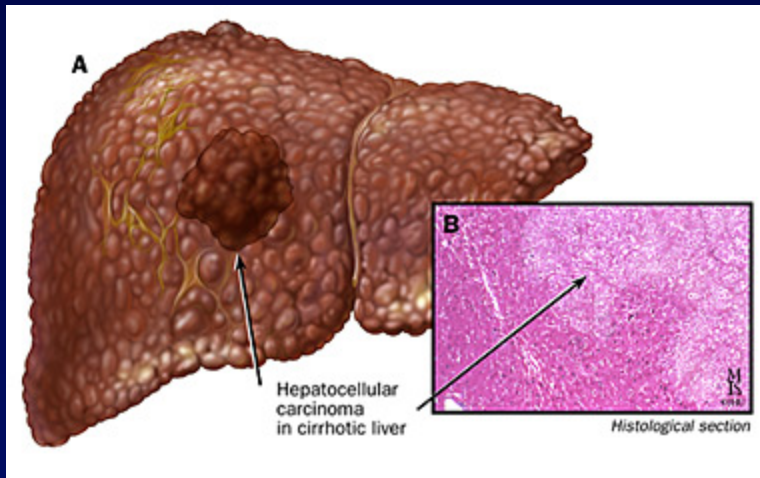


# Hepatocellular Carcinoma: Diagnosis and Management



**Pippa Newell, M.D.**

**Medical Director, Liver Cancer Program  
Providence Cancer Center, Portland**

**Hepatobiliary Surgeon  
The Oregon Clinic**

**[philippa.newell@providence.org](mailto:philippa.newell@providence.org)**

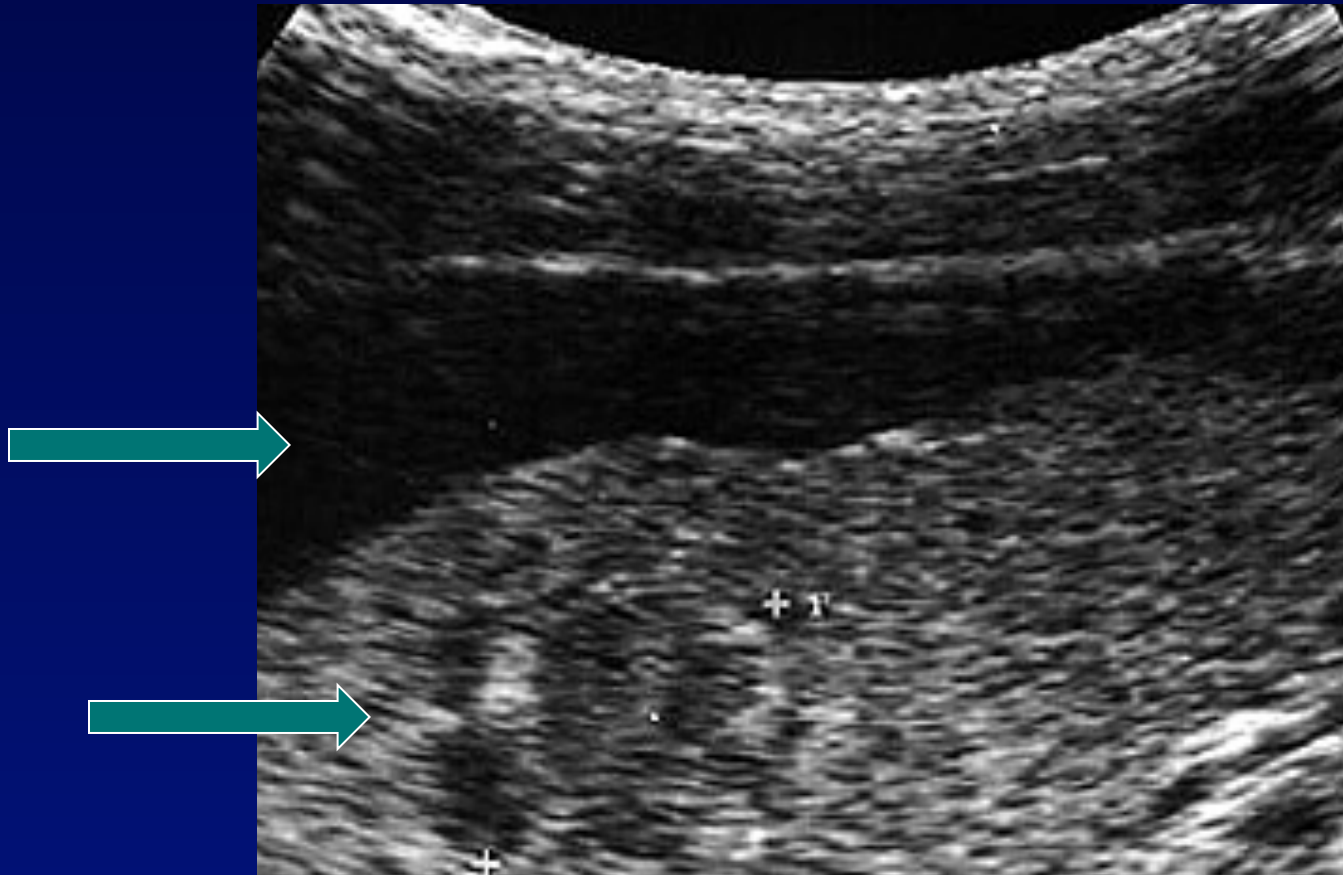
**Cell: 646-320-8488**

**Liver Cancer Clinic: 503-215-8650**



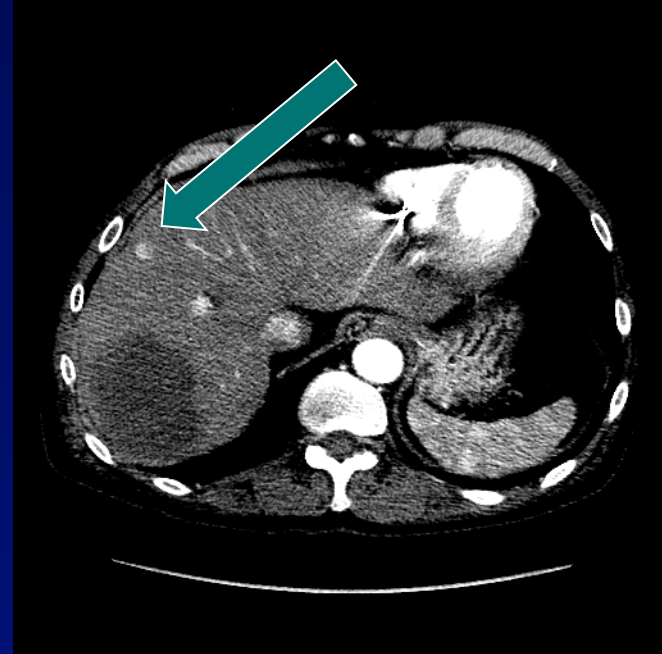
**May 24, 2017**

# Case Study 1: Ultrasound reveals 1.5 cm mass and ascites



# Case Study 2: Large multifocal HCC

- Homeless; from Warm Springs
- Chronic hepatitis C, never treated
- Shortness of breath



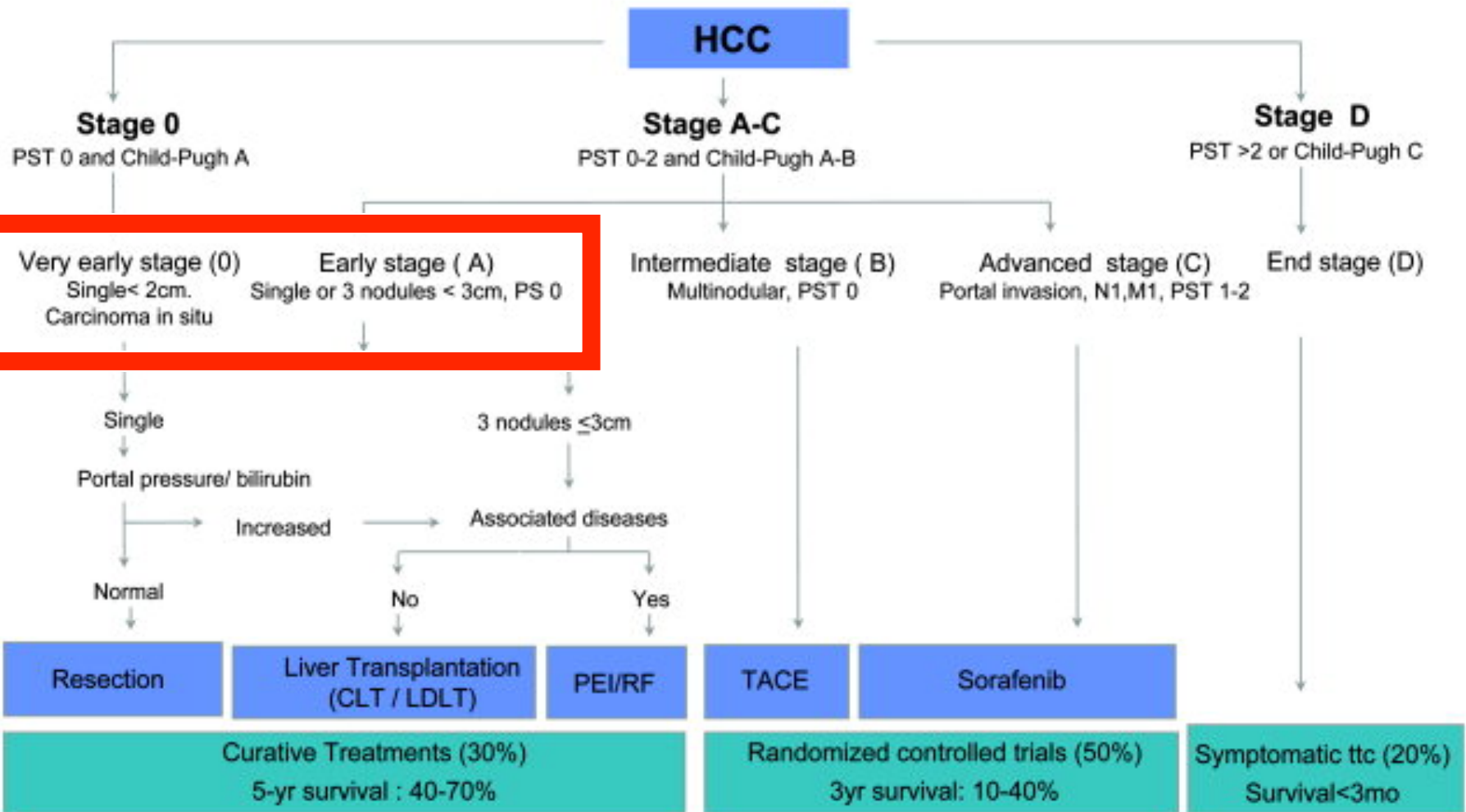
# Discussion Points

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- Management – Algorithms and Dilemmas
  - Early
  - Intermediate
  - Advanced
  - “Terminal”
- Who ‘owns’ the patient

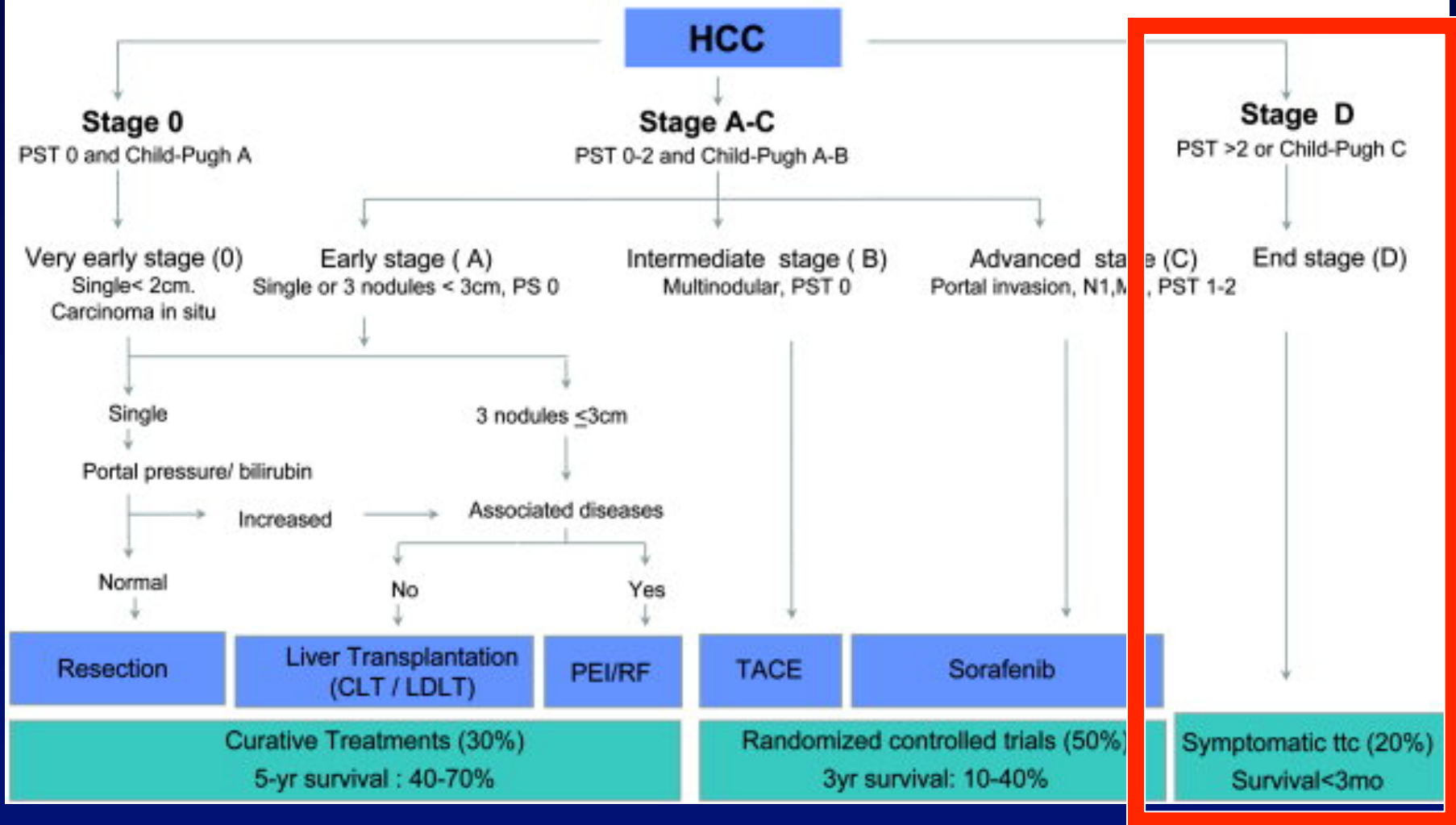
# Treatment Based on BCLC Staging

## Barcelona Clinic Liver Cancer (BCLC) Staging System, 2008



# Treatment Based on BCLC Staging

## Barcelona Clinic Liver Cancer (BCLC) Staging System, 2008





# Liver Transplantation

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- 61% 5 year survival (intention to treat)
- 18% removed from waiting list due to disease progression or death
- Treats liver disease and cancer
- Low rate of HCC recurrence
- Milan Criteria:
  - 1 tumor less than 5 cm
  - 3 tumors less than 3 cm

# MELD Exception Points

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- 2-5 cm HCC: Arterial enhancement with venous washout → MELD exception
- If 2-3 HCC, all 1-2 cm:
  - Rim enhancement (capsular enhancement)
  - Biopsy
  - Growth > 50% on serial CT/MRI done < 6 months apart



# MELD Exception changes as of October 8, 2015

- Balances HCC exceptions and patients with high biologic MELD
- New applications after 10/8/15:
  - Listed at biologic MELD for 6 months
  - After 6 months, priority exception of 28
  - New cap for HCC patients at 34
    - MELD 35 policy: pts with MELD>35 participate in regional sharing of organs

# Liver Resection for HCC

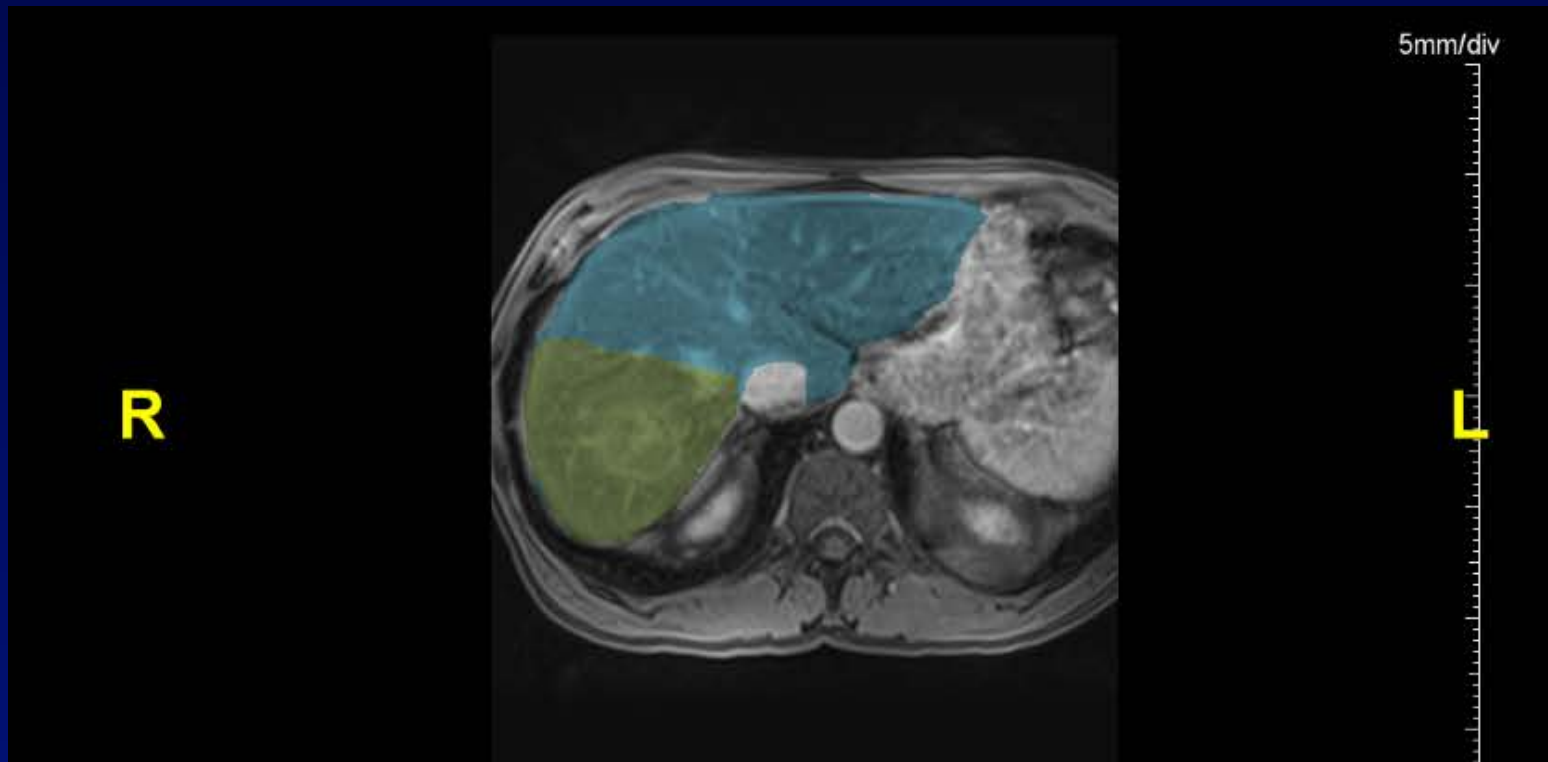
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- Patients with no portal hypertension
  - Platelet count  $> 100$
  - No ascites
  - No varices
  - No encephalopathy
  - Good performance status
- Only 20% patients eligible for resection
- Adequate liver remnant

# Adequate future liver remnant

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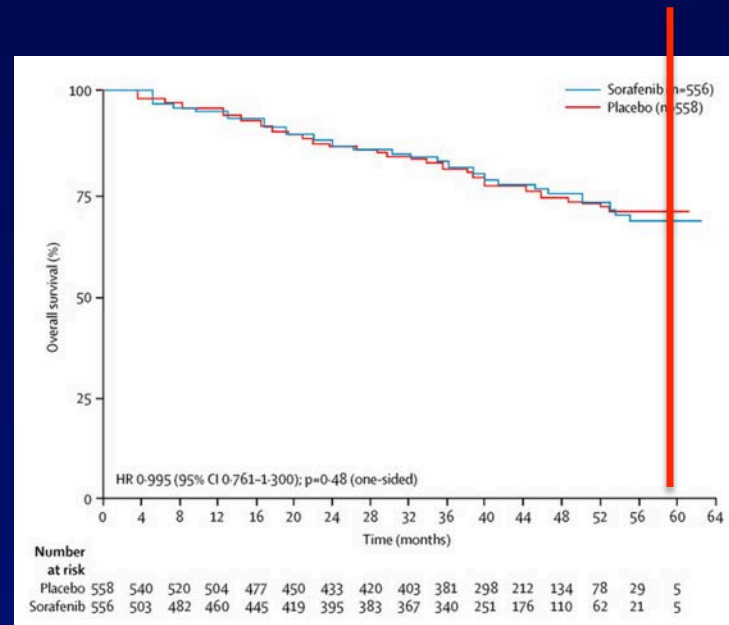
- Volumetrics: >40% of original volume



# Resection

## Solitary tumors < 5 cm

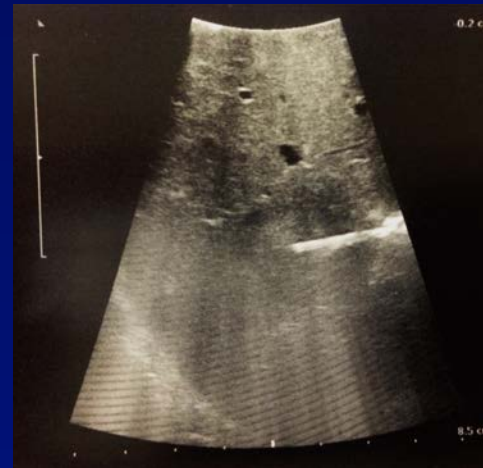
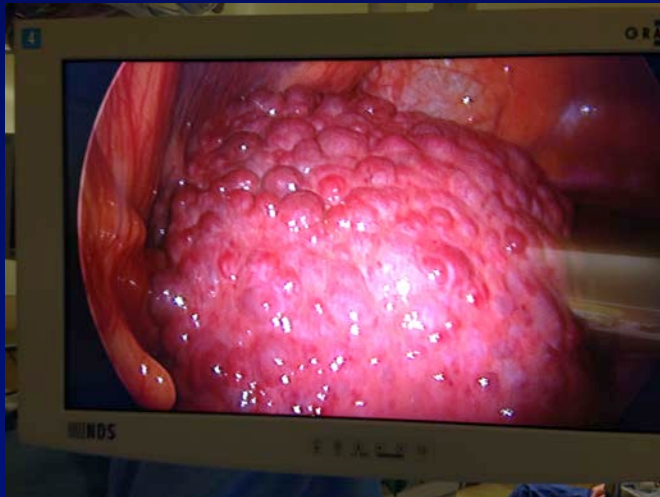
Resection 5 year survival in  
>1000 patients in RCT: 70%



# Radiofrequency Ablation (RFA)

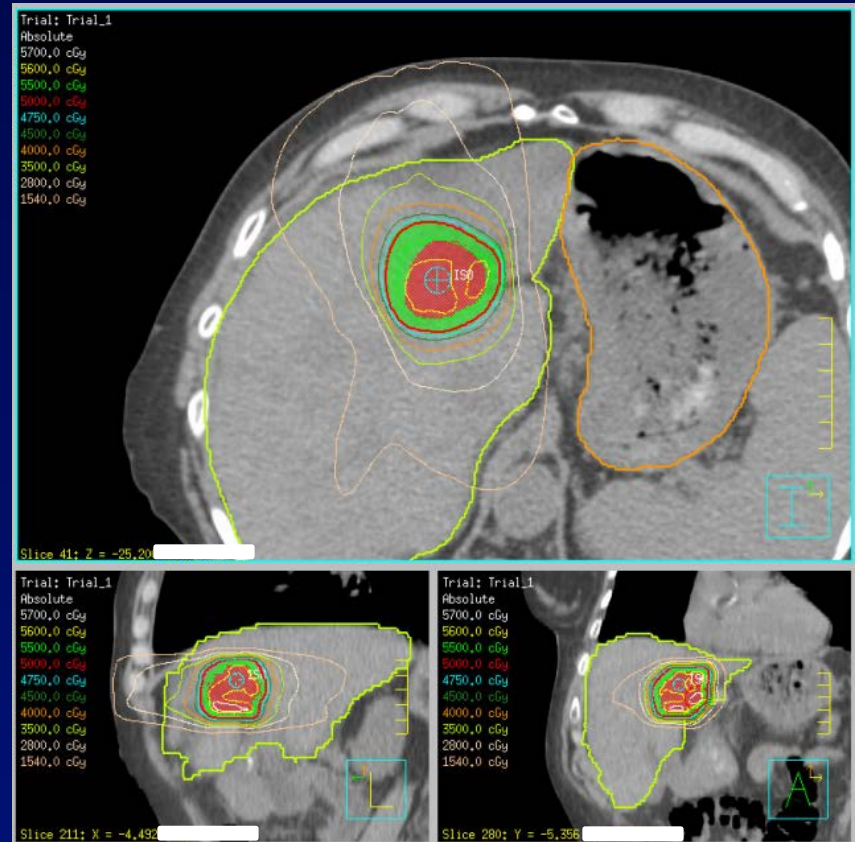
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- Limited to patients with HCC  $< 3$  cm,  $>2$  cm away from bile ducts
- RCT x 2: Resection versus RFA
  - Survival equivalent if solitary  $< 3$  cm; recurrence slightly higher



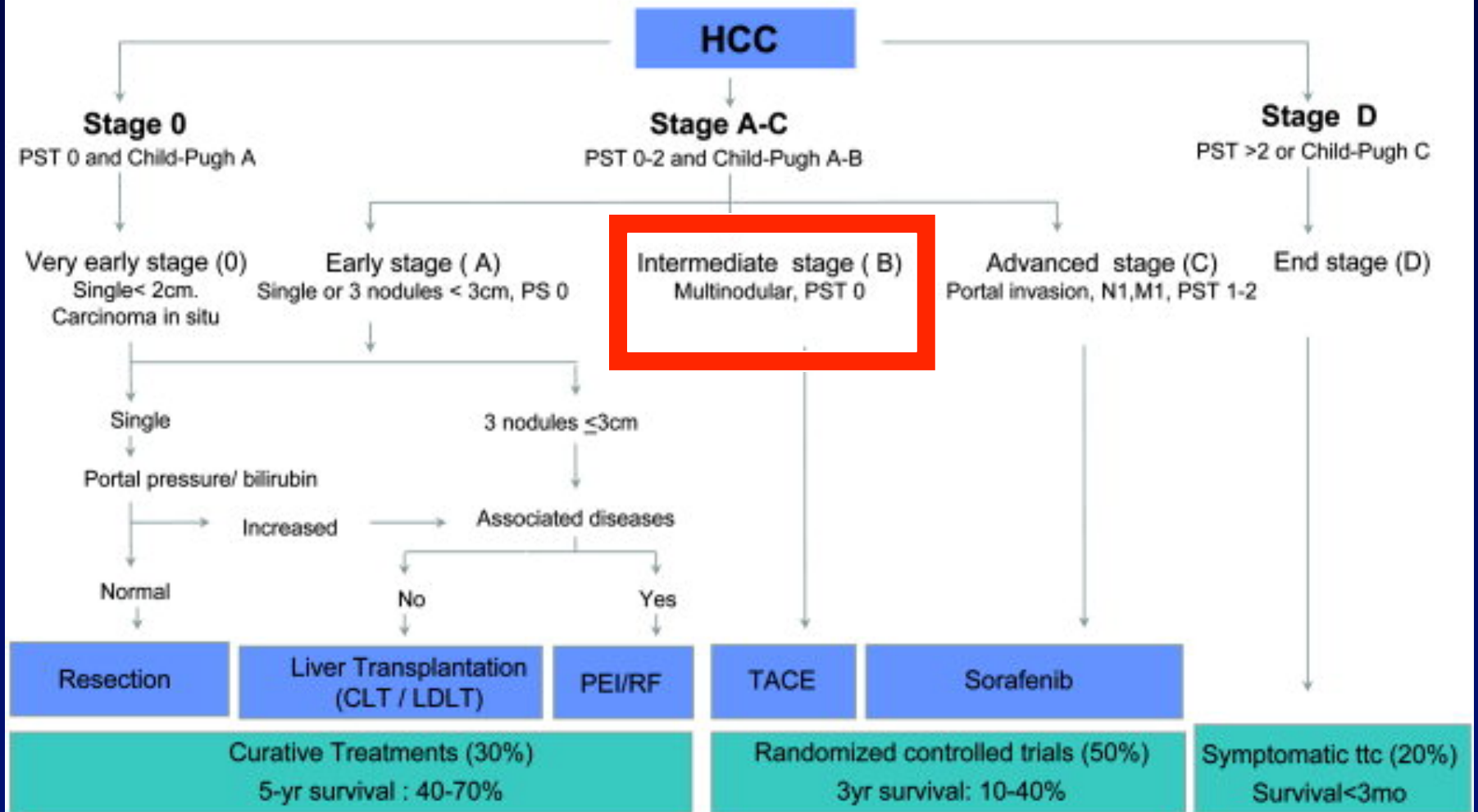
# Stereotactic Body Radiotherapy

- High dose radiation given over 5 or fewer fractions
  - Typical ablative doses are  $>8\text{Gy}$  per fraction
  - Narrow margins: 3-5mm
  - Steep dose fall off
- Follow up limited



# Treatment Based on BCLC Staging

## Barcelona Clinic Liver Cancer (BCLC) Staging System, 2008





# Intermediate Stage: Endoluminal Treatment

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- Transarterial chemoembolization
- Transarterial radioembolization
  - Yttrium 90 (Y-90)

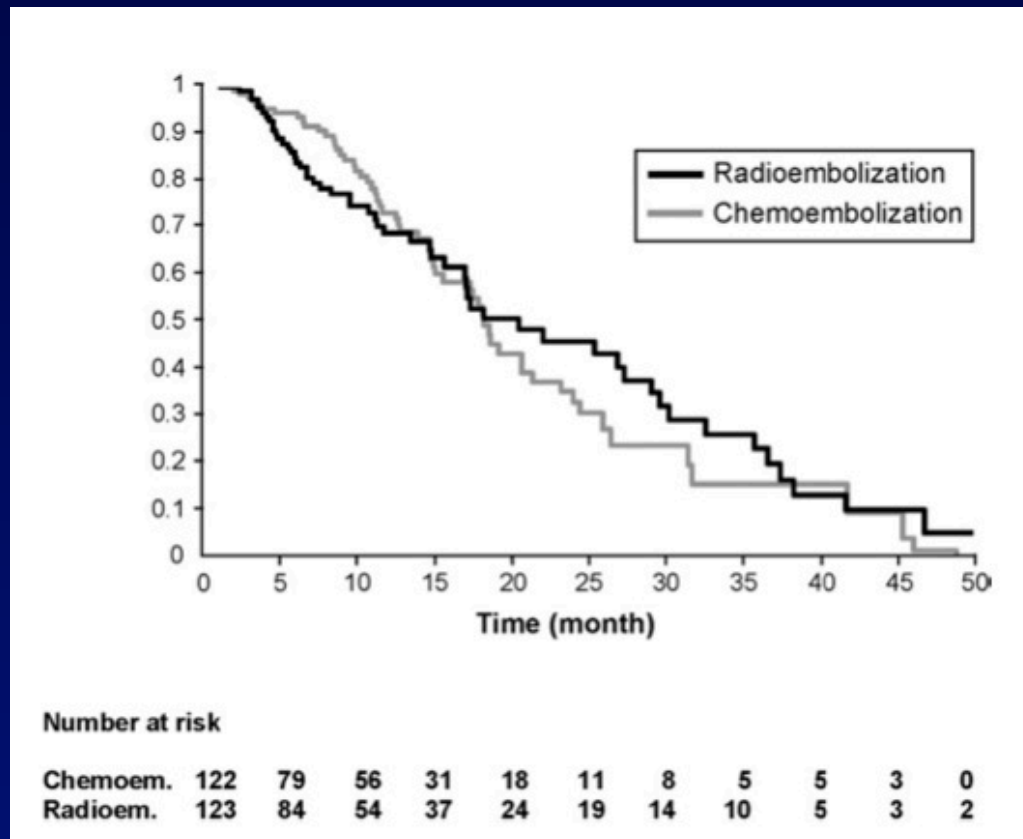


# Intermediate Stage: Endoluminal Treatment

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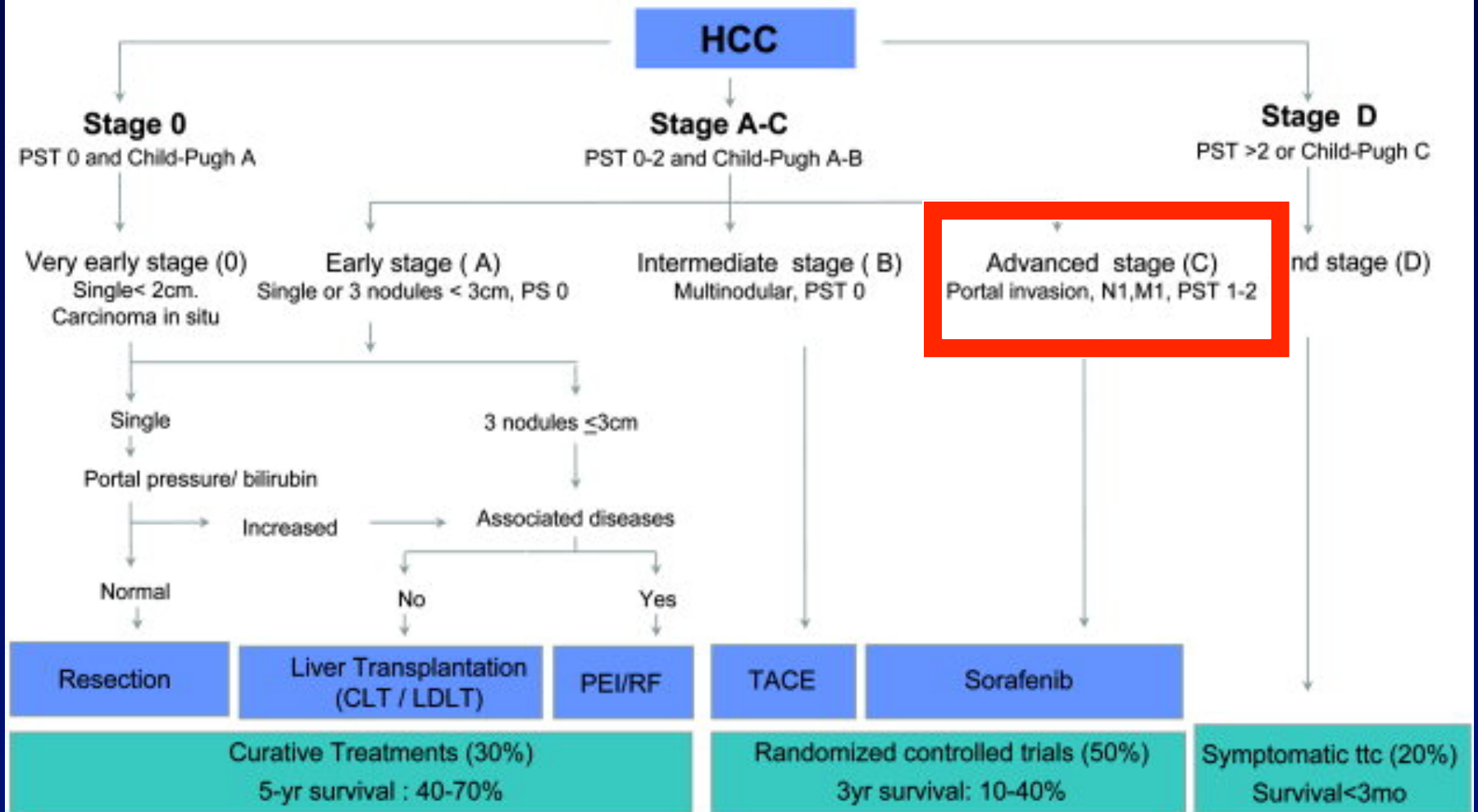
- Child-Pugh A or B
- Bilirubin  $< 2$  (occasionally up to 2.5)
- Transarterial chemoembolization
  - Drug-eluting beads embolic
- Transarterial radioembolization
  - Yttrium 90 (Y-90)
  - Nonembolic
  - Selected cases w/ portal vein tumor thrombus

# Survival Curve TACE vs. Y90



# Treatment Based on BCLC Staging

## Barcelona Clinic Liver Cancer (BCLC) Staging System, 2008

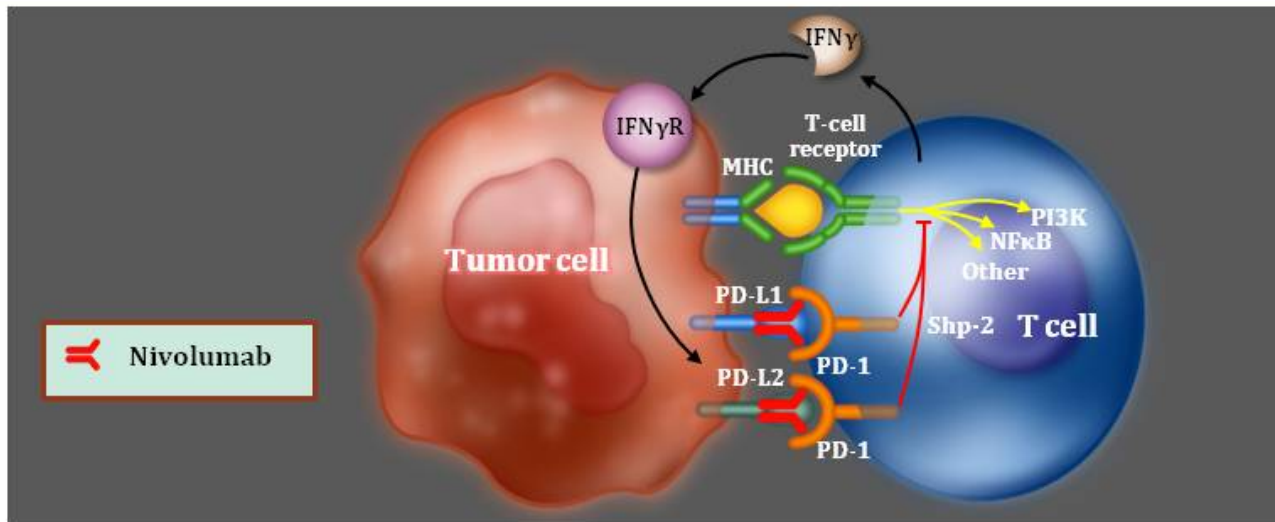


# Advanced Stage: Systemic Treatment

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- Sorafenib
- Median survival **10.7 months** with sorafenib vs. 7.9 months in placebo group
- Regorafenib = second line (FDA approved April 2017)
- Immune therapy
  - Trials ongoing

# Phase 1/2 Safety and Antitumor Activity of Nivolumab in Patients With Advanced Hepatocellular Carcinoma (HCC): CA209-040



- Nivolumab is a fully human IgG4 anti-PD-1 monoclonal antibody that selectively blocks the interaction between PD-1 and PD-L1/PD-L2,<sup>1</sup> restoring T-cell immune activity directed against the tumor cell

1. Topalian SL, et al. *N Engl J Med.* 2012;366:2443-2454

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# Preliminary Overall Survival

Overall Survival Rate, % (95% CI)*	Total (N=47)
At 9 months	70 (52–82)
At 12 months	62 (42–76)

\*Overall survival estimated using Kaplan-Meier method

**Median survival: >13 months**



# Who takes care of this patient?

ER

PCP

Palliative  
Care

GI

Medical  
Oncology

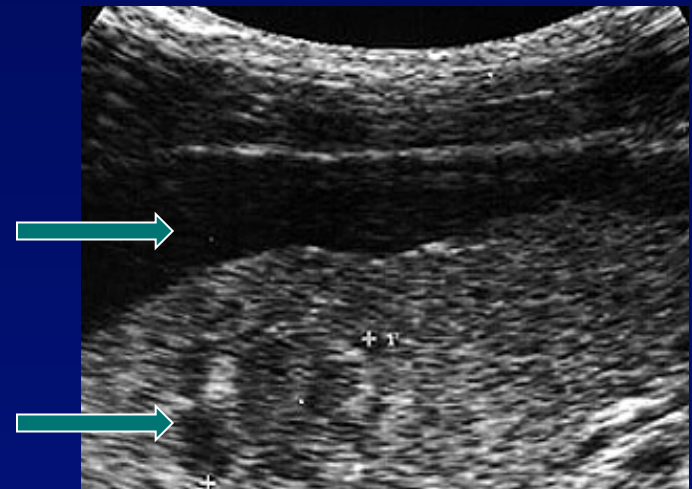
Surgery



Interventional  
Radiology

# Case Study 1: Ultrasound reveals 1.5 cm mass and ascites

- Can you control ascites/encephalopathy?
  - Yes → ablation or radiation
  - No →
- Transplant candidate?
  - Yes → Wait until 2 cm
  - No → Palliation



# Case Study 2: Large multifocal HCC

- Chemoembolization 8/2012
- Portal vein embolization 9/2012
  - To make the left lobe bigger
- Radiofrequency Ablation 1/2013
- Resection 2/2013



**June 2016: Disease free**

**Thank you!**

**Maybelle Clark Macdonald Foundation**

**Providence Cancer Center, Portland OR**