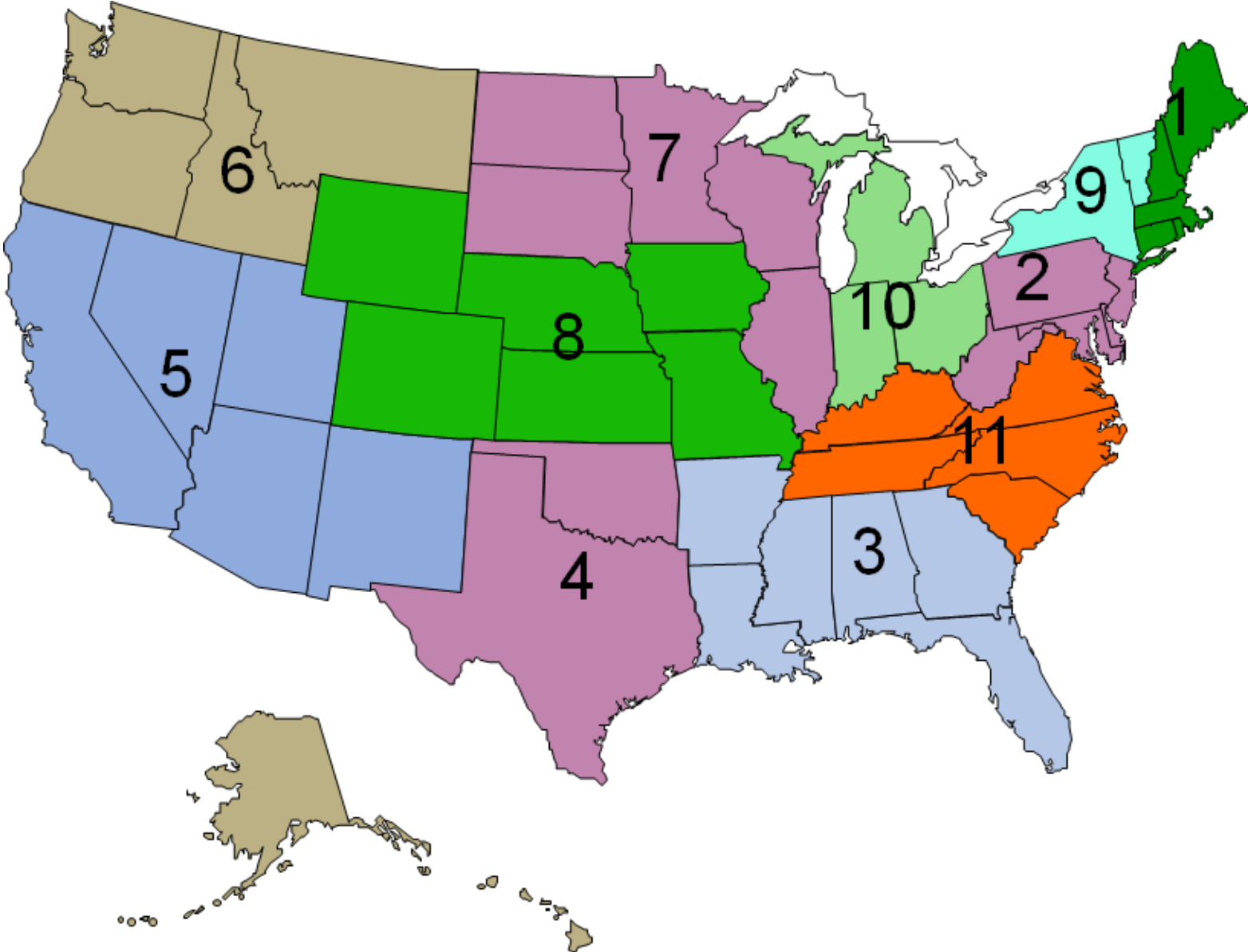


Current Trends in Liver Transplantation

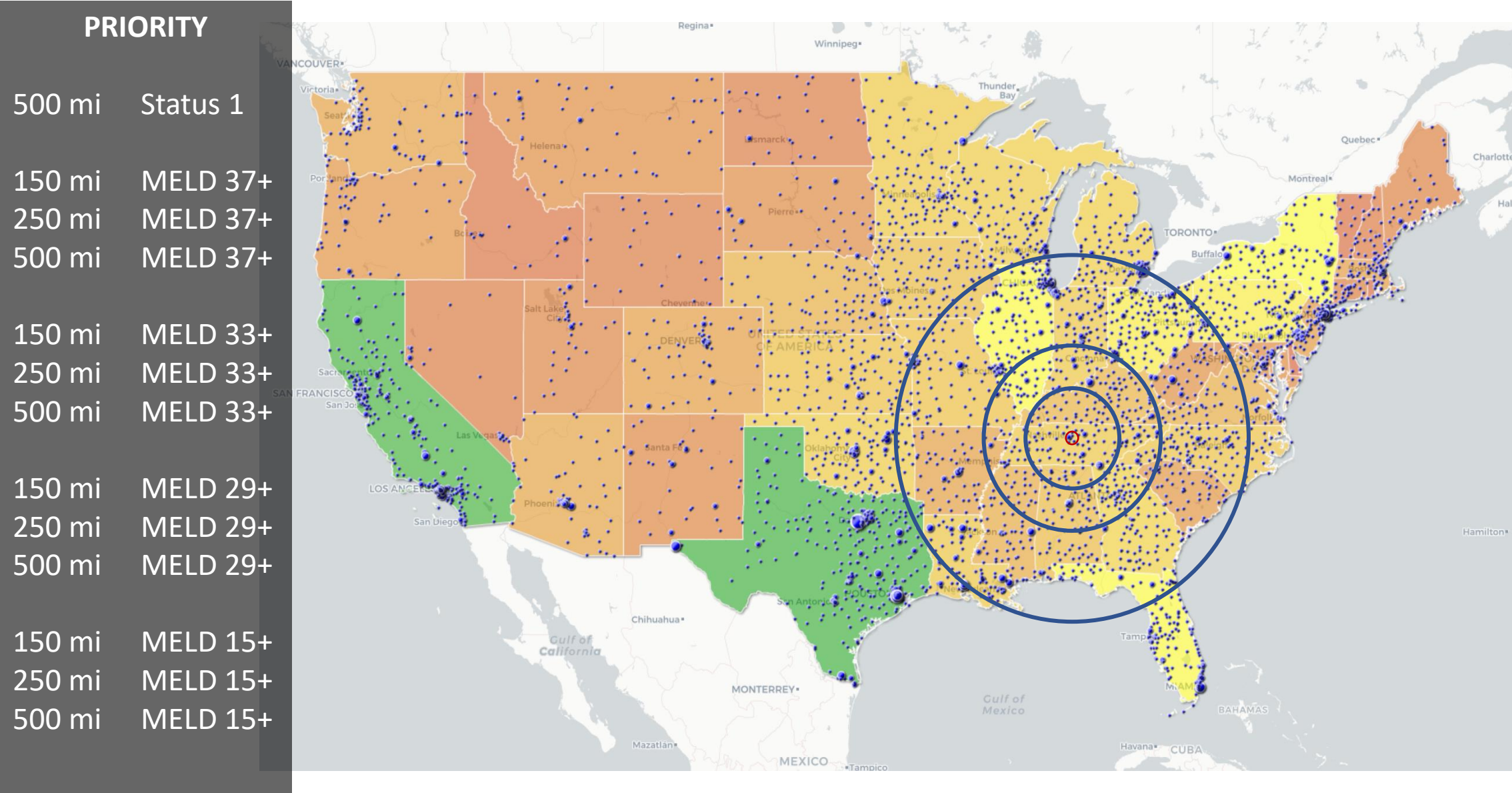
Christopher B. Hughes, MD
Surgical Director, Liver Transplantation
I have no disclosures.

Recent changes to liver allocation and MELD exceptions that have affected liver transplantation:

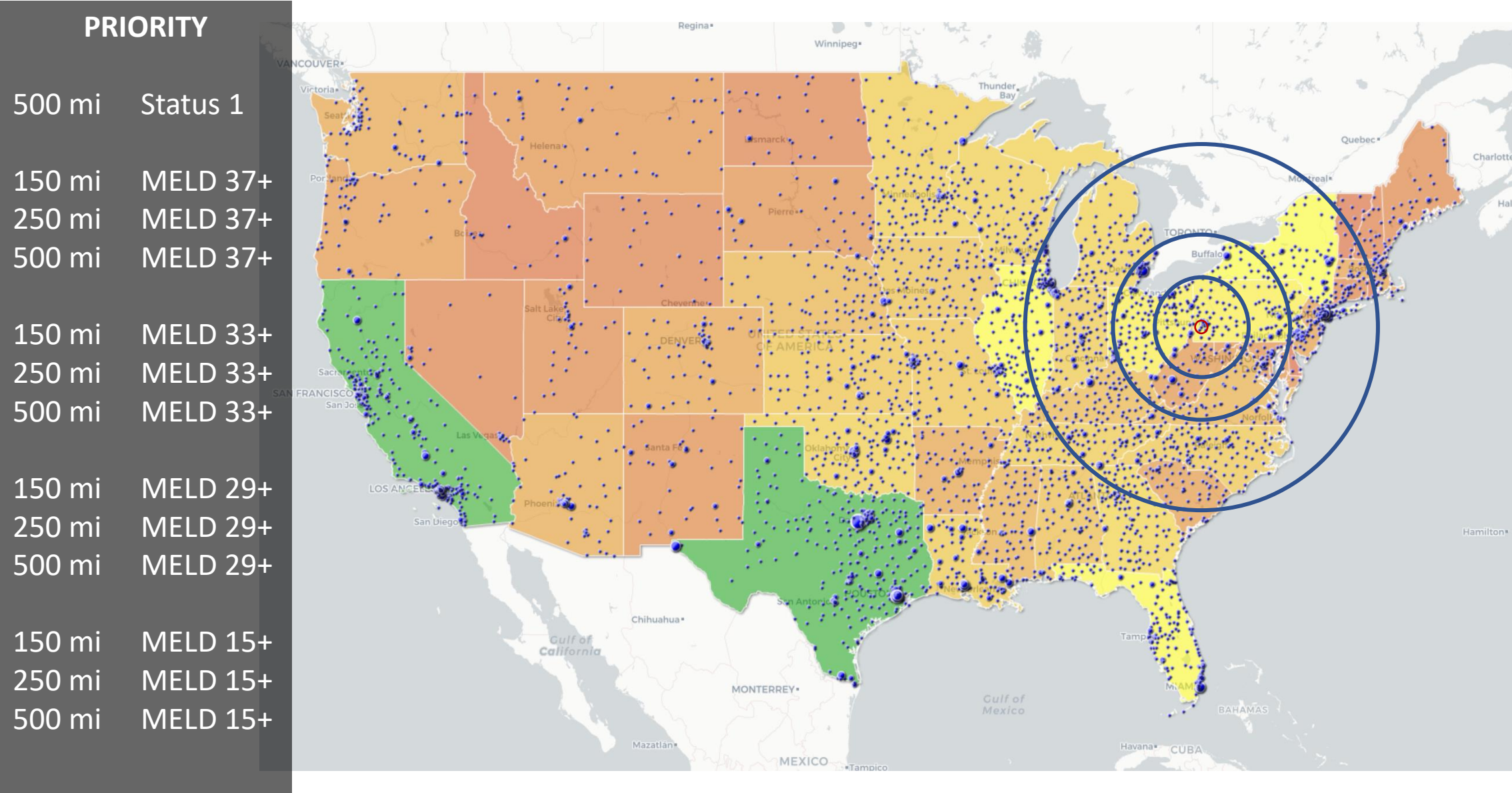
1. Conversion from “Regional” to “Concentric Circle “ allocation
2. Move to NATIONAL Liver Review Board for MELD exceptions
3. Change in HCC MELD exception rules



Concentric Circle Liver Distribution



Concentric Circle Liver Distribution



Guidance to Liver Transplant Programs and the National
Liver Review Board for:
Adult MELD Exception Review

Ascites 3

Budd Chiari..... 3

Gastrointestinal Bleeding 4

Hepatic Encephalopathy 5

Hepatic Epithelioid Hemangioendothelioma..... 5

Hepatic Hydrothorax 5

Hereditary Hemorrhagic Telangiectasia..... 6

Multiple Hepatic Adenomas 7

Neuroendocrine Tumors (NET)..... 7

Polycystic Liver Disease (PLD) 8

Portopulmonary Hypertension 9

Primary Sclerosing Cholangitis or Secondary Sclerosing Cholangitis 9

Metabolic Disease 10

Post-Transplant Complications..... 10

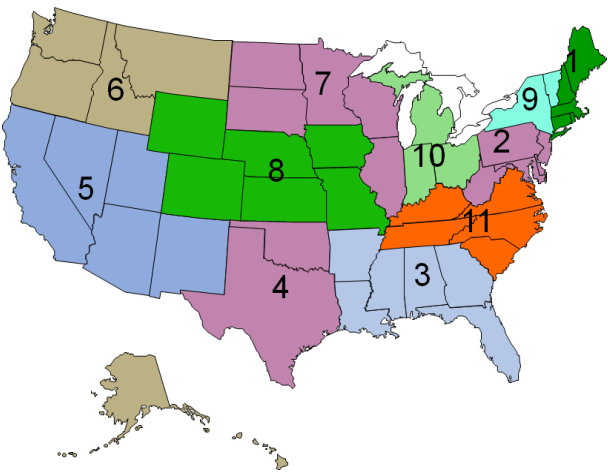
 Small for Size Syndrome 10

 Chronic Rejection 10

 Diffuse Ischemic Cholangiopathy 11

 Late Vascular Complications..... 11

Pruritus 11



“.....MELD exception for ascites is not recommended.”

--Hyponatremia and elevated creatinine (renal failure) should eventually increase MELD so the patient moves up the list

Bottom line: MELD exceptions are more difficult to obtain, so patients are sicker by the time they receive a deceased-donor organ

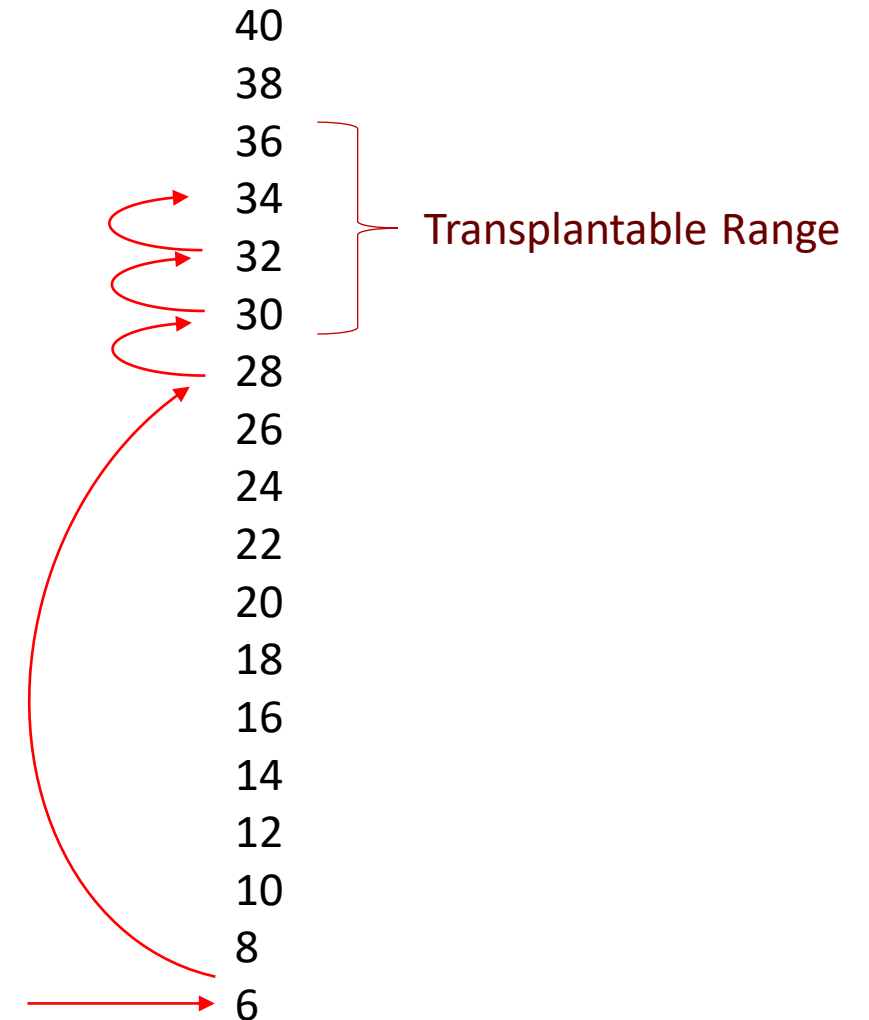
MELD Scale

If patient is within Milan Criteria (one tumor < 5cm or 3 tumors < 3 cm) they may be eligible for MELD exception

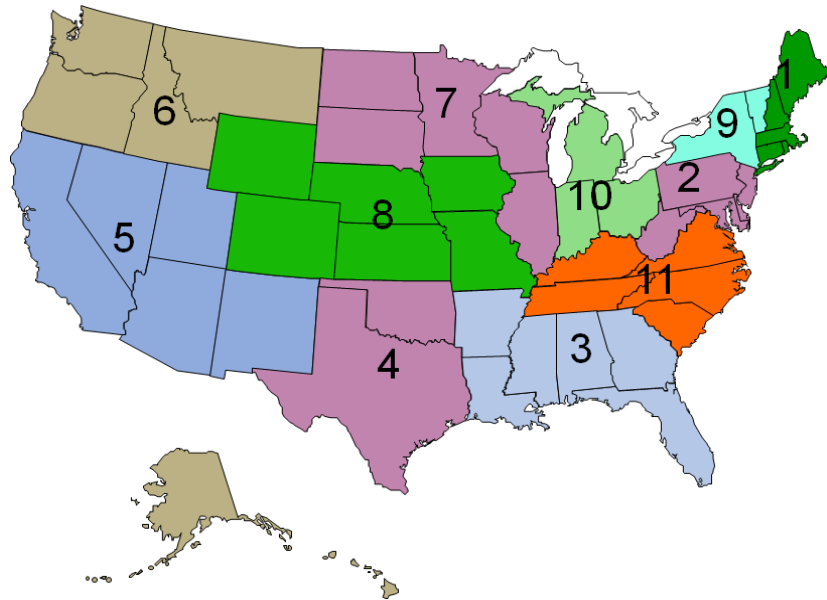
Prior System: MELD score of 6 for 6 months, then MELD 28, then increase MELD score 10% every 3 months (cap 34)

Would generally take about a year to get a person into transplantable range

UNOS data showed HCC patients may be disproportionately advantaged by this system

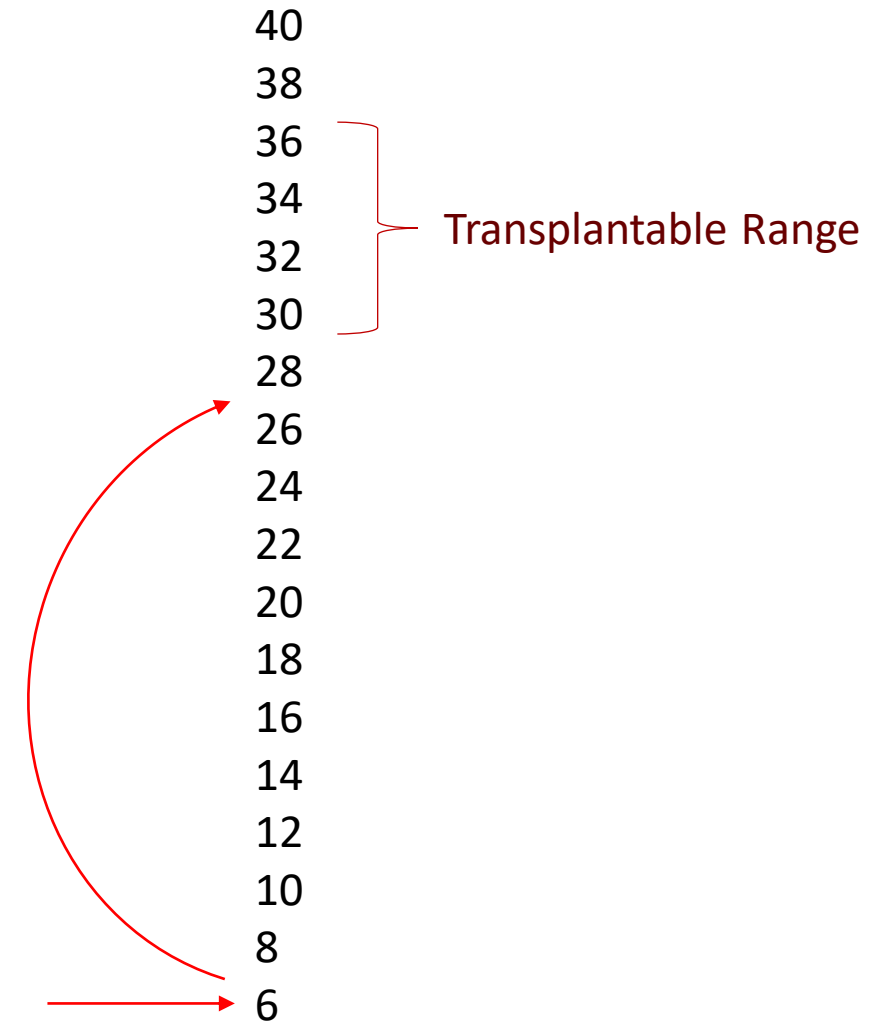


HCC Exception based on “Median MELD at Transplant”

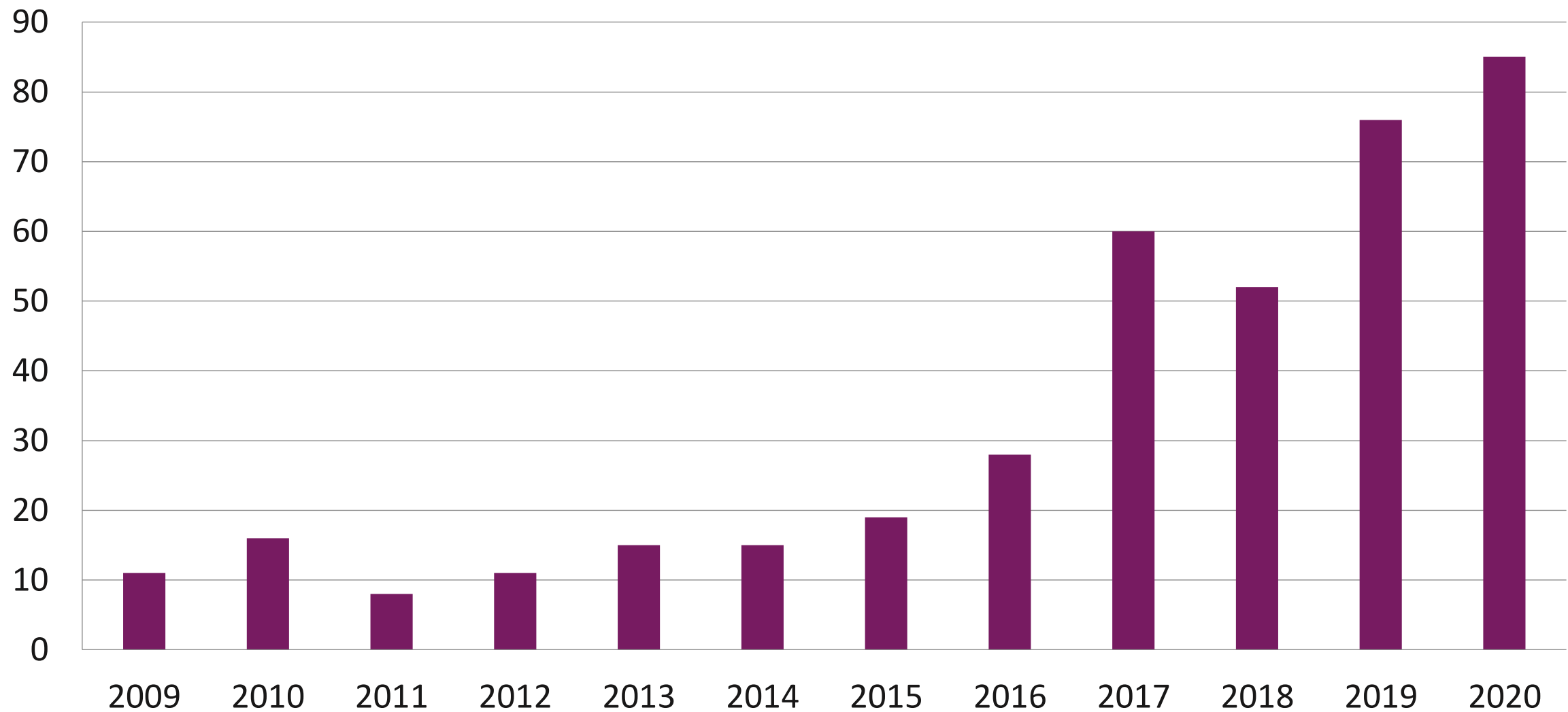


Current System: MELD score of 6 for 6 months, then **MMaT-3**

MELD Scale



LDLT by YEAR



	GRAFT SURVIVAL (%)	PATIENT SURVIVAL (%)
OBSERVED	92.2	93.0
EXPECTED	91.1	95.6
NATIONAL	91.1	95.6

Good results allow us to take on high-risk cases, such as advanced tumor cases:

Intrahepatic Cholangiocarcinoma and Mixed HCC/CCA
Metastatic Colorectal Cancer

SH

65 yo female with NASH cirrhosis

Hepatic encephalopathy, SR shunt

Dec 2018 USG showed 3.5 cm mass in right lobe

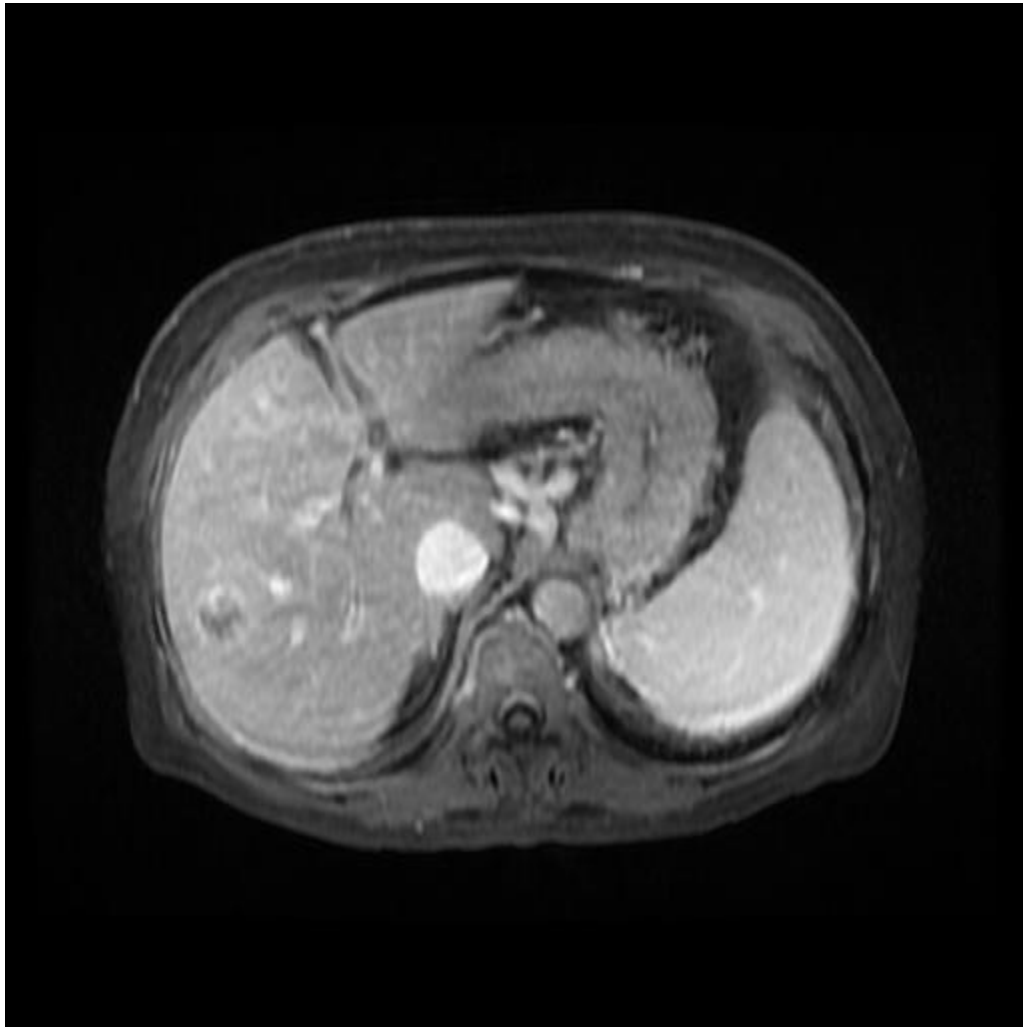
3/5/19 bx shows mixed HCC-Cholangiocarcinoma

In April 2019, her AFP was 105, and CA-19-9 was < 2

TACE in May 2019

Started Gemcitabine/Cisplatin in May 2019—continued for 6 months

Negative workup for extrahepatic disease including negative bone scan

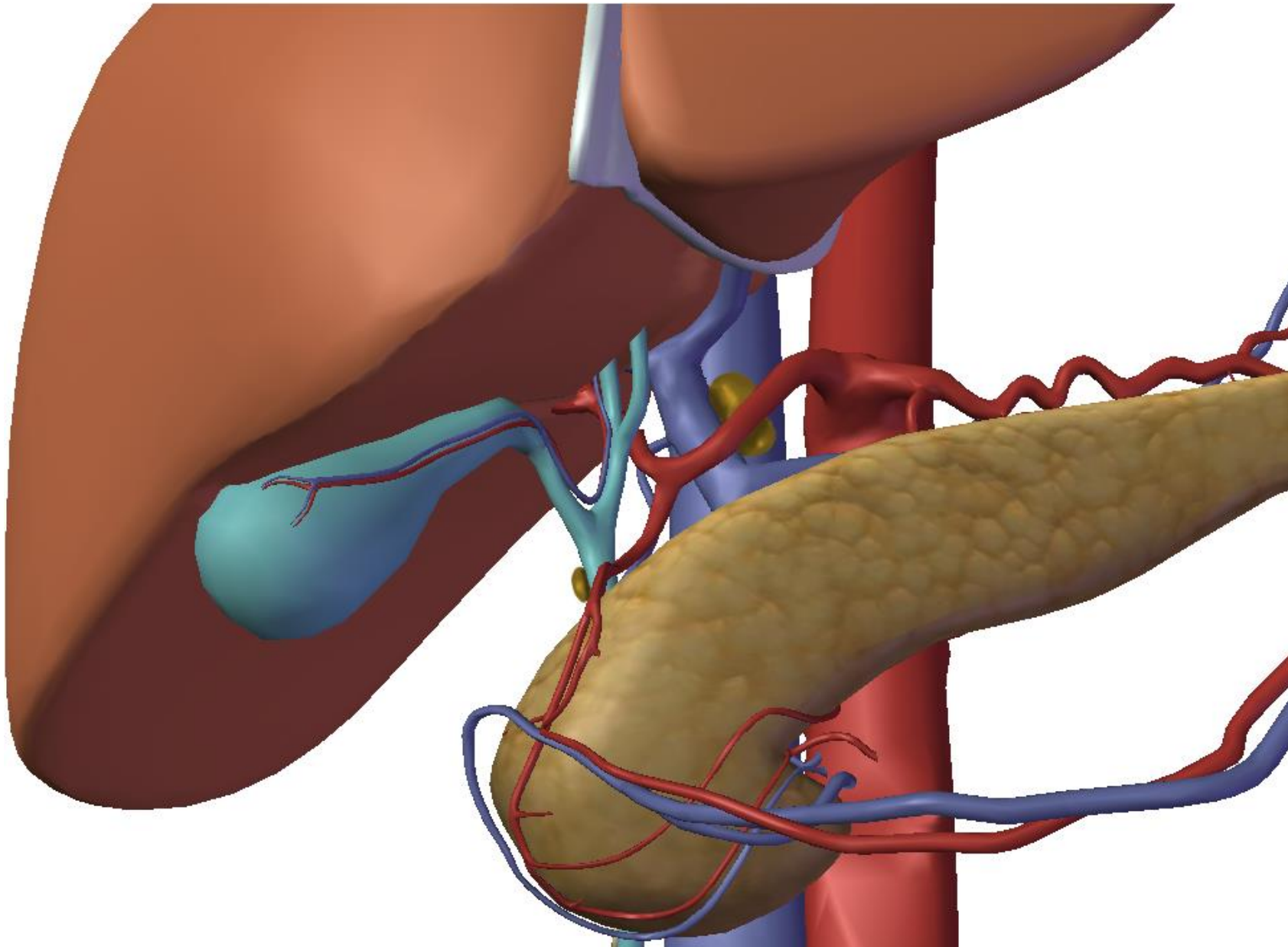


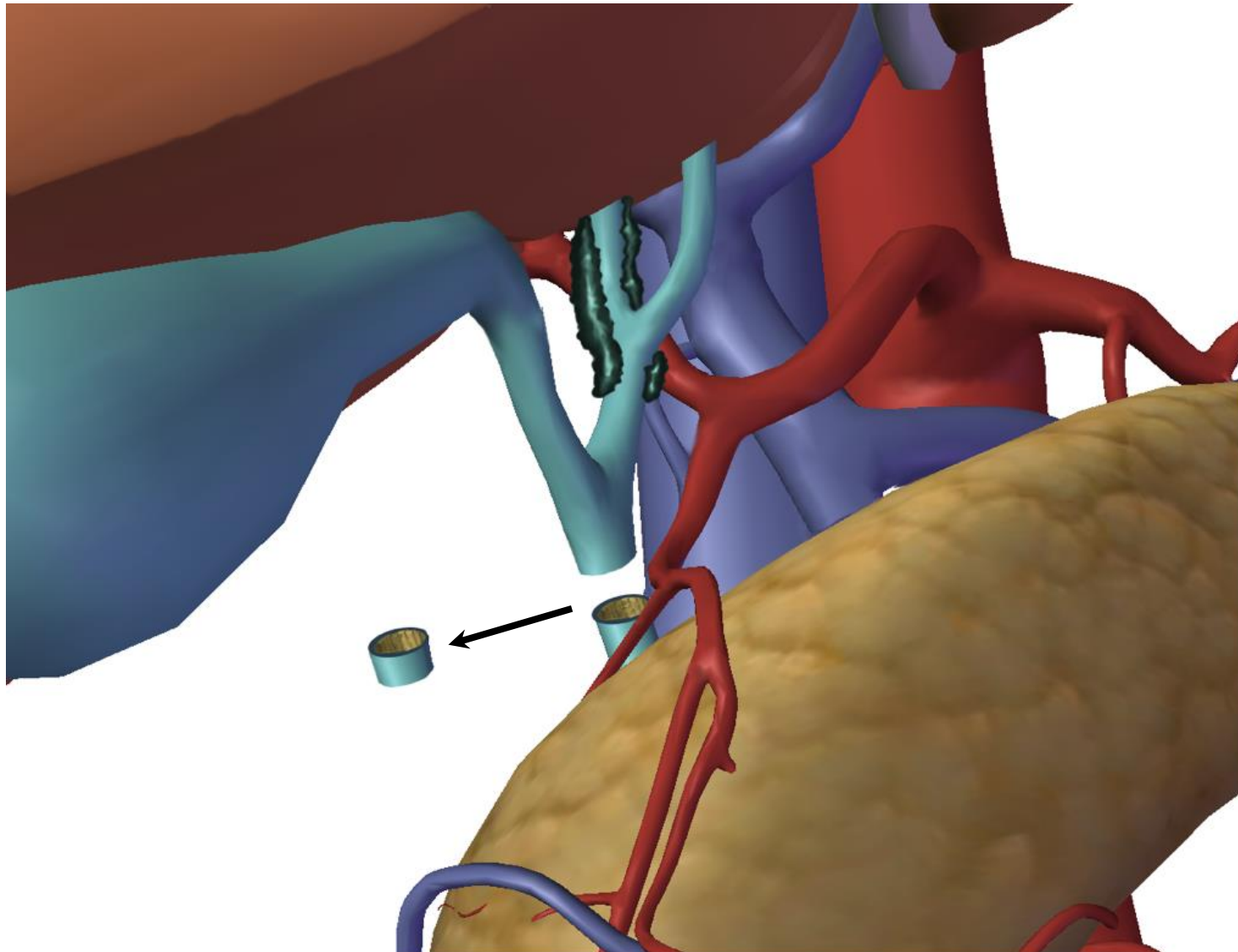
3.5 cm Mixed HCC/CCA in segment 5/6

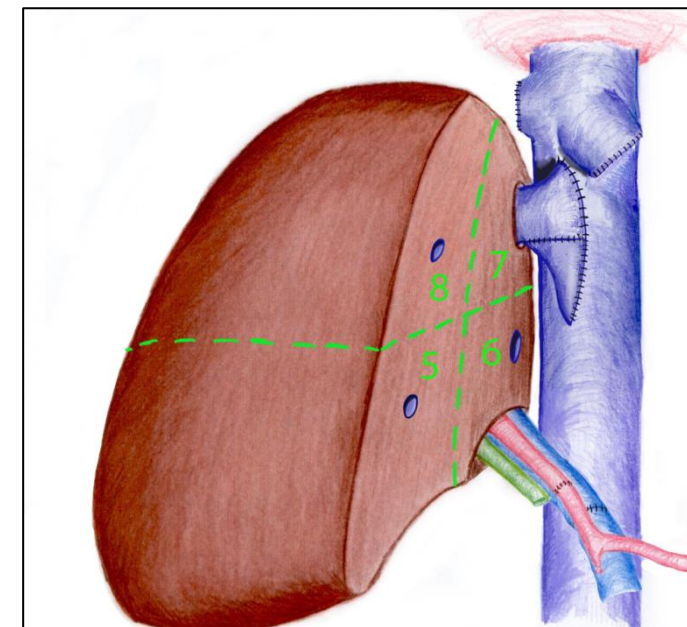
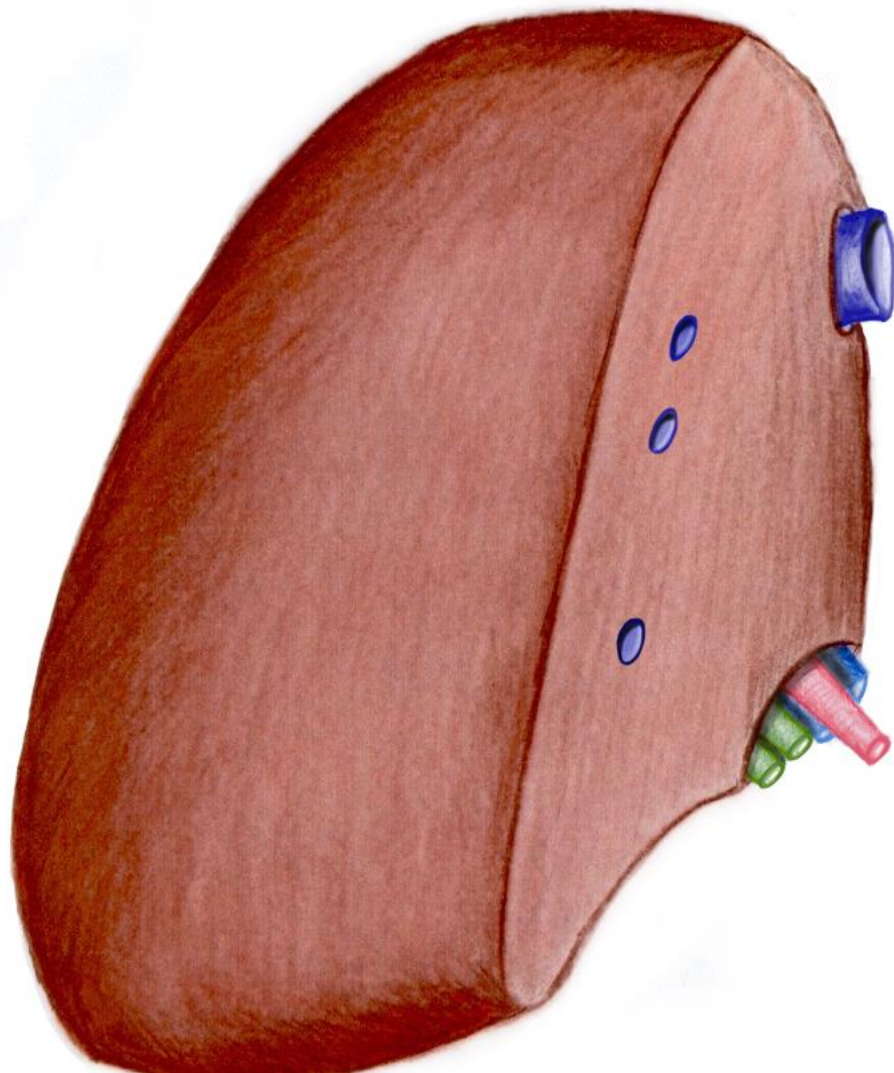
LDLT 11/1/19

Donor = son

Explore recipient first, no extrahepatic disease







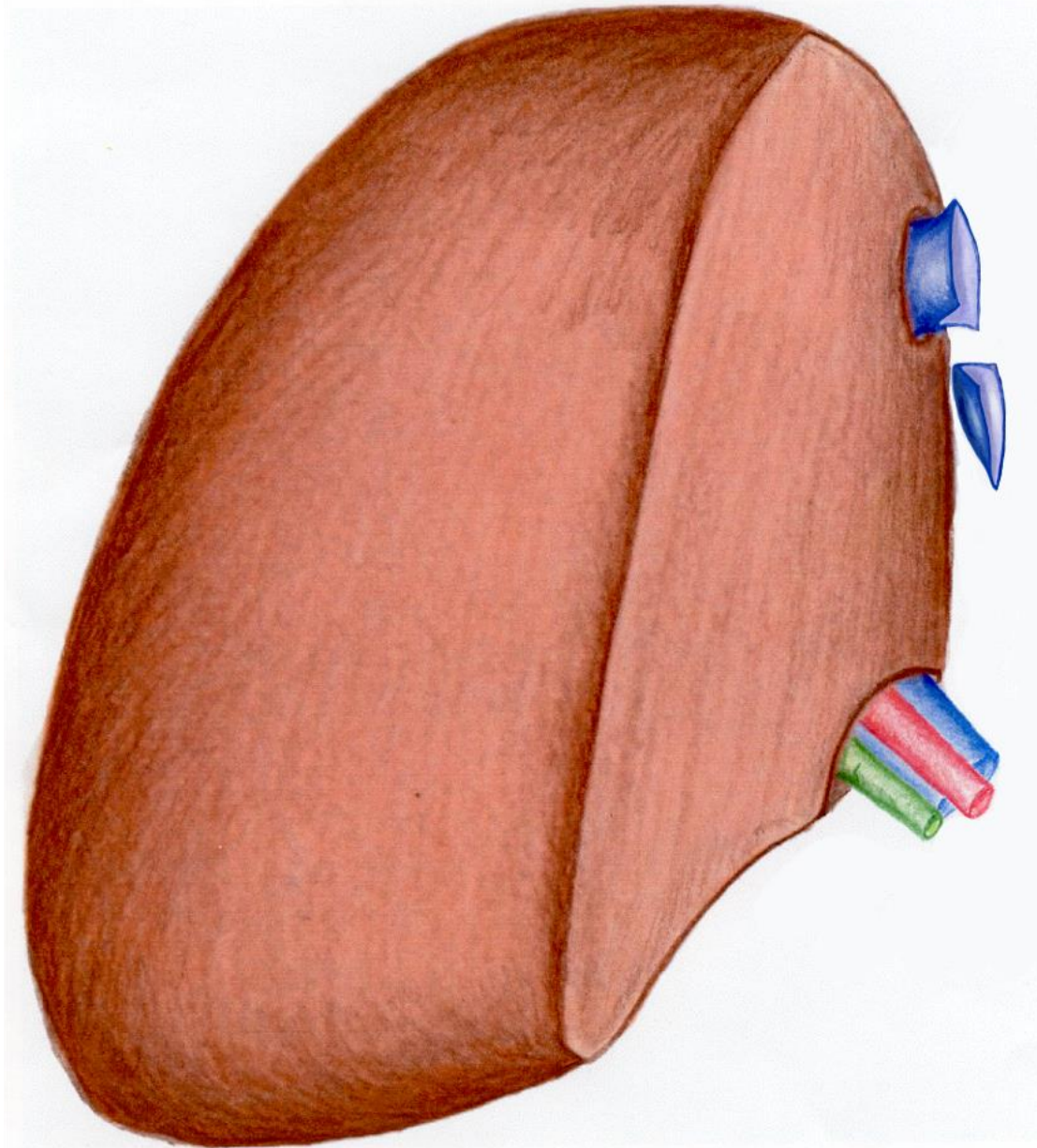
Right Lobe

RHV to cava

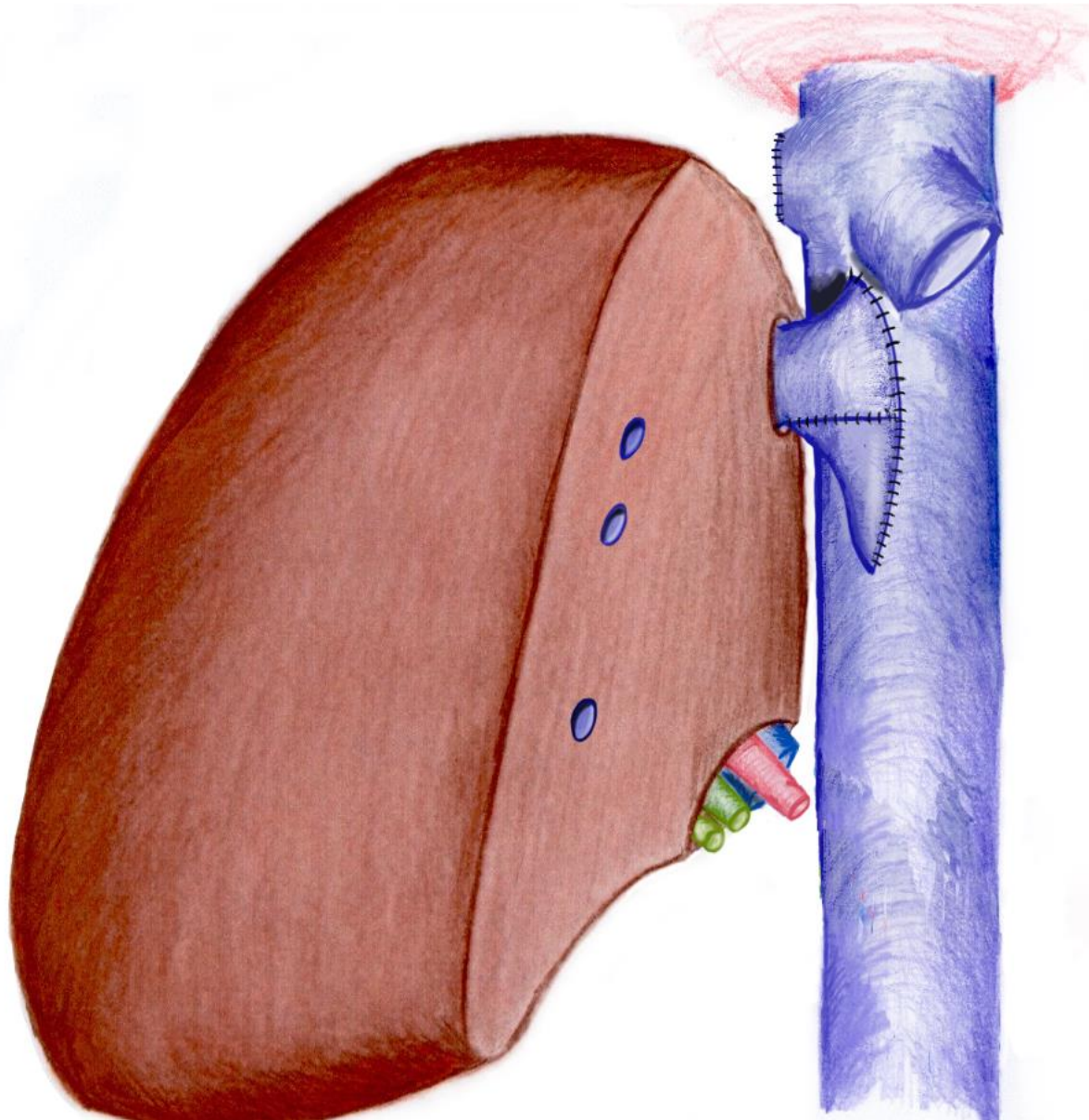
Seg 5 and two seg 8 veins to LHV

RPV to SMV jump graft

Two ducts sewn separately with ext caths



Right Lobe
RHV to cava
Seg 5 and two seg 8 veins to LHV
RPV to SMV jump graft
Two ducts sewn separately with ext caths



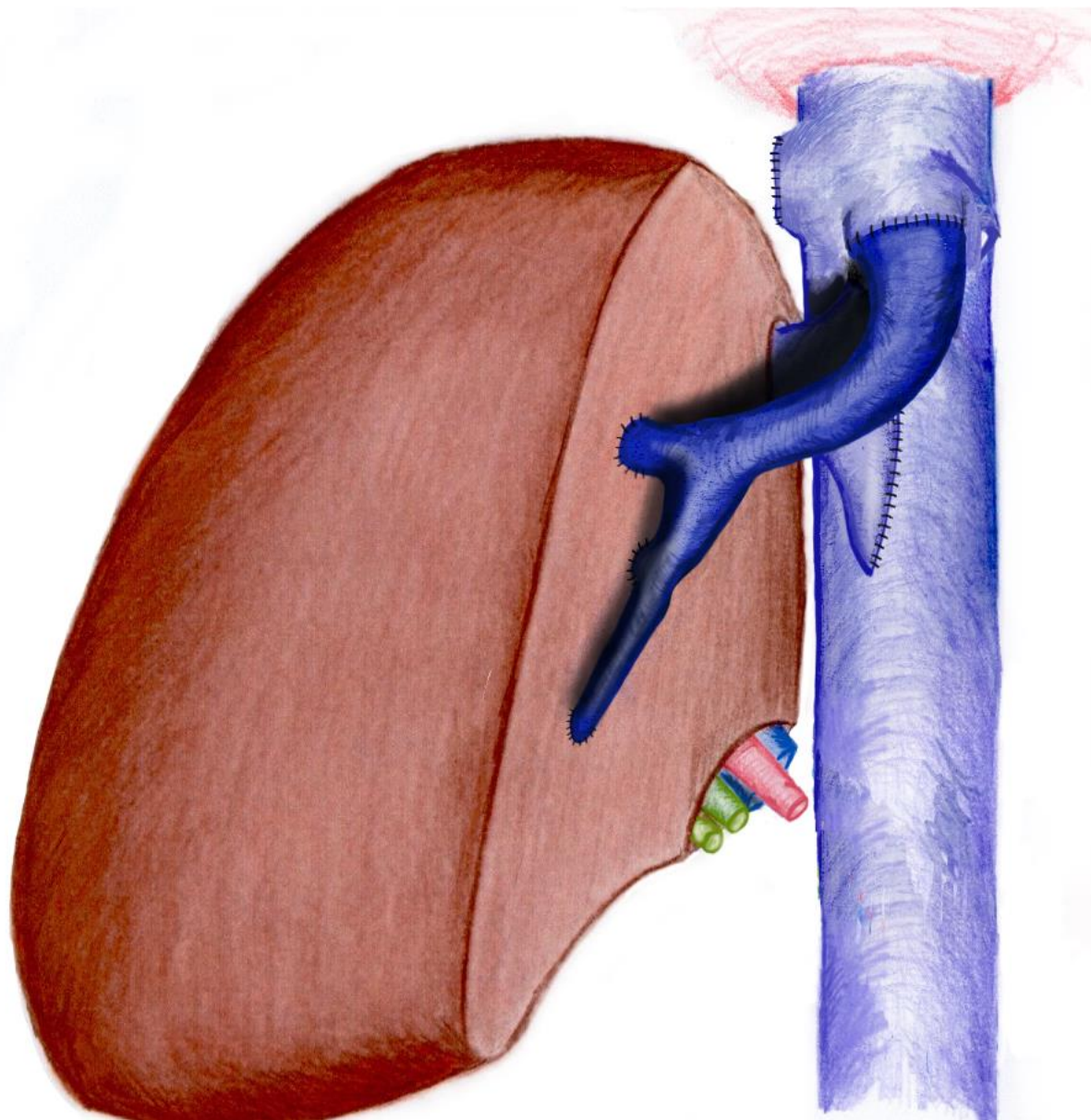
Right Lobe

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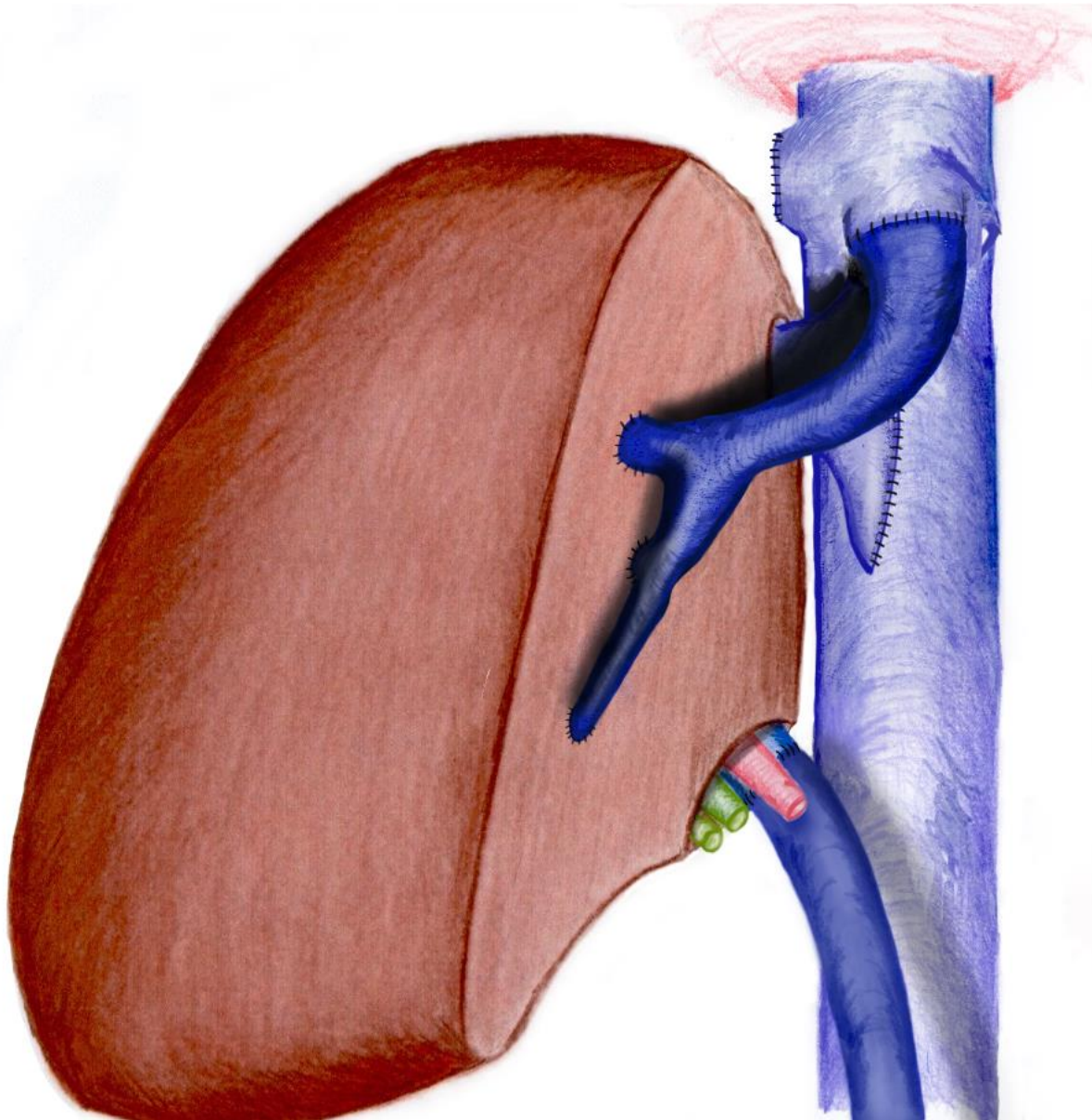
Right Lobe

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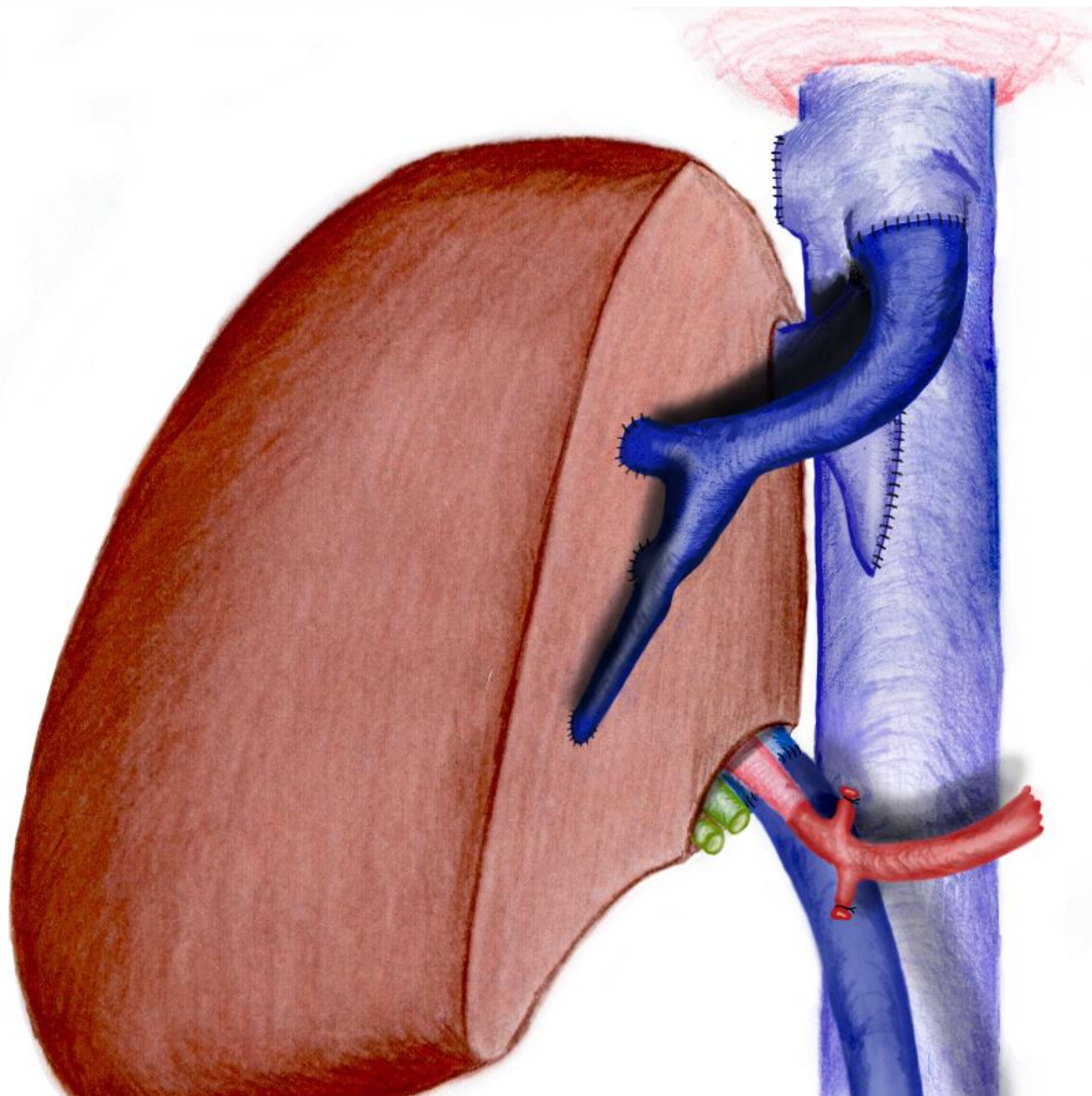
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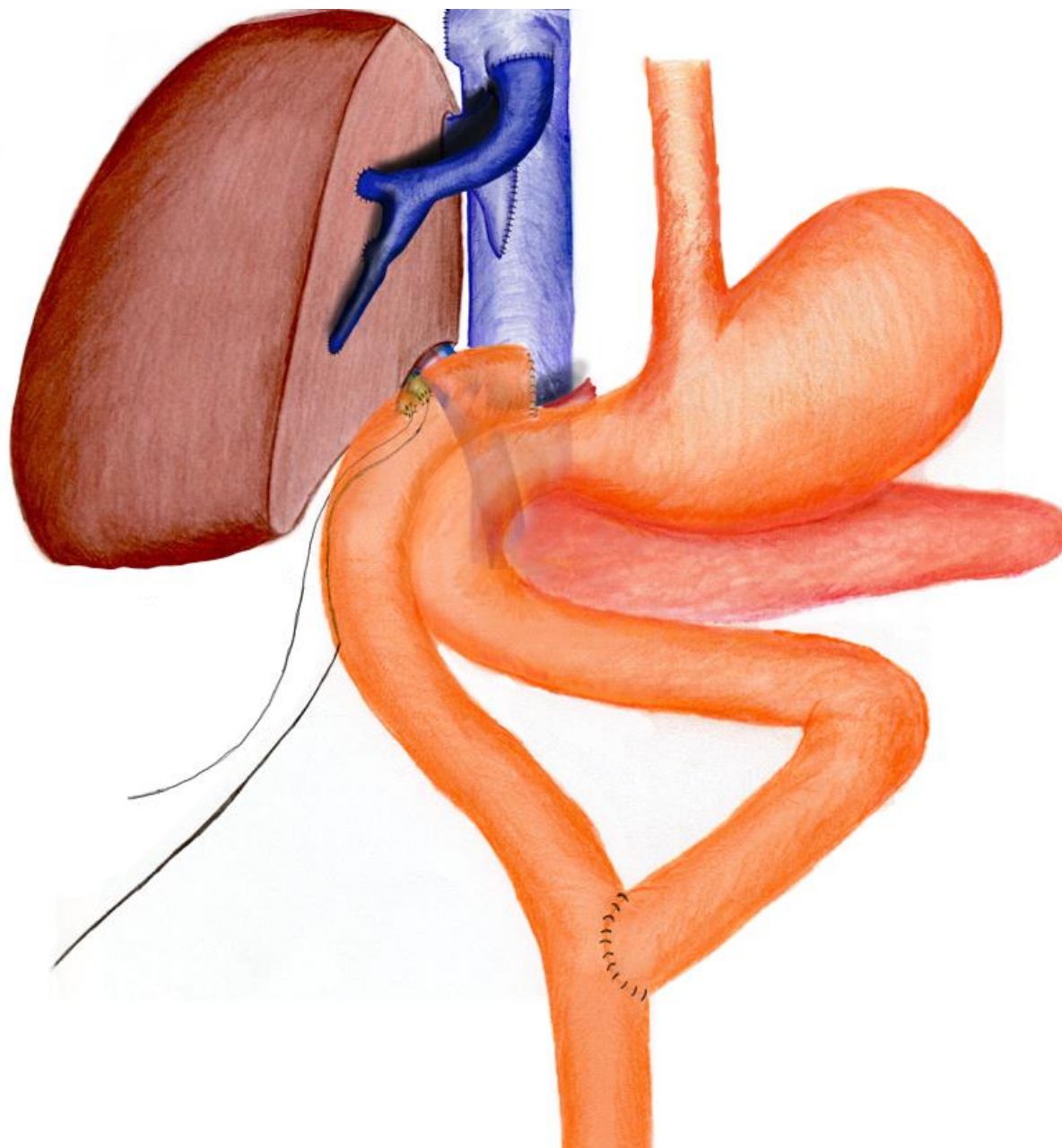
Right Lobe

RHV to cava

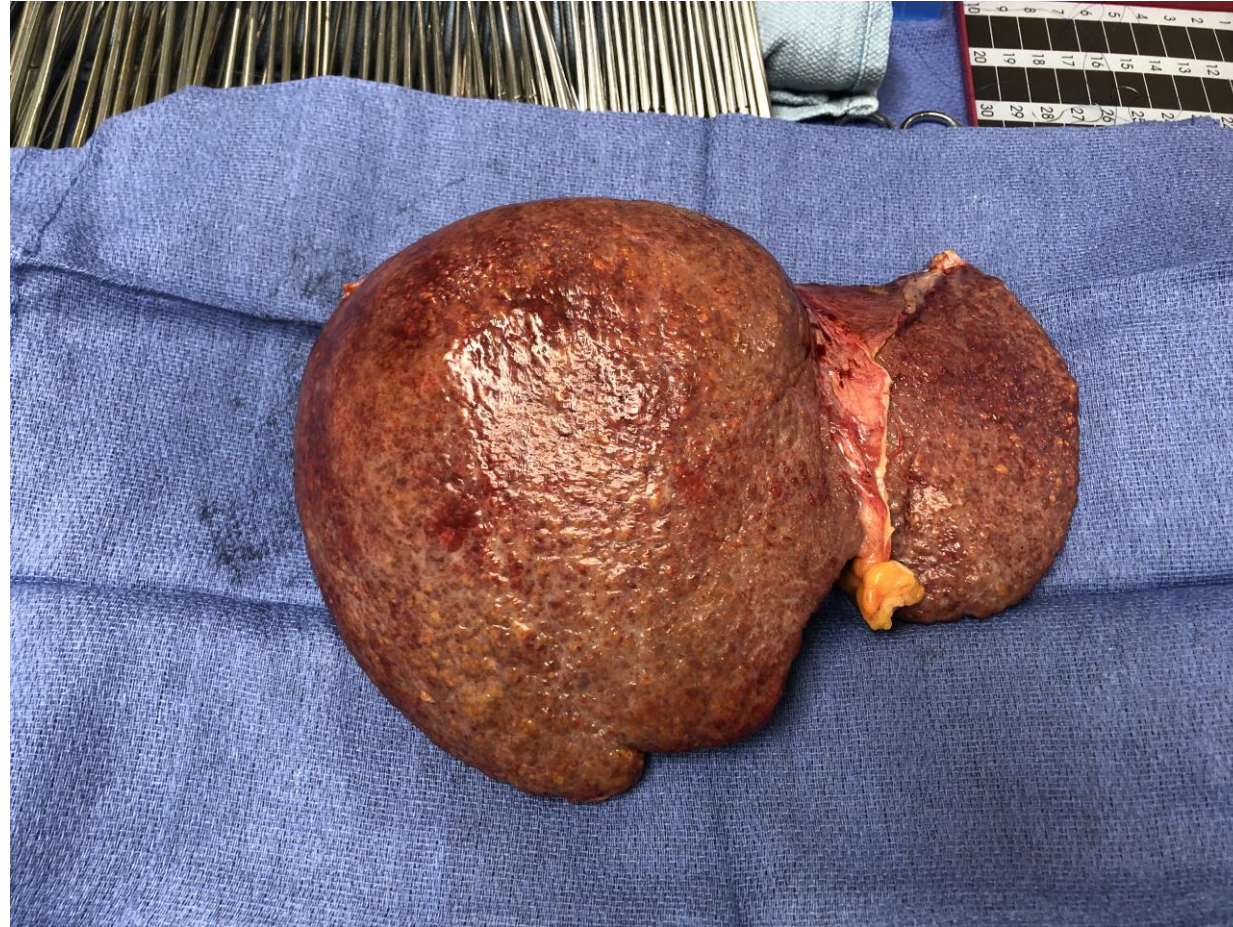
Seg 5 and two seg 8 veins to LHV

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Right Lobe
RHV to cava
Seg 5 and two seg 8 veins to LHV
RPV to SMV jump graft
Two ducts sewn separately with ext caths





Explant Pathology

NATIVE LIVER (1313 GRAMS), LIVING RELATED
LIVER TRANSPLANT:

MODERATELY DIFFERENTIATED PRIMARILY
HEPATOCELLULAR CARCINOMA WITH
MICROSCOPIC FOCI OF HISTOCHEMICAL AND
IMMUNOPHENOTYPIC EVIDENCE OF
CHOLANGIOLAR DIFFERENTIATION, SEGMENT 5/6,
5.5 CM IN GREATEST DIMENSION,
STATUS POST TACE THERAPY (SEE COMMENT).

Nodes Negative.

No chemo post-op

No evid mets at 1 year



FT

66 yo male from Shreveport, LA

Liver lesion biopsied showing adenocarcinoma

Rectal adenocarcinoma, 3 cm, largely removed by colonoscopy, T3N0M1 (stage IVA)

December 2016--Started FOLFOX, continued through April 2017

January 2017—Y90 to whole liver

May 2017—PET scan shows complete response (no uptake in region of rectum or liver)

August 2017—recurrent disease in right lobe of liver, restarted FOLFOX/Avastin
FOLFOX 10 cycles through July 2018
Avastin d/c'd May 2018 after GI bleed

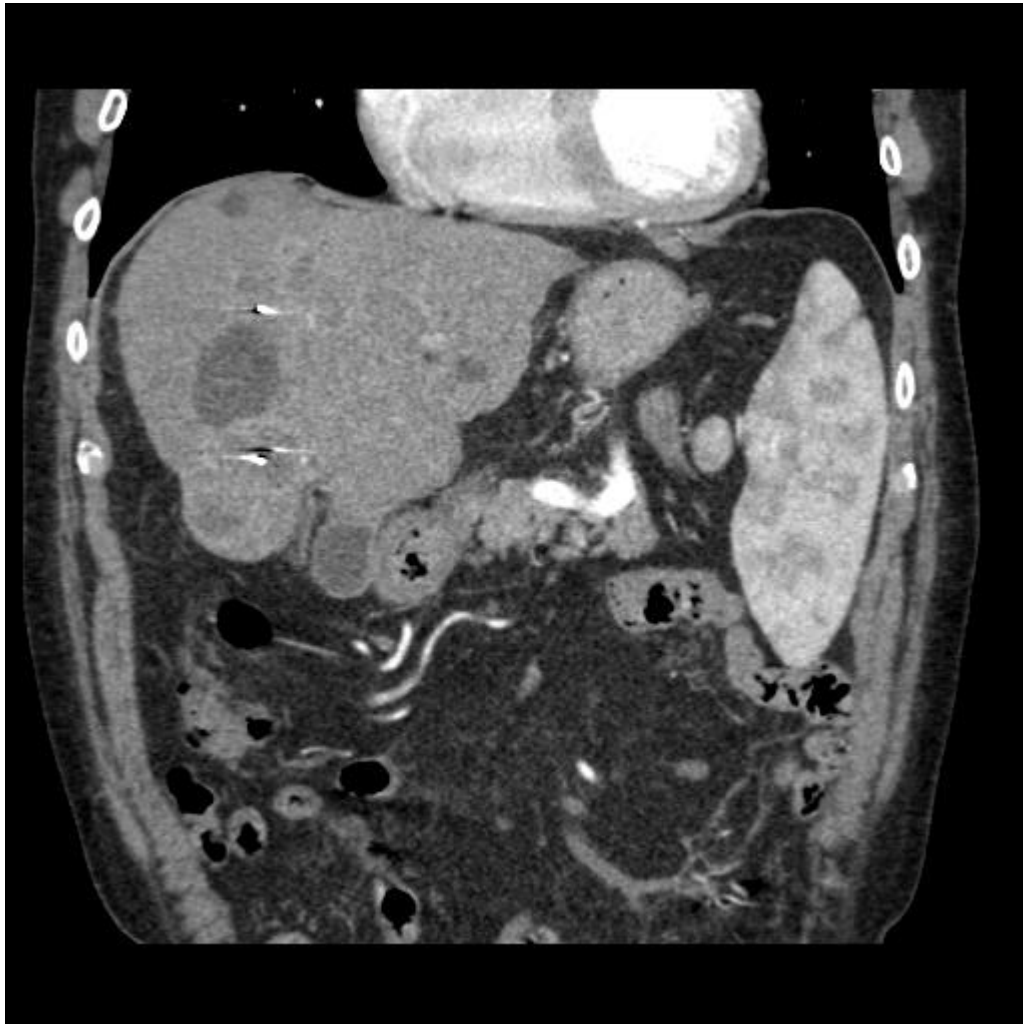
May 2018—colonoscopy negative and biopsies of previous area negative

June 2018—Near complete response via PET in liver, pelvis still negative

September 2018—tumor increased in liver
--started FOLFIRI with partial response

September 2019—Presented to UPMC for transplant evaluation

Preop CT 8/21/19



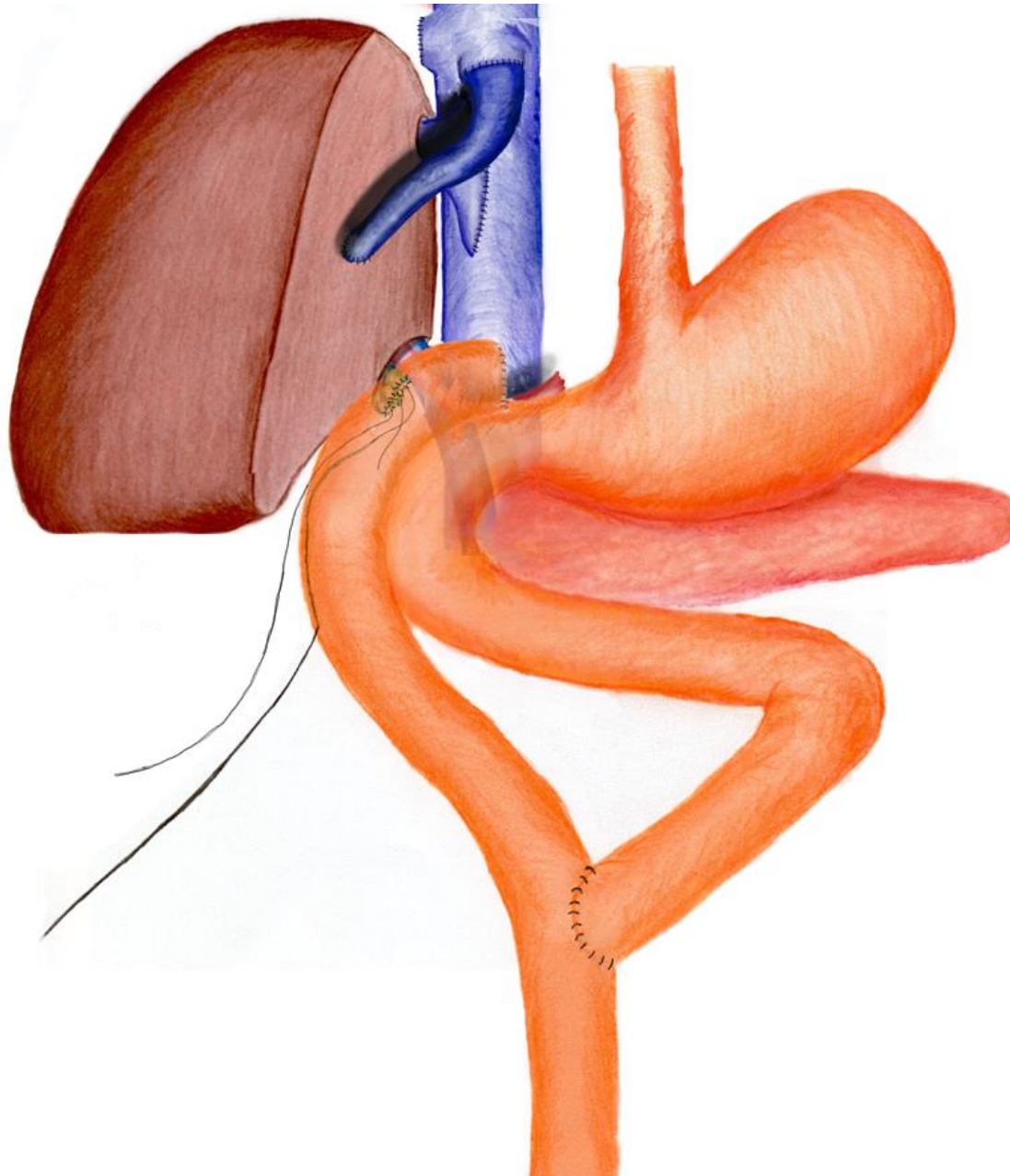
*PET scan negative except for liver uptake

11/11/19

Ex lap, no evid extrahepatic disease

PATH:

MESENTERIC NODULE WITH FAT NECROSIS, FIBROBLASTIC PROLIFERATION AND FOCAL SCLEROTIC VENOPATHY; NO EVIDENCE OF MALIGNANCY.



Donor = Son

RHV to RHV

MHV Jump to M/L HV

RHA to RHA

3 RHD sewn as single, 2 ext, 1 int

FINAL DIAGNOSIS:

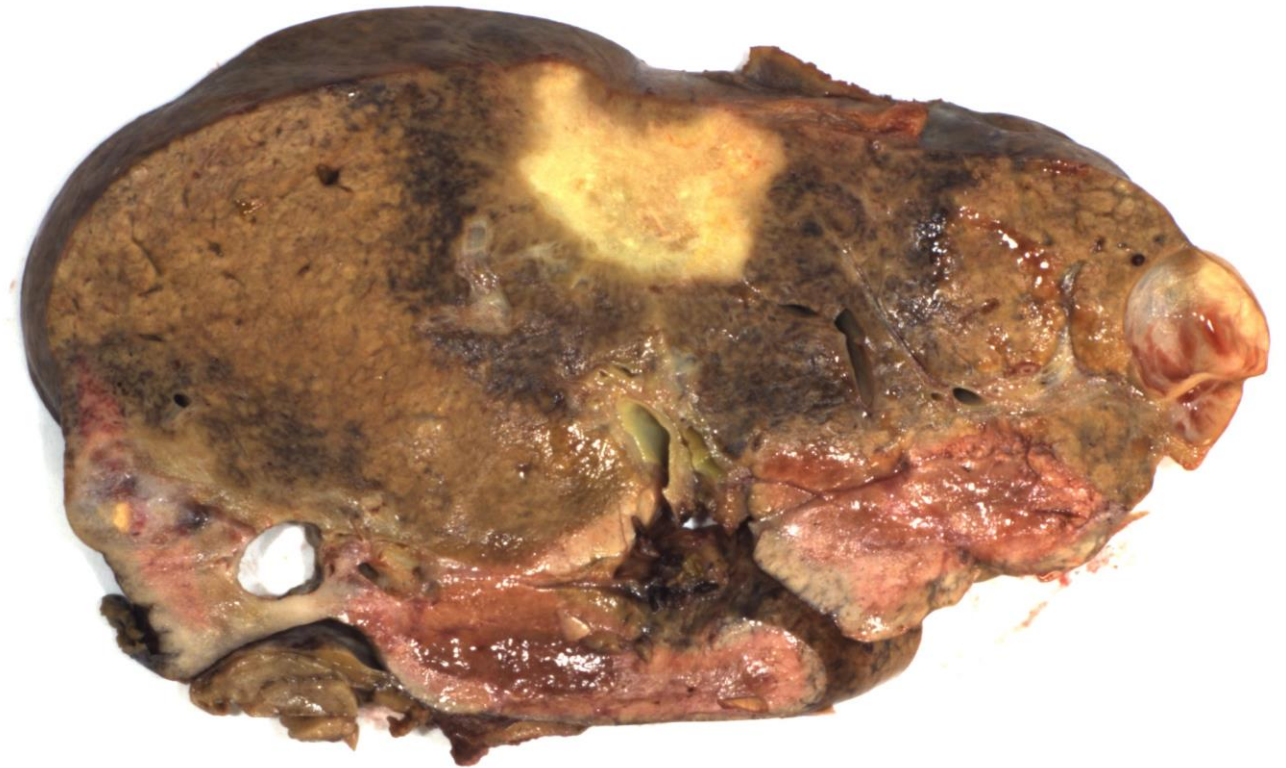
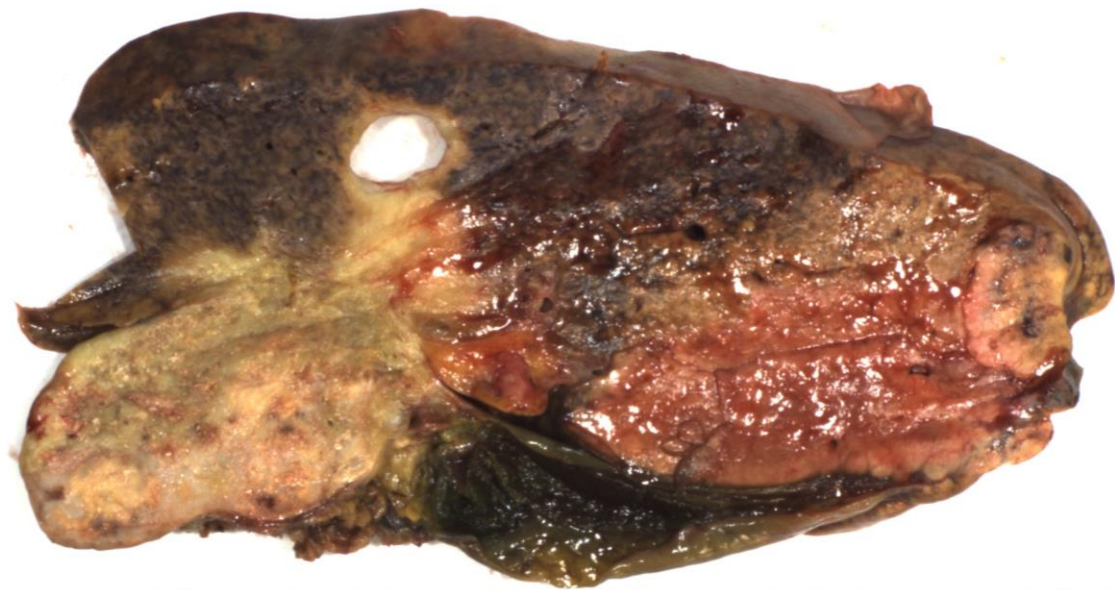
NATIVE LIVER, HEPATECTOMY (1289 GRAMS) :

POORLY DIFFERENTIATED CARCINOMA: 4 SEPARATE LESIONS, PARTLY
NECROTIC, (LARGEST 8.3 CM)

SURGICAL RESECTION MARGINS NEGATIVE FOR CARCINOMA

NO PDL-1 EXPRESSION IN TUMOR CELLS (<1% OF CELLS)

NUMEROUS INTRAVASCULAR RADIOEMBOLIC BEADS WITHIN THE TUMOR



Now 1-year 1-month post-transplant with no evidence of recurrent disease



Conclusion:

UNOS continues to try to make the system of organ distribution equitable, but the problem remains—not enough organs.

LDLT provides options for patients waitlisted with standard indications or those who otherwise might have no option for transplant.