

Surgical Advances in NET Treatment

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Advancing?



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 Int J Radiat Oncol Biol Phys. 2014 Dec 15. [Epub ahead of print].
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 3. [Update on pancreatic neuroendocrine tumors.](#)
 McKenna LR, Edil BH.
 Gland Surg. 2014 Nov;3(4):258-75. doi: 10.4236/gls.2014.34025.
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 Garnier S, Réguerre Y, Orbach D.
 Bull Cancer. 2014 Oct;101(10):966-75. doi: 10.1016/j.bulcan.2014.08.005.
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- Consensus Recommendations for

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Neuroendocrine Tumor: Treatment Options | Cancer.Net
 www.cancer.net › Types of Cancer › Neuroendocrine Tumor › Cancer.Net
 A **surgical** oncologist is a doctor who specializes in **treating** cancer using **surgery**. ...
 Radiation **therapy** is generally used when a **neuroendocrine tumor** has ...

[Recent advances in treatment of pancreatic ...

What I found:

- The greatest advances that I found were all around medical therapy or novel interventional techniques

But..

- In every manuscript, surgical resection still always referred to as the “cornerstone” and the “only curative therapy”

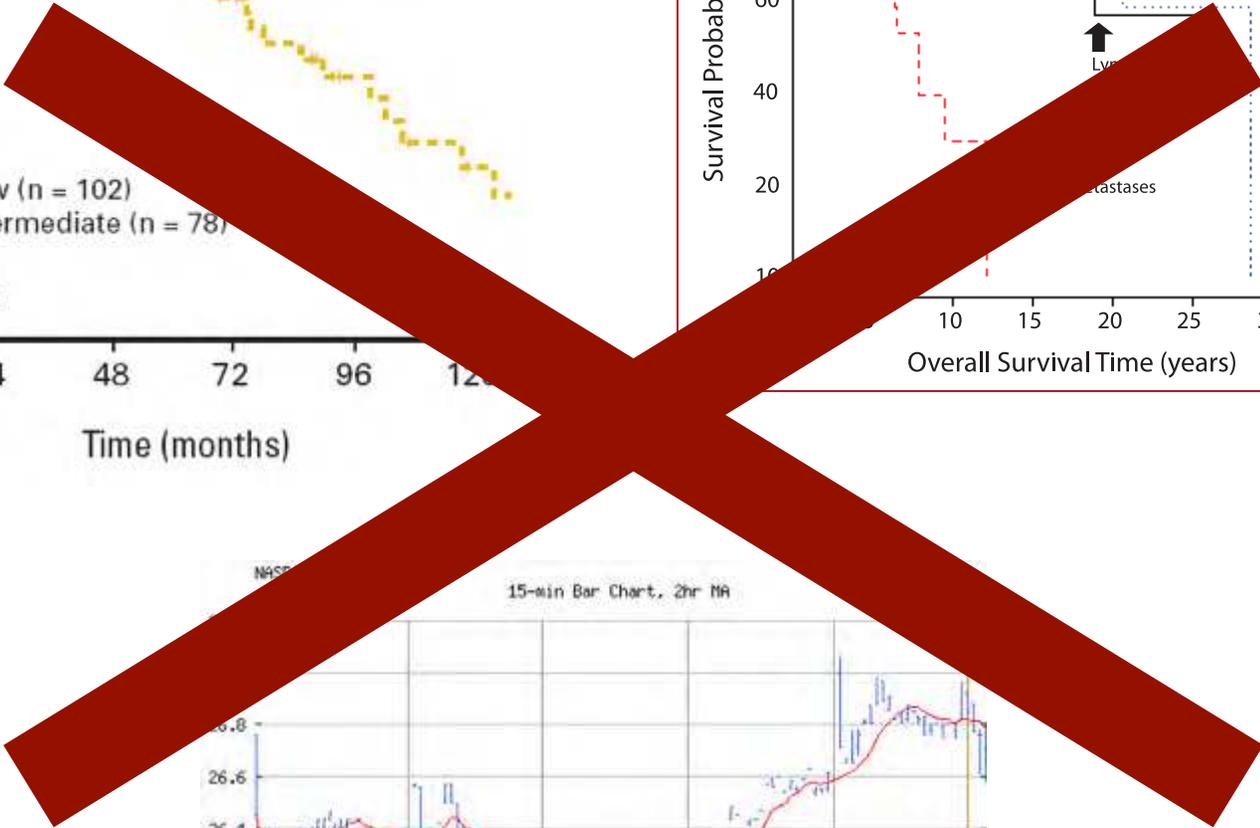
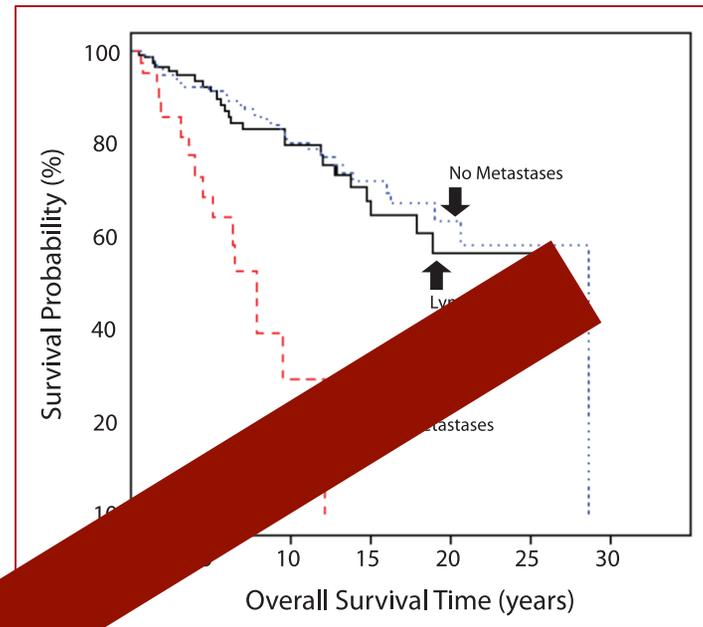
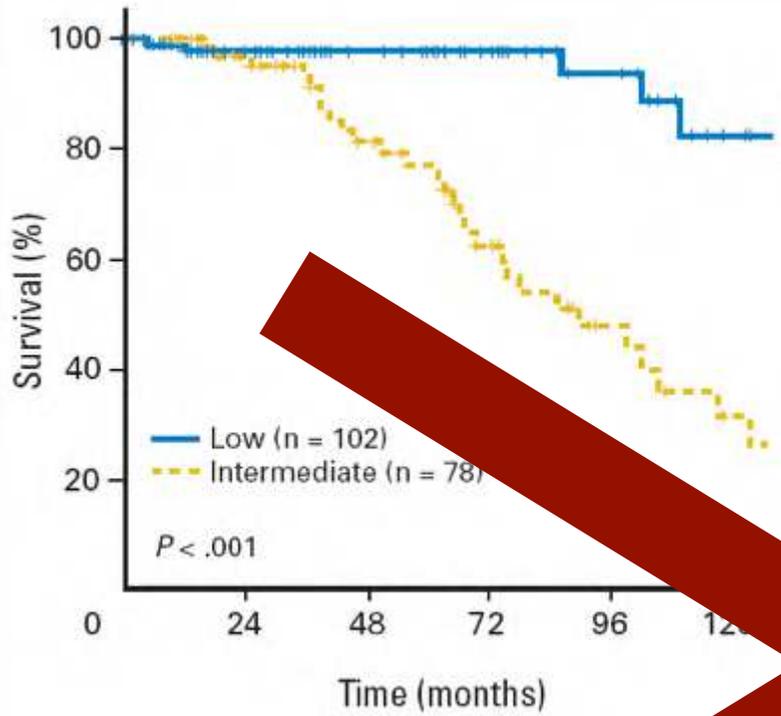


Disclosure:

This talk will be missing two usual ingredients of any surgical talk







NETs:

first and foremost are heterogeneous

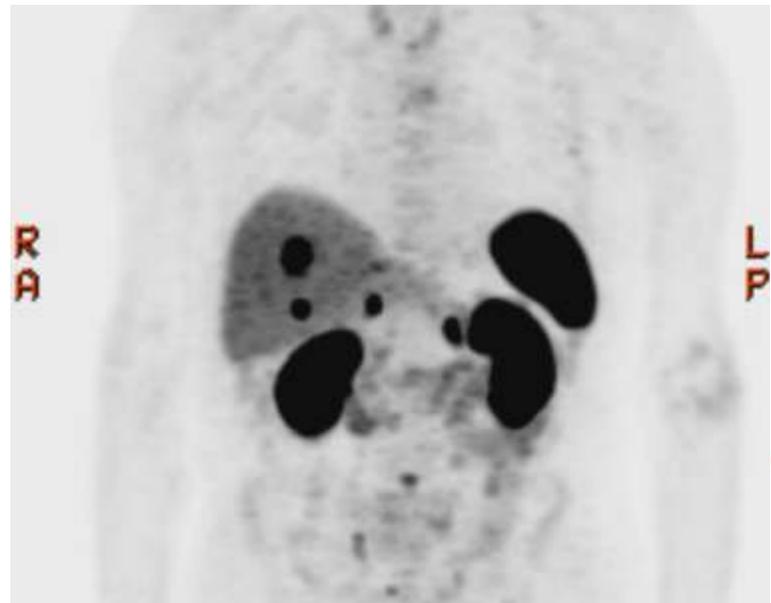
- Presentation
- Clinical behavior (incl hormonal)
- Surgical treatment



Surgery for NETs

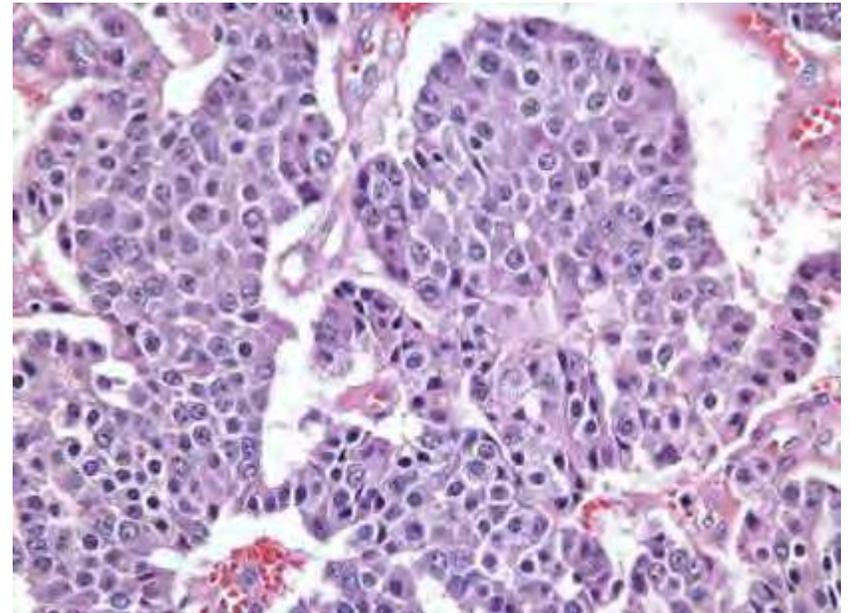
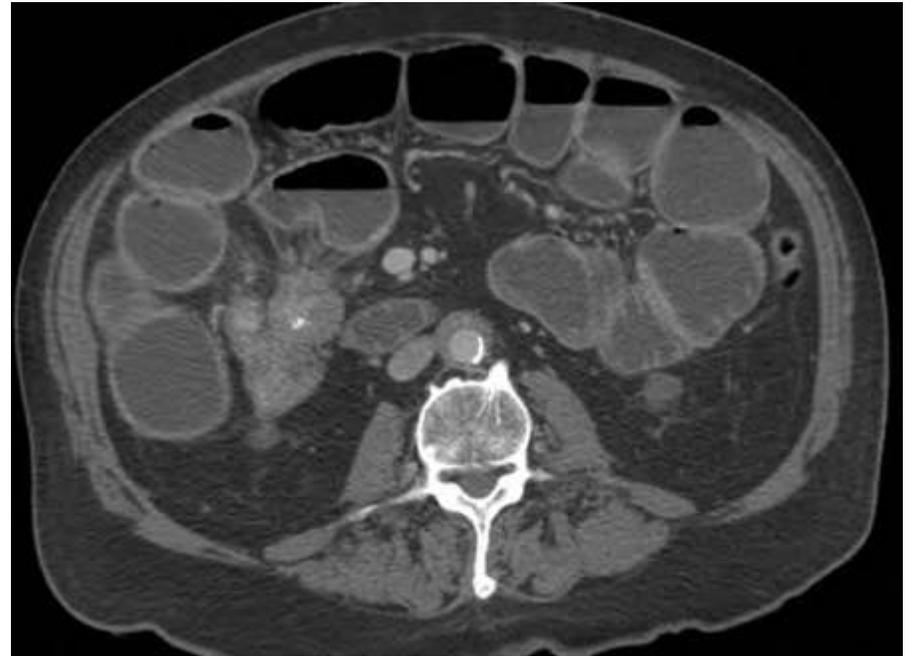
Generalizations:

- Localized disease (nearly) always merits resection
- Resection of metastases, when complete (or nearly complete) resection feasible, often improves survival



Surgery for NETs

- Resection of primary is sometimes indicated even in the setting of unresectable metastatic disease to control symptoms or allow regional therapy of mets
- Outcome is closely tied to tumor features (degree of differentiation, Ki-67)



What are we doing better?

- More invasive and less invasive
- Safer despite doing more

- Customizing approach
- Sequencing treatment strategies



Less invasive

“minimally invasive surgery”

= laparoscopic and robotic surgery

- Progressively better tools (incl the robot itself)
- Surgeon know-how



Minimally invasive surgery

- Universal benefits:
 - ↓ pain
 - ↓ narcotics
 - ↓ hospitalization
 - ↓ wound complications
 - ↓ immune compromise
 - faster return to work/family/life



Less invasive

- **Laparoscopic and robotic surgery**
 - Bowel resection
 - Enucleation of small PNETs
 - Left (distal) pancreatectomy
 - Liver resections
 - Whipple pancreaticoduodenectomy

More invasive

- NET patients often present with advanced disease
- Many of these patients were, not long ago, thought to be beyond “resectability”
(or may still be thought to be unresectable if they don't find their way to the right surgeon)

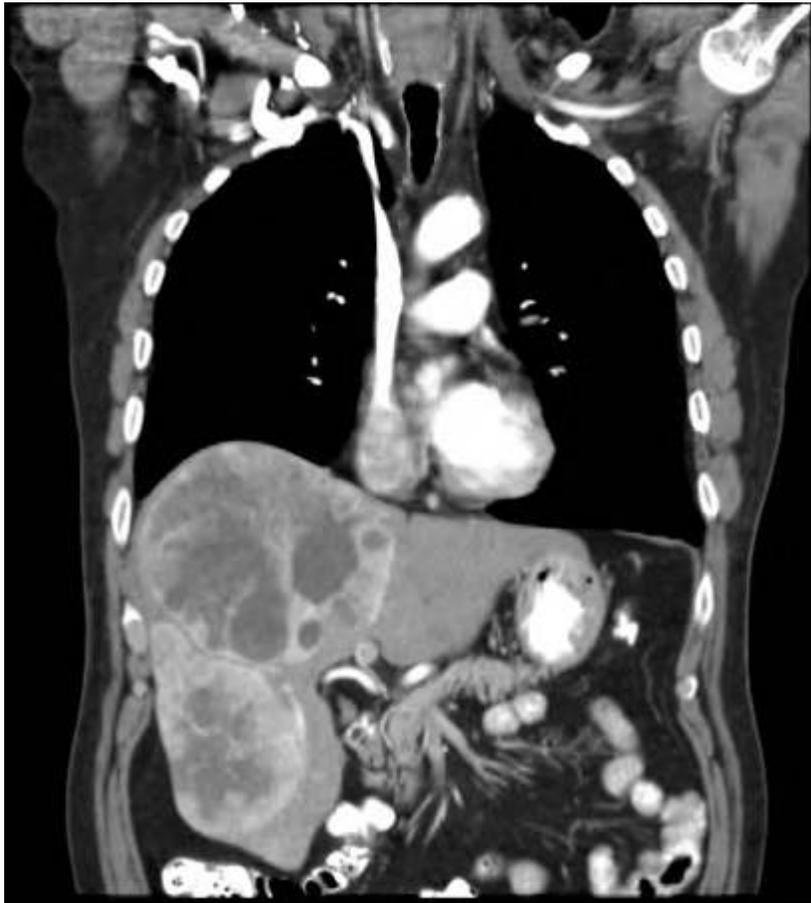
Pushing the boundaries

- Extended liver resections
- Two stage-liver resections
- Multivisceral resections
- Resection of tumors involving critical blood vessels

Aggressive surgery is warranted for large tumors and extensive disease in those that have favorable pathologic characteristics

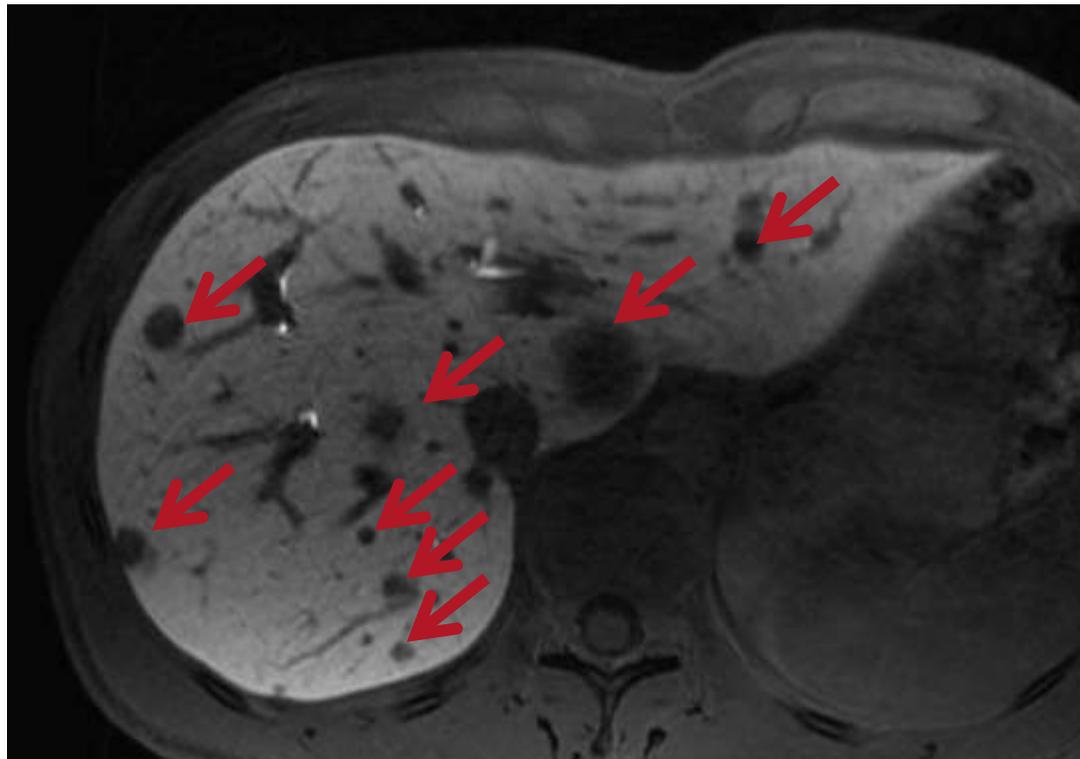


More invasive



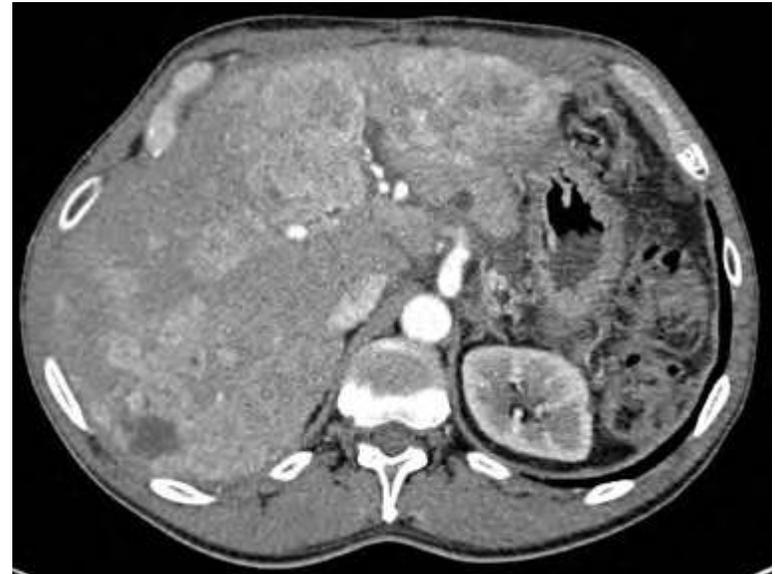
With better understanding of disease

- E.g., for ileal carcinoid liver mets, try to avoid anatomic hepatectomy in favor of wedge resections and ablations (to save liver for a rainy day).



Resection of primary despite liver metastases?

- Metastases very often multifocal at presentation precluding resection
- More “tools: against liver than systemic disease
- In some cases it makes sense to resect primary to allow liver directed therapy
 - chemo and radioembolization
 - transplantation



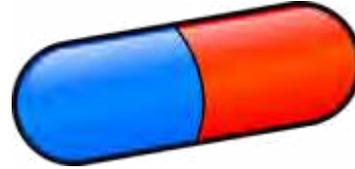
But still safer.

- Morbidity and mortality of these major operations (pancreas, liver, etc) have significantly improved *at experienced centers* despite more “aggressive” resections and being more inclusive in which patients are considered for surgery

Customizing approach?

- heterogeneous at presentation
- unpredictable clinical course
- “indolent” but so often recurrent

biologics



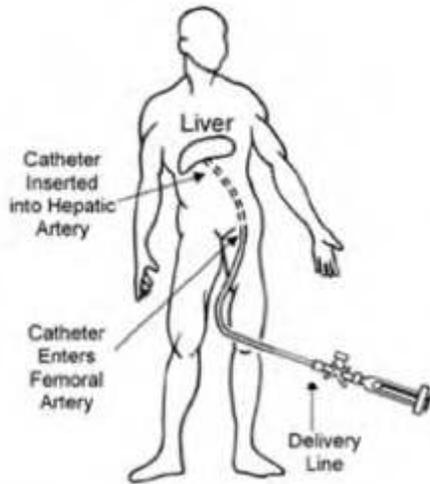
surgery



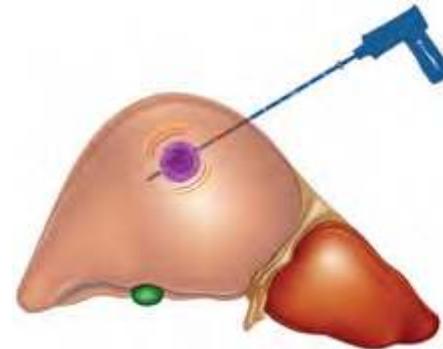
chemo



TEAM



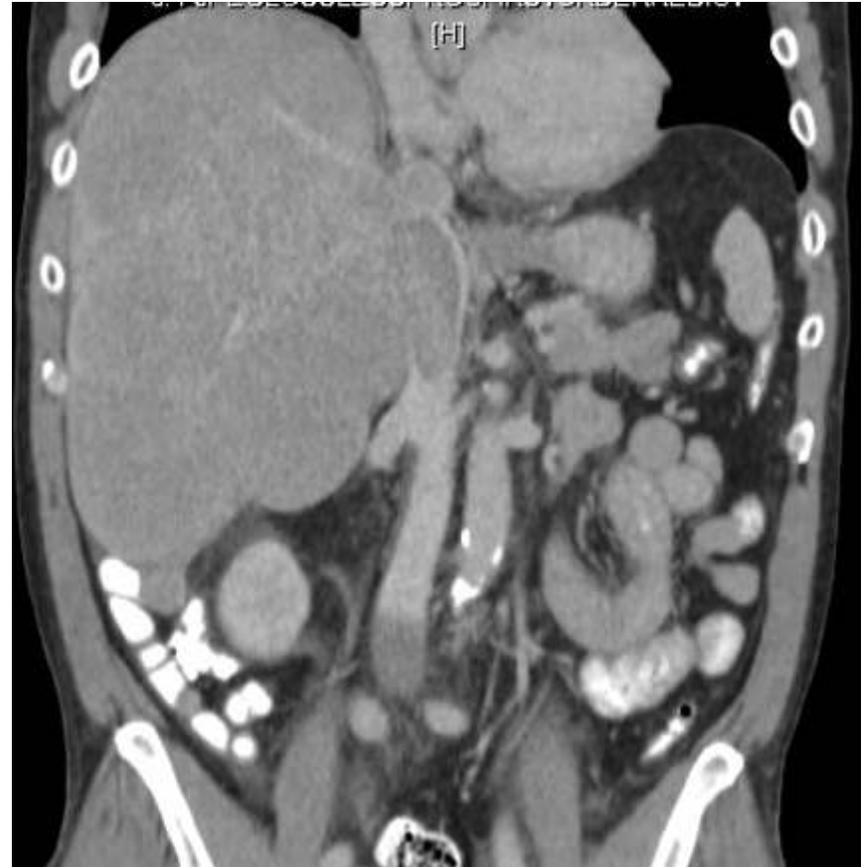
intra-arterial



ablation

Sequencing of treatments

- Many patients go through a number of the therapies before or after surgery
- Surgery the most powerful weapon in the arsenal, so it should be deployed for greatest effect
- Hard to test these varied strategies prospectively



Conclusions

- Surgery for NETs is incrementally improving
 - less invasive for some
 - more radical for others
 - based on better understanding of the disease
 - better strategizing with the nonsurgical therapies
 - still arguably the most powerful tool offering sure for some and contributing to disease control for others



Thank you

