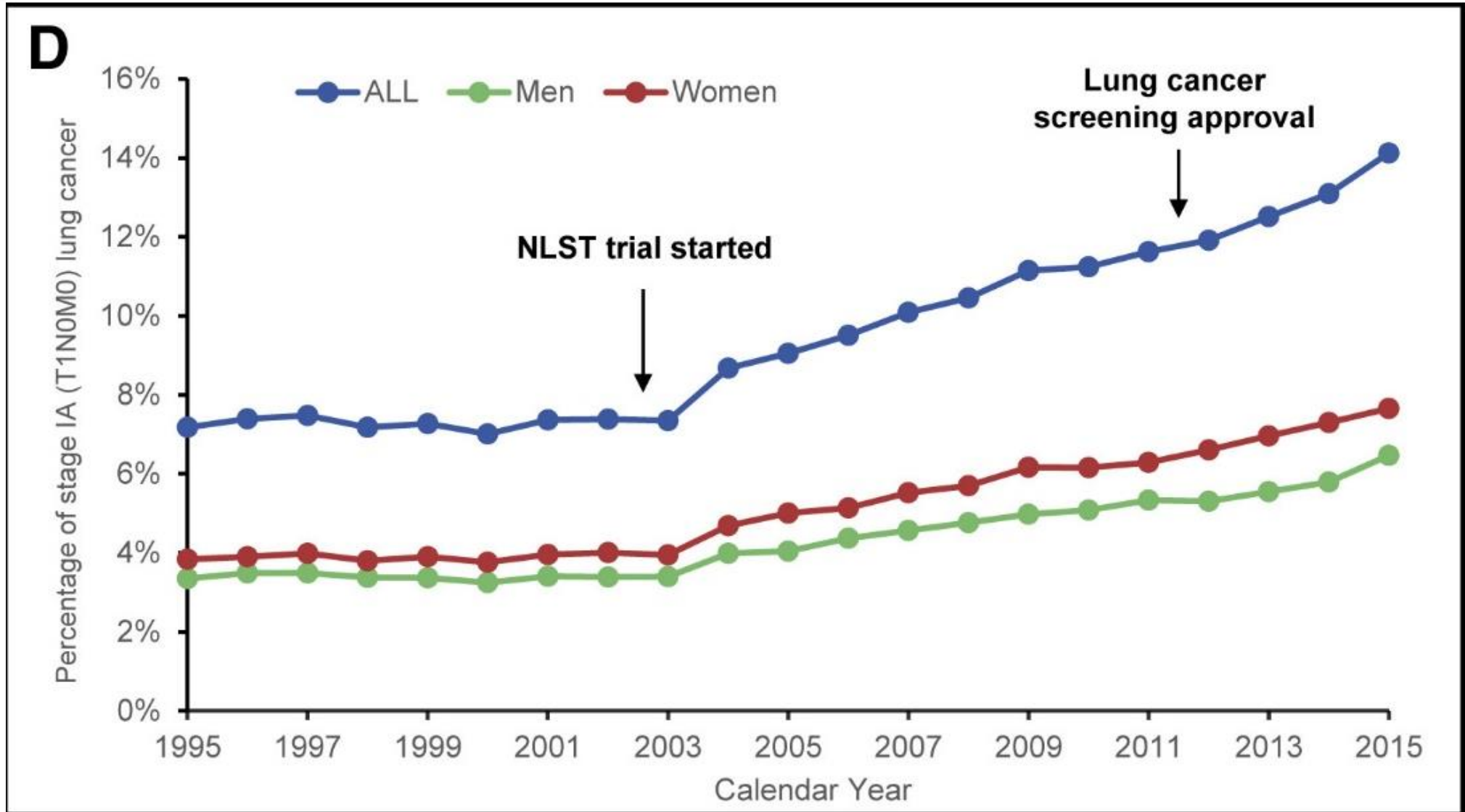
Therapeutic Options





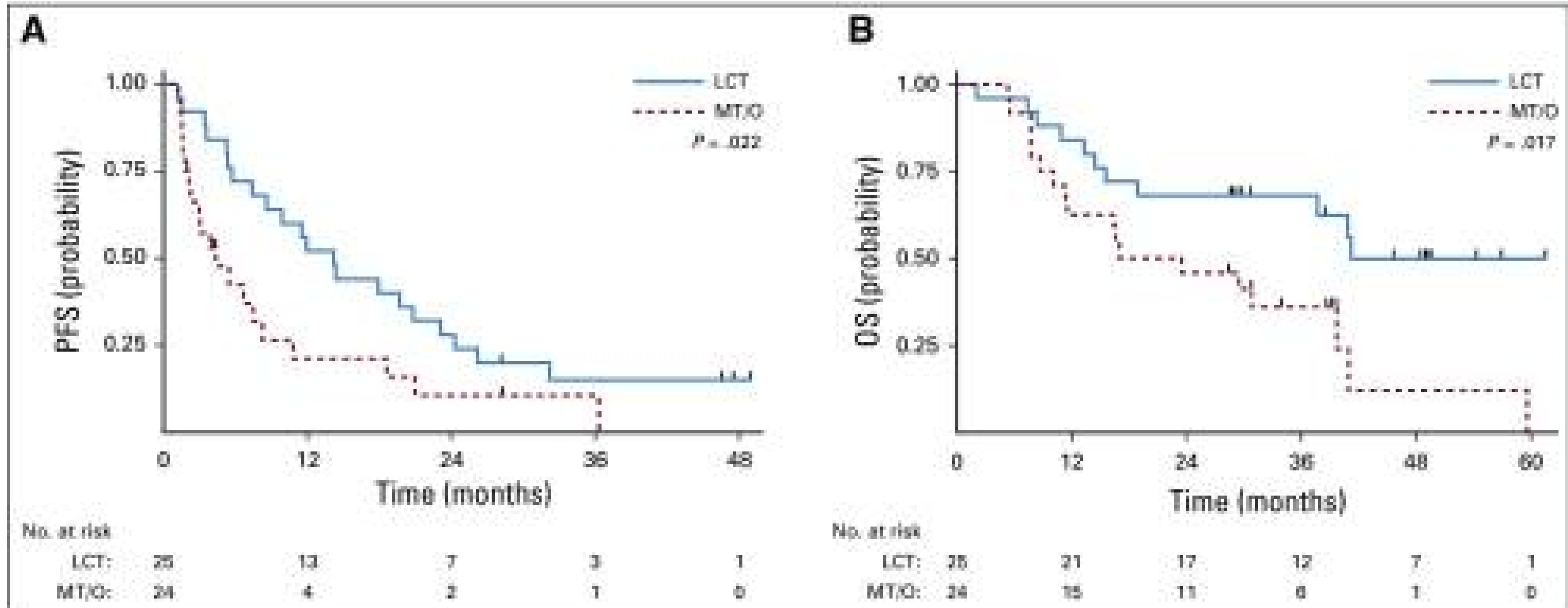
Imaging discovering tumors when tumors are smaller

Lung Cancer Screening has Led to Smaller Cancers





Treatment for oligometastatic/oligoprogressive or multifocal disease is growing

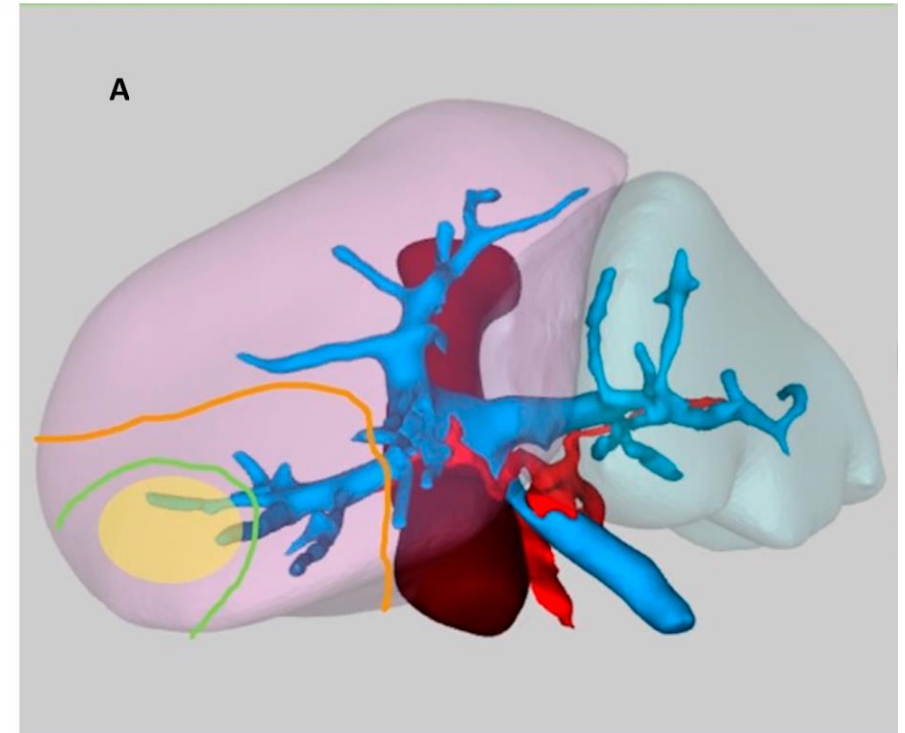




Organ Preservation

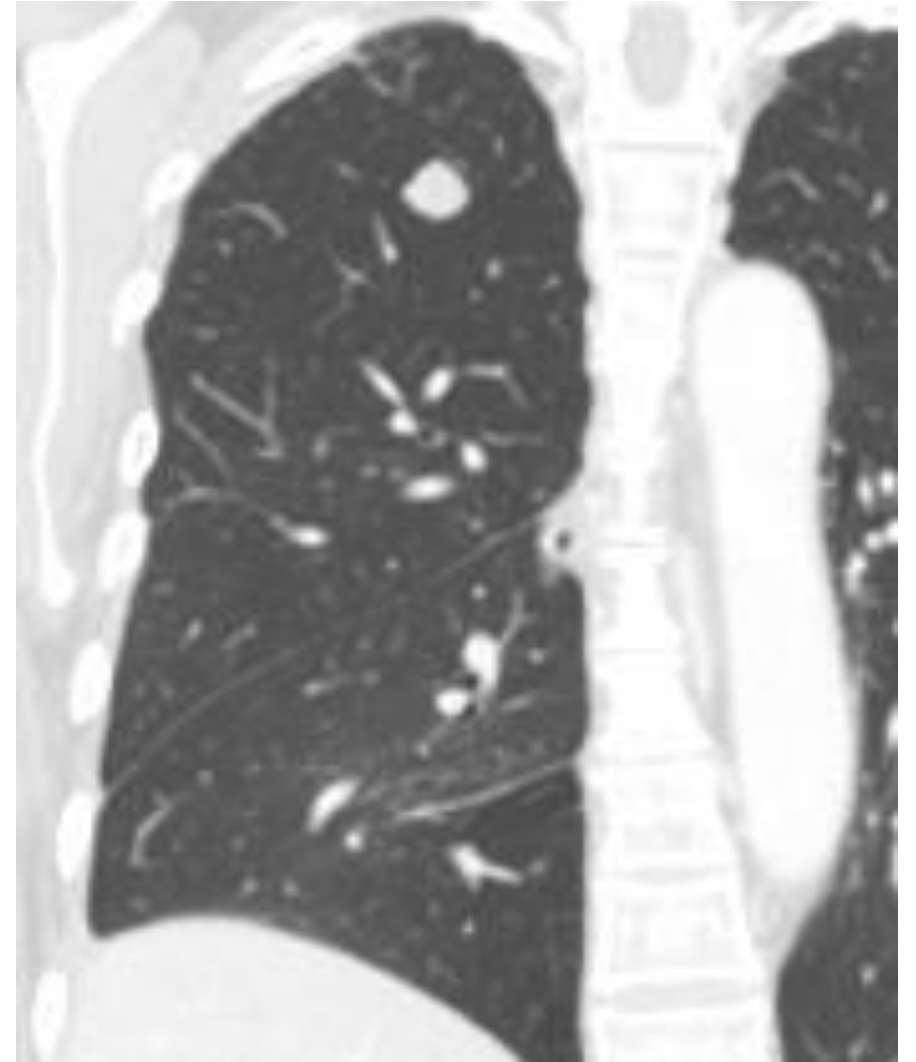
Shift from Anatomic to Non-Anatomic Resection

- Diagnostic imaging discovers lesions smaller
- Organ preservation is essential
- Data showing equivalence of non-anatomic resection



Lobectomy vs Wedge

- Anatomic (lobectomy) vs Non-anatomic (wedge) resection
- Smaller surgery is an opportunity to preserve lung function.



Lung Palpation to Locate the Cancer for Non-Anatomic (ie Wedge) Resection

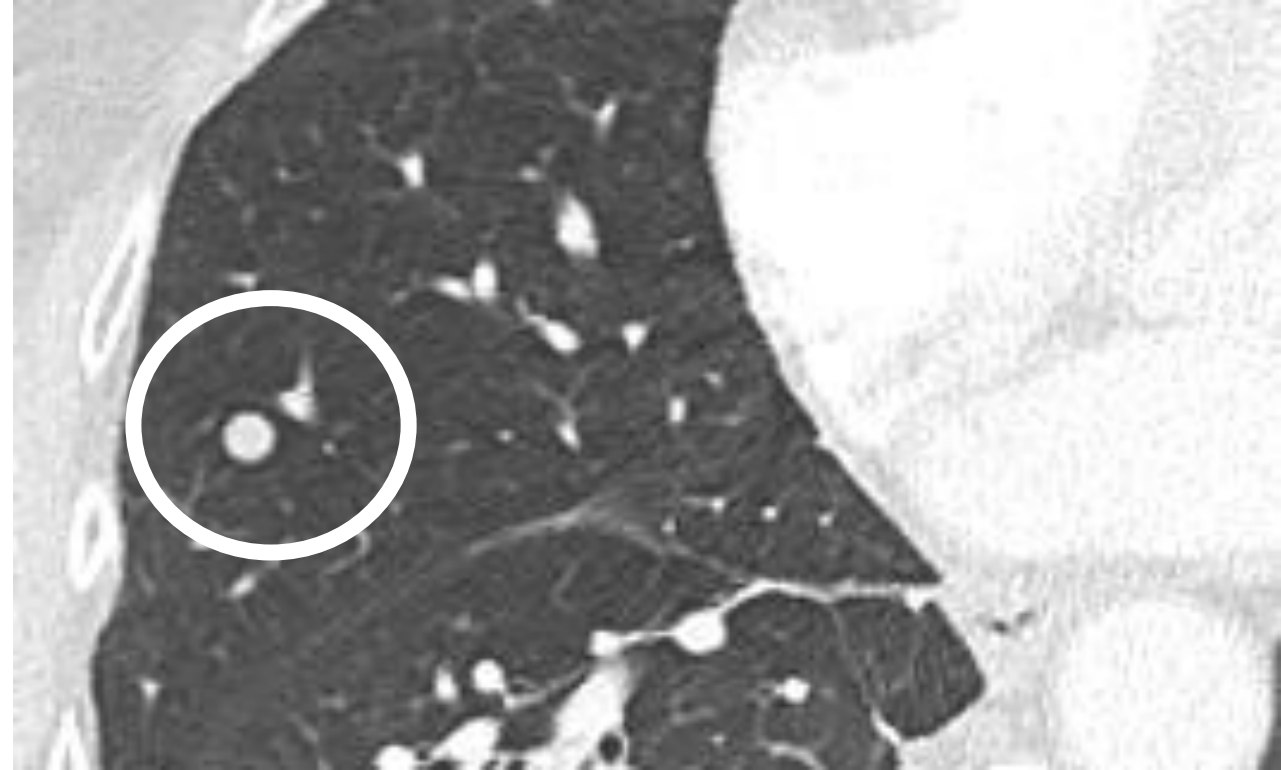


Image-guided Ablation



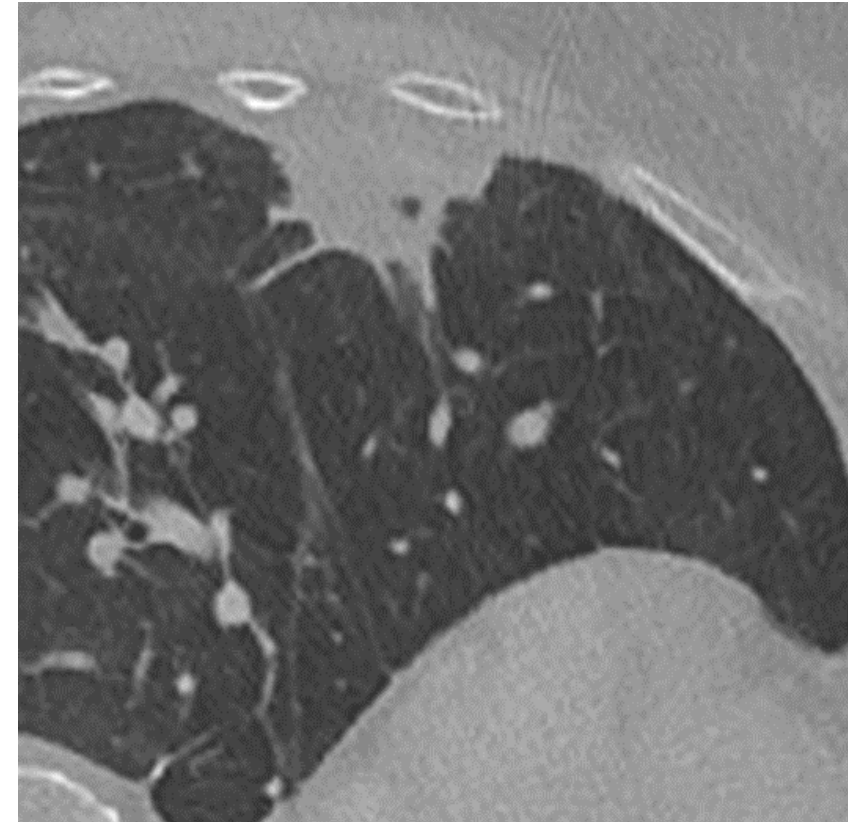
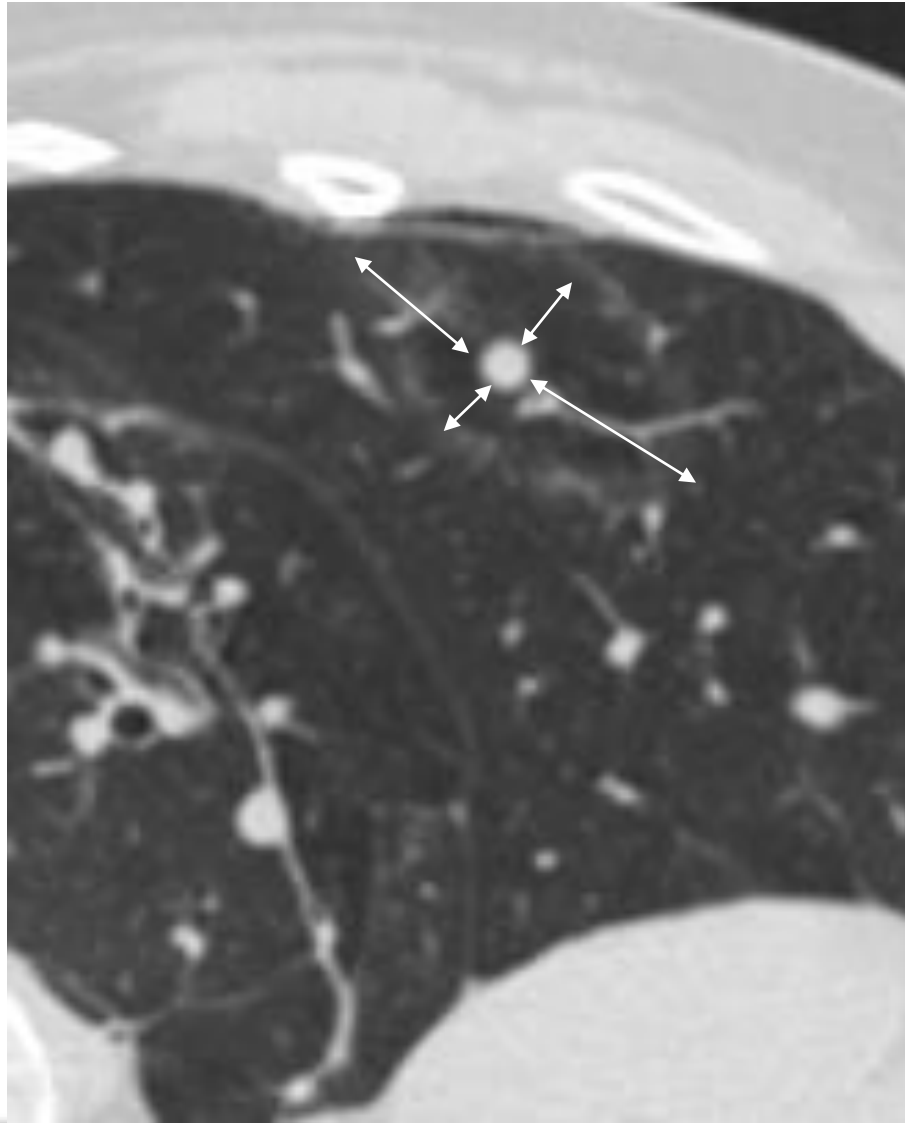
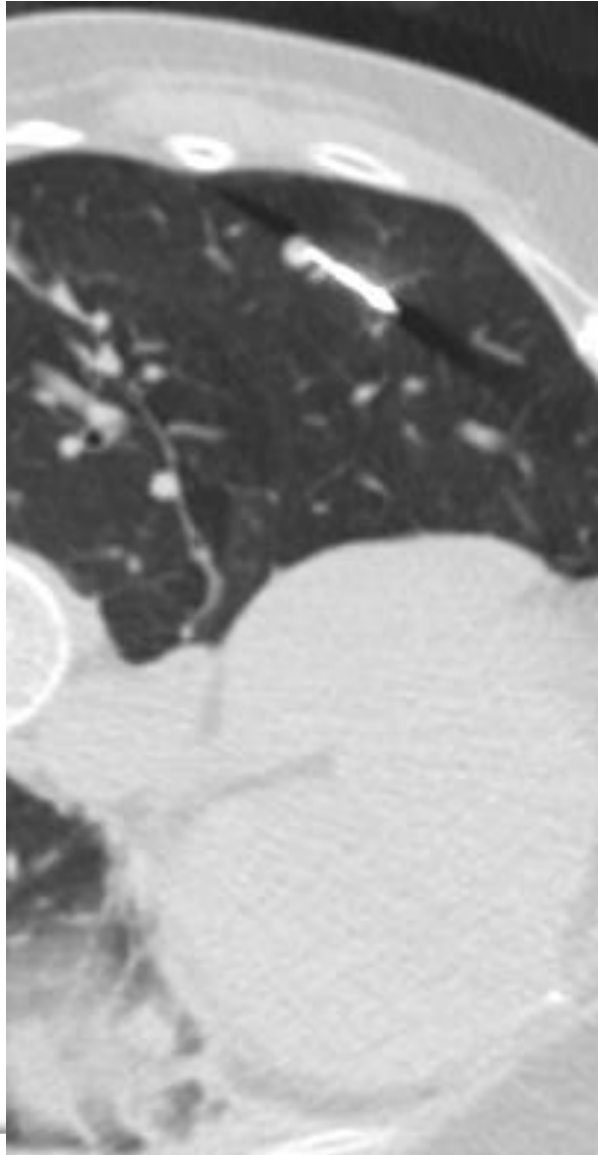


64 year old woman with solitary metastasis from colon cancer (2014)

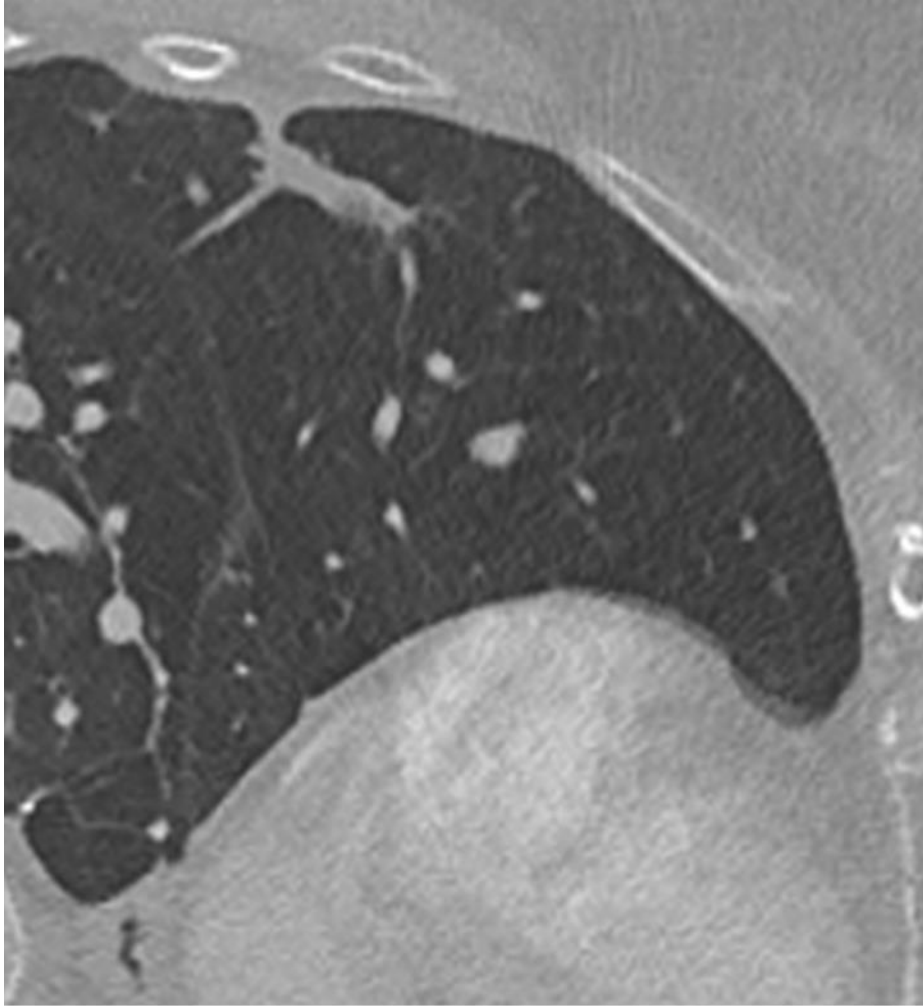


63 year old woman with solitary metastasis from colon cancer (Dec 2020)

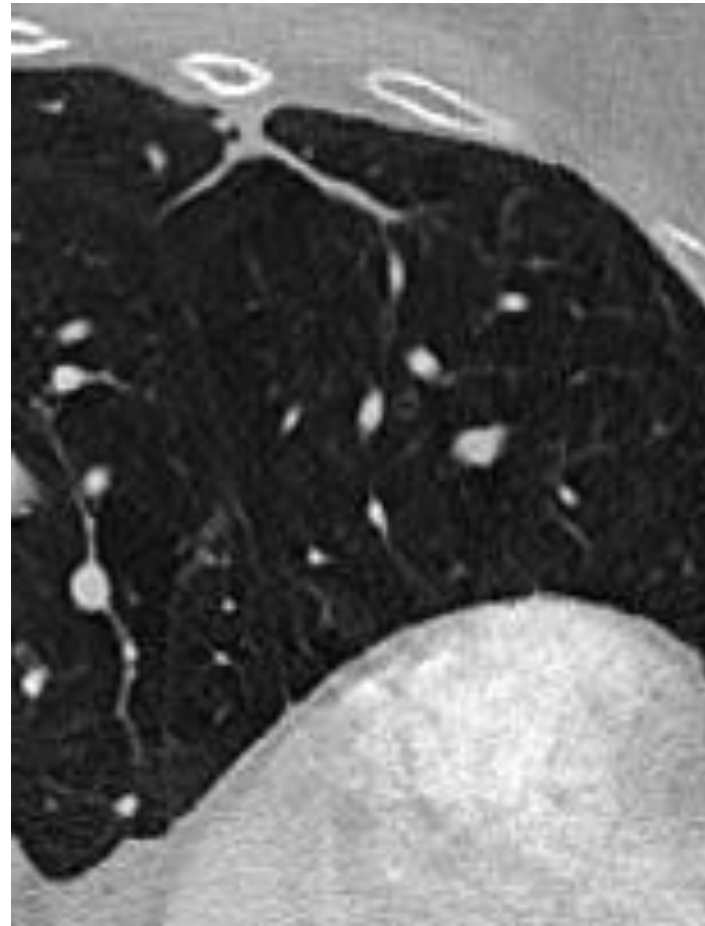
Ablation Patient



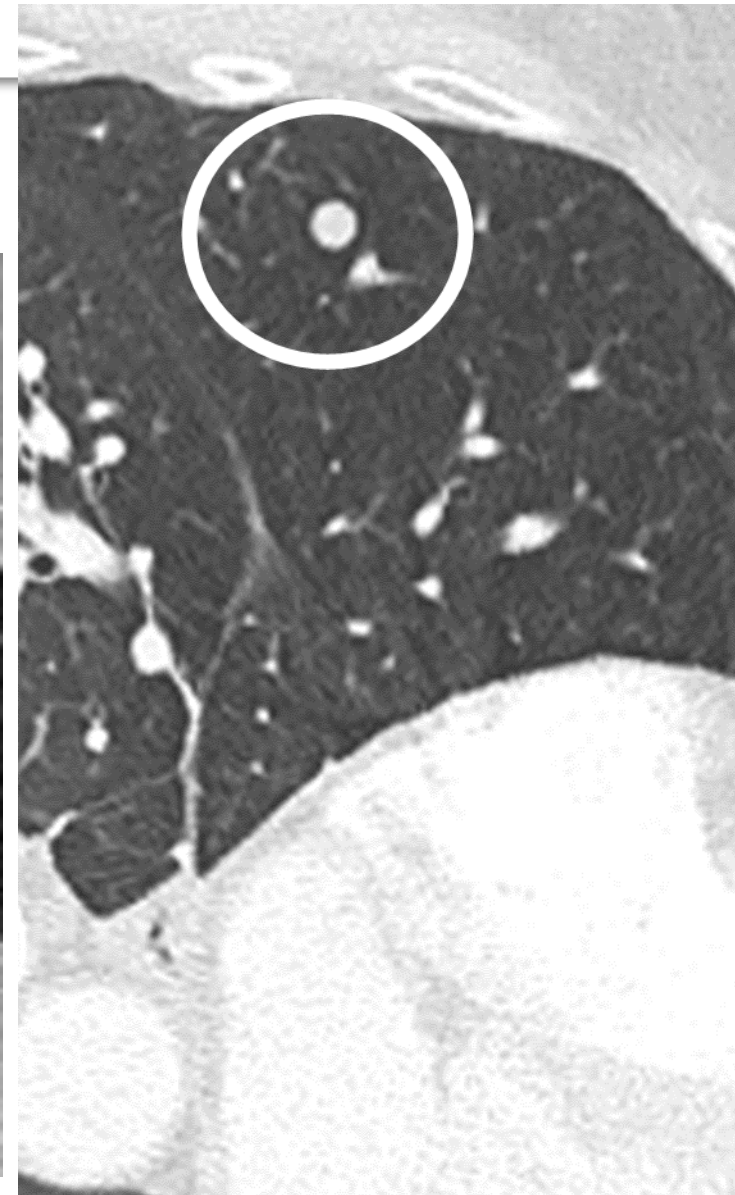
Ablation Patient



Sept 2021

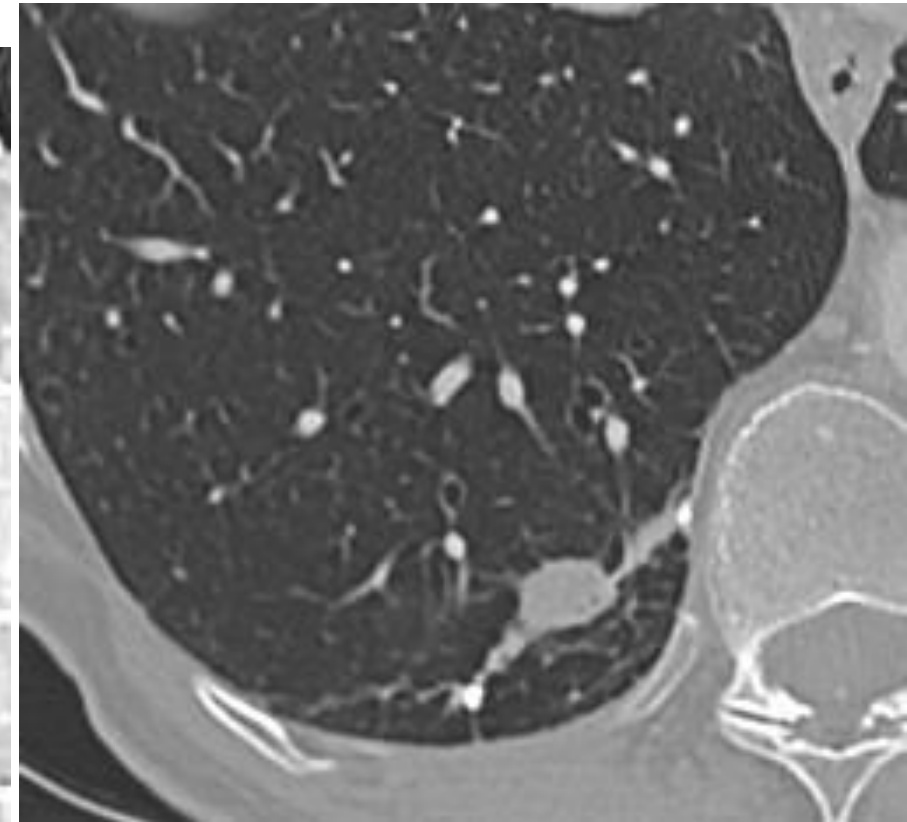
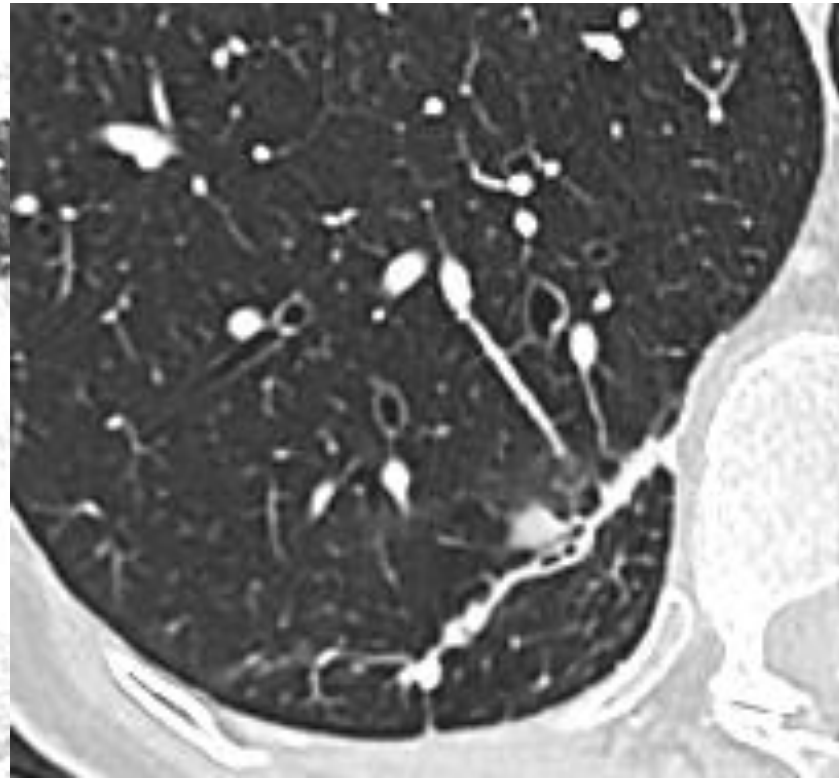
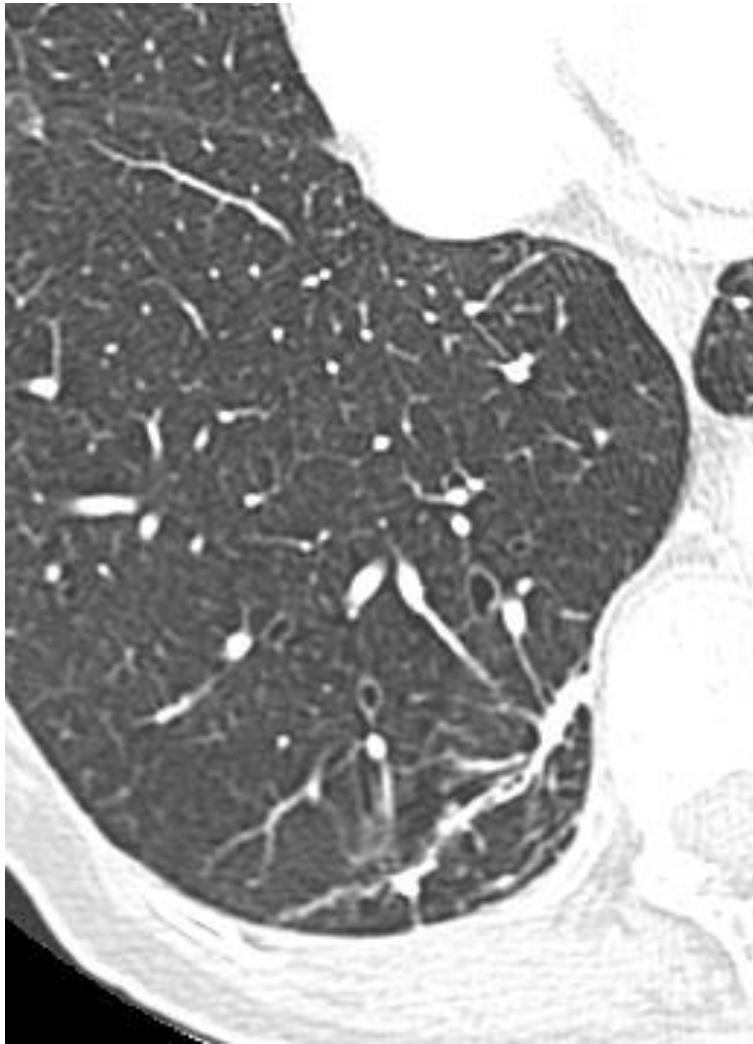


Dec 2022



Original Dec 2020

Surgery Patient

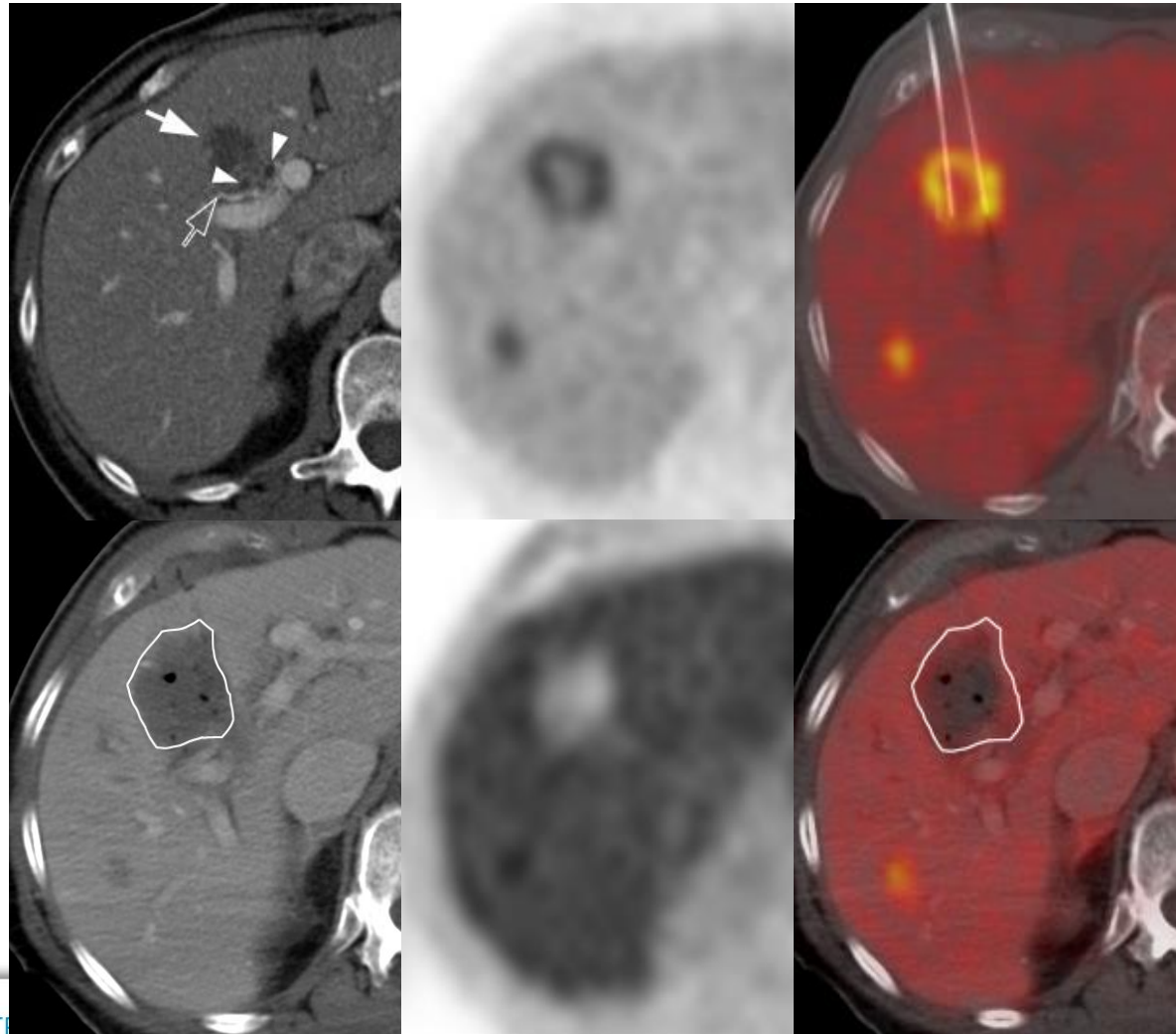


July 2015

Jan 2016

July 2016

Intra-Procedural PET for Real-Time Determination of Success





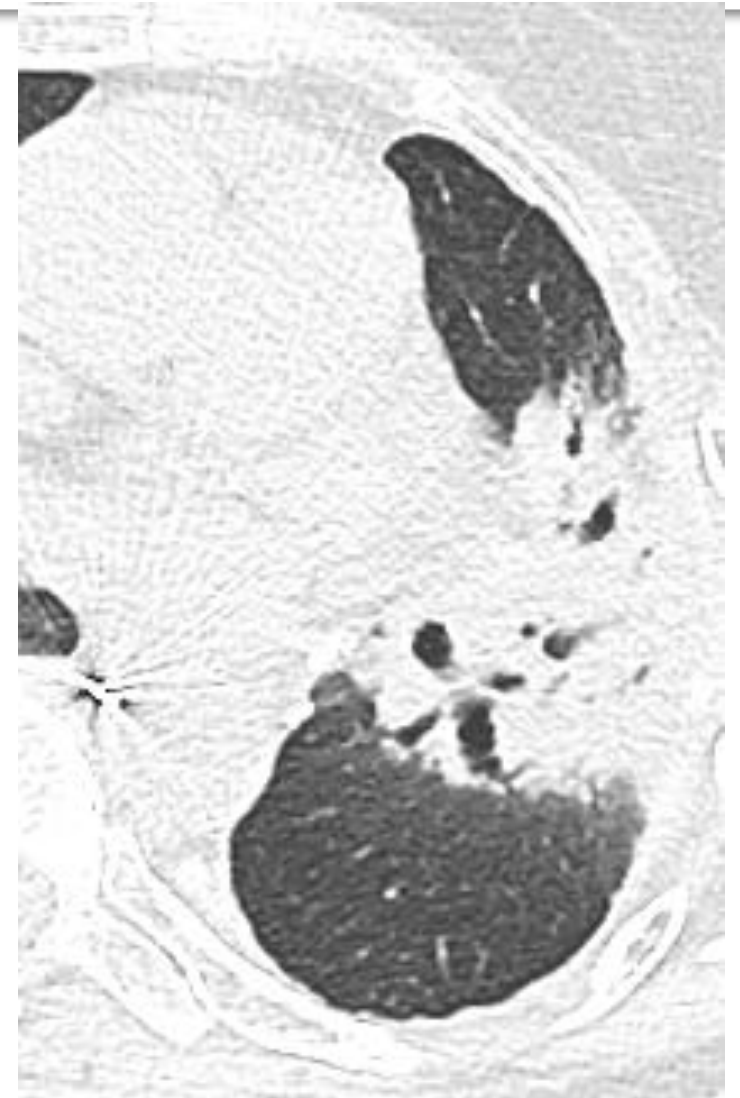
With Imaging, IR Scales Small Very Well

Radiation Changes

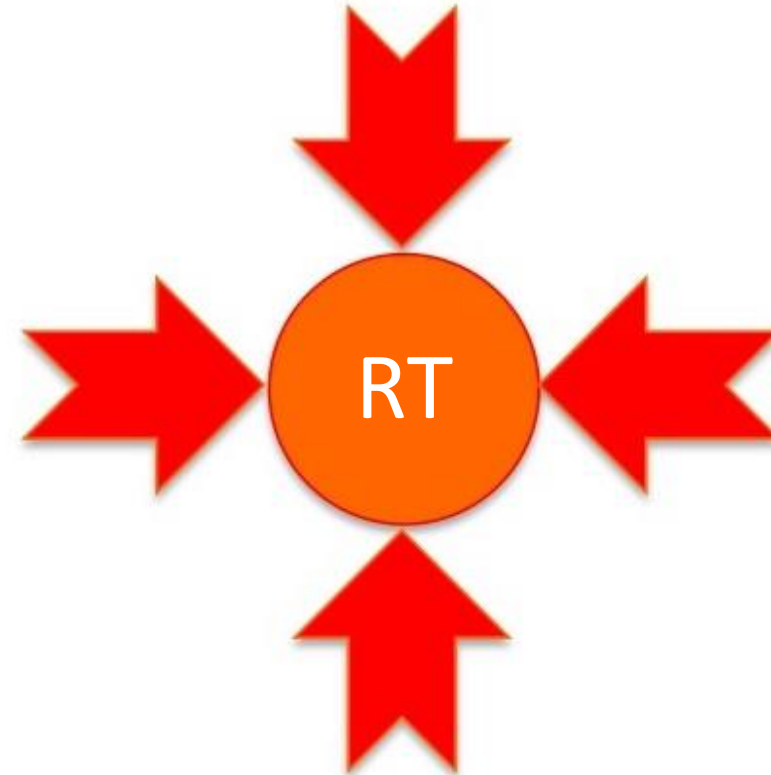
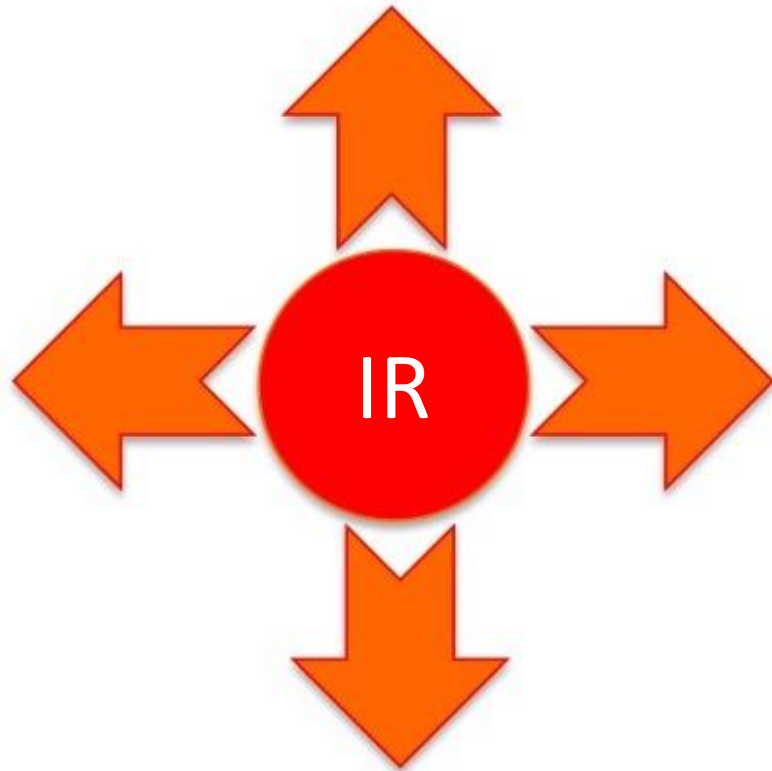
Oct, 2017



Feb, 2020

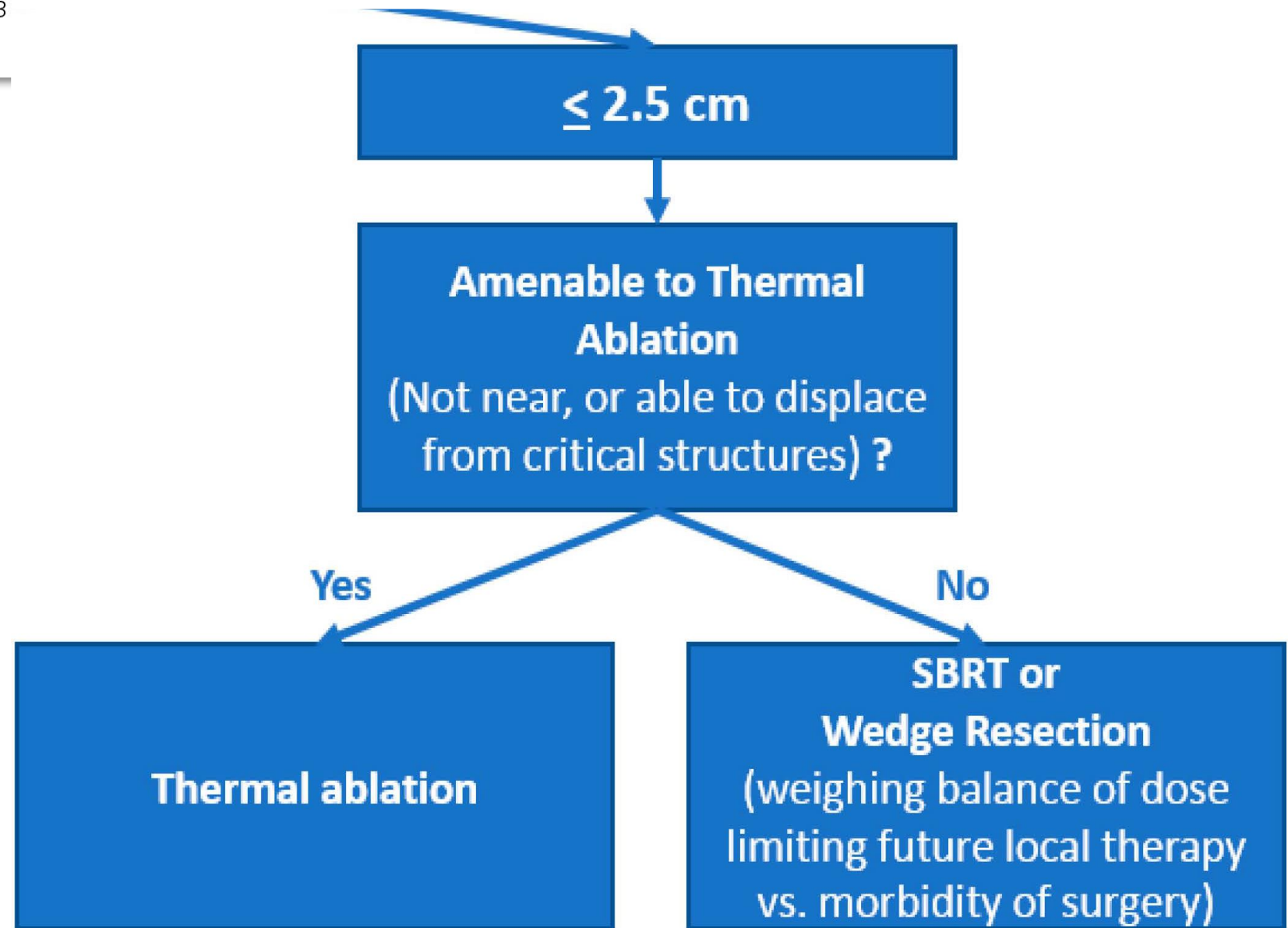


Inside-out \leftrightarrow Outside-in



Organ Preservation

- Pulmonary Function Tests
- Glomerular Filtration Rate
- Liver Function Tests





Intratumoral Therapies

Anti-viral
Immunotherapy
Nanotherapy

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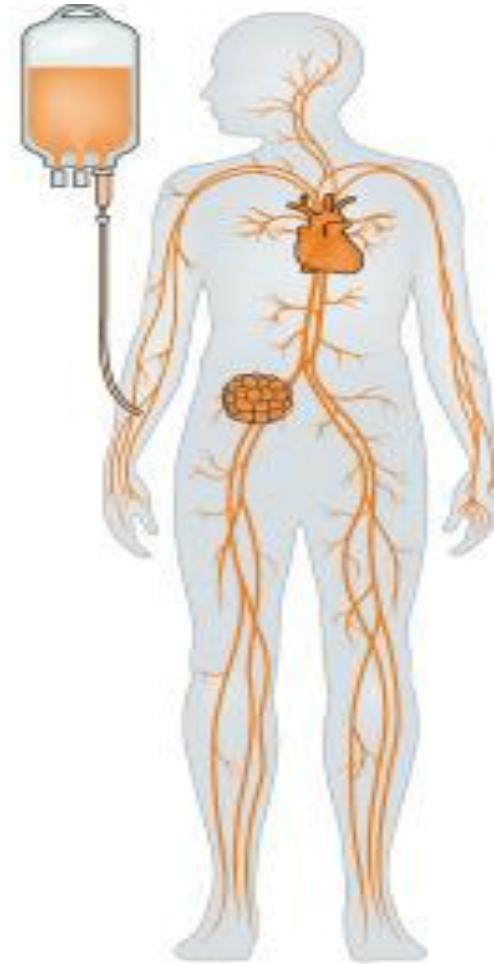


Intratumoral Delivery

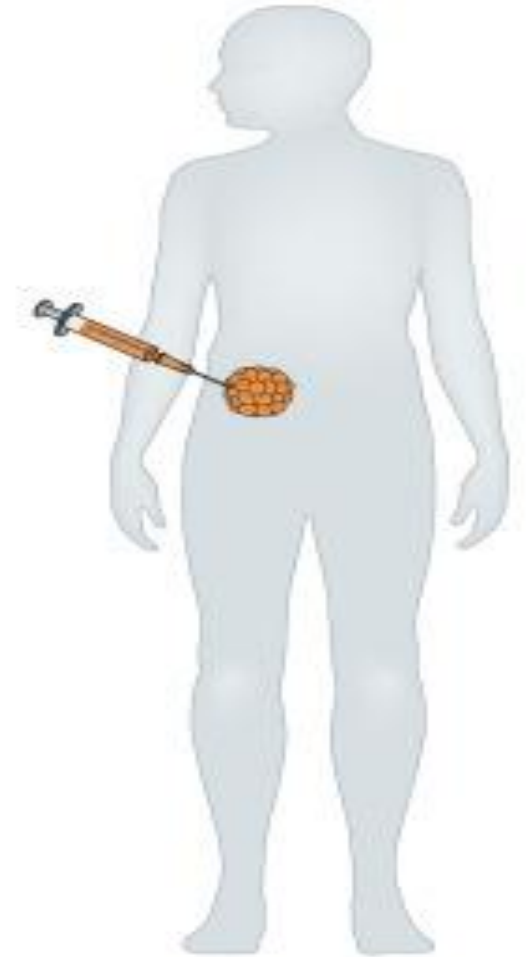
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Systemic



Tumour-targeted



Intratumoural

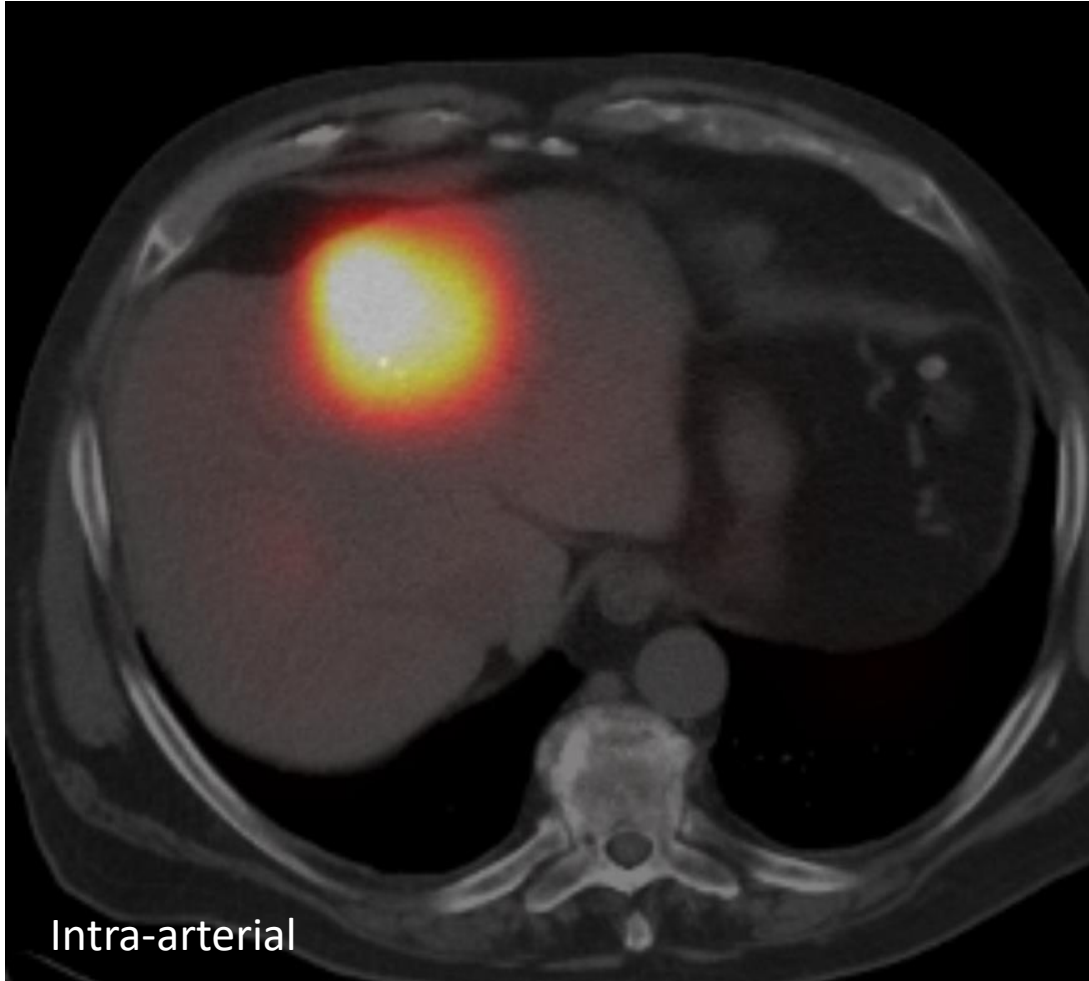
Advantages

Practical

Practical

- High therapeutic index
- Low toxicity

Tumor/Background: 1000x improved with IA over IV Radioisotope Delivery



Favorable Trends for IR

- Imaging discovering tumors when tumors are smaller
- Treatment for oligometastatic/oligoprogressive or multifocal disease is growing
- Organ Preservation
- Intratumoral Therapies (eg Nanotherapies, Immunostimulants, Anti-virals) are developing but facing delivery challenges and systemic toxicities.





15th Biennial Symposium
of the International
Society for Strategic
Studies in Radiology

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