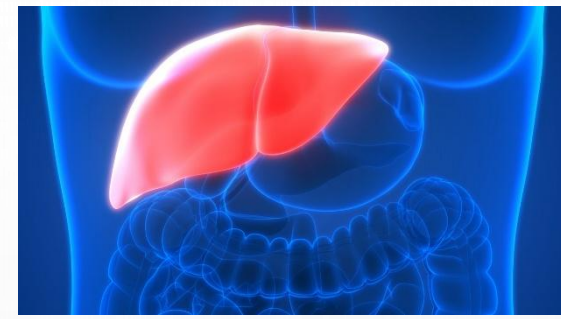


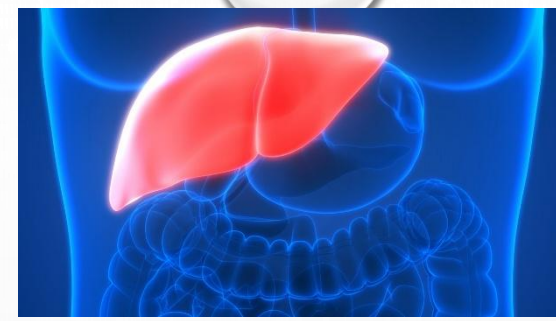


CASE PRESENTATION - LIVING LIVER DONATION

“CHOOSING THE *LEFT* PATH”: DECISION-MAKING IN LDLT

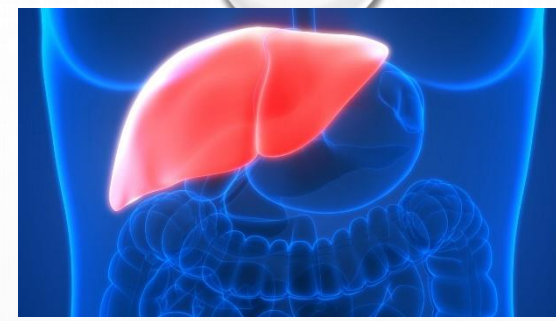
Parthi Srinivasan & Joshua Bell

CASE IN POINT

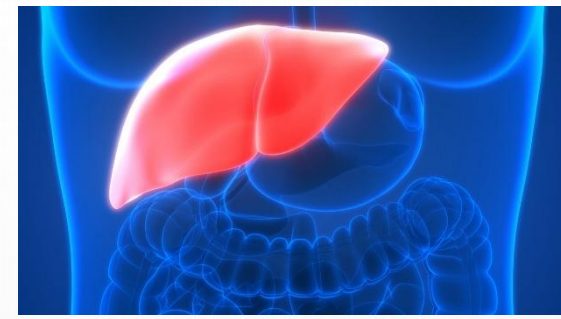


- Recipient, 33 years Male, 80 kgs
- PSC, portal hypertension, large shunts on CT
- No overt liver decompensation, starting sleep reversal
- UKELD qualifying score, no cholangiocarcinoma
- Past: spontaneous pneumothorax at 16, very tall, no Marfan syndrome
- Varices on endoscopy

DONOR DETAILS



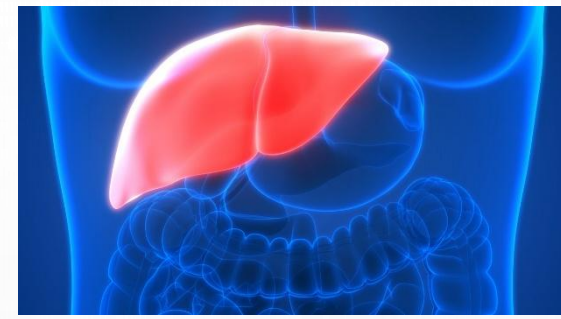
- Donor 31 years male, brother, 101 kgs, living in Australia
- Fit, athletic, past surgeries: ACL reconstruction, ankle restabilisation surgery, vascular hand injury repair
- Dilated left ventricle on ECHO (likely athletic heart)
- Exceptional fitness (345W on CPEX)



DONOR SAFETY

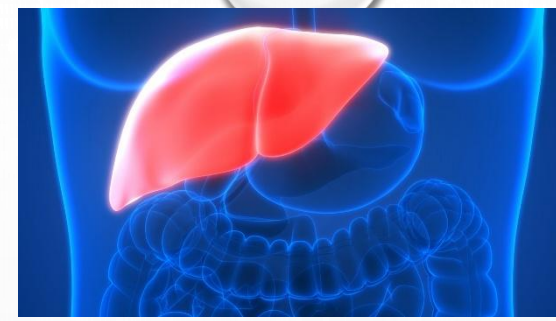
- FUTURE LIVER REMNANT (FLR):
 - Must be adequate for donor recovery (generally $\geq 30\%$ of total liver volume in healthy donors).
 - Assess volumetry from CT/ MRI
- VASCULAR & BILIARY ANATOMY:
 - Favourable anatomy with minimal need for complex reconstructions.

DONOR SAFETY



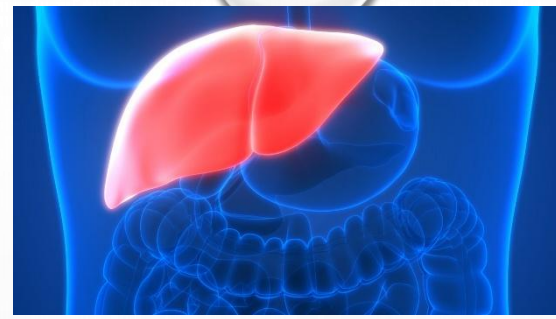
- NO SIGNIFICANT LIVER DISEASE:
 - Normal LFTs, no steatosis, no fibrosis.
- GENERAL HEALTH:
 - No major comorbidities, good cardiopulmonary status.
- PSYCHOLOGICAL READINESS:
 - Donor understands risks, recovery, and is motivated without coercion or financial gain.

RECIPIENT NEEDS

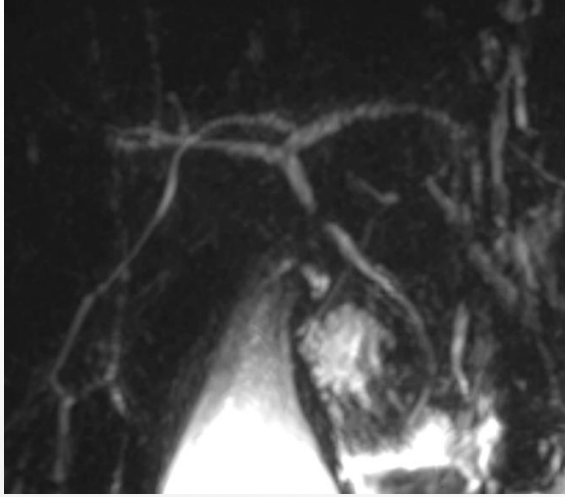


- GRAFT-TO-RECIPIENT WEIGHT RATIO (GRWR):
 - Graft must provide $\geq 0.8\%$ GRWR to avoid small-for-size syndrome.
- SEVERITY OF LIVER DISEASE:
 - Consider urgency, MELD/UKELD score, and whether a left/right lobe will provide adequate function.
- PORTAL HAEMODYNAMICS:
 - Left lobe grafts can be more susceptible to portal hyperperfusion, therefore, may require modulation.

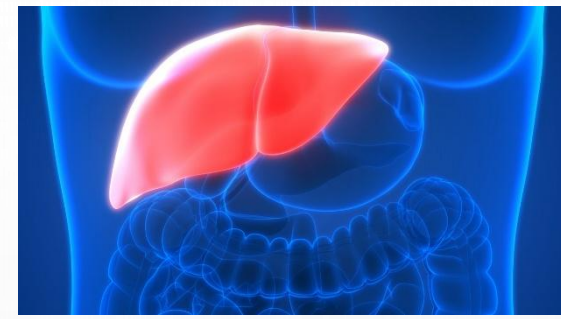
IMAGING ASSESSMENT



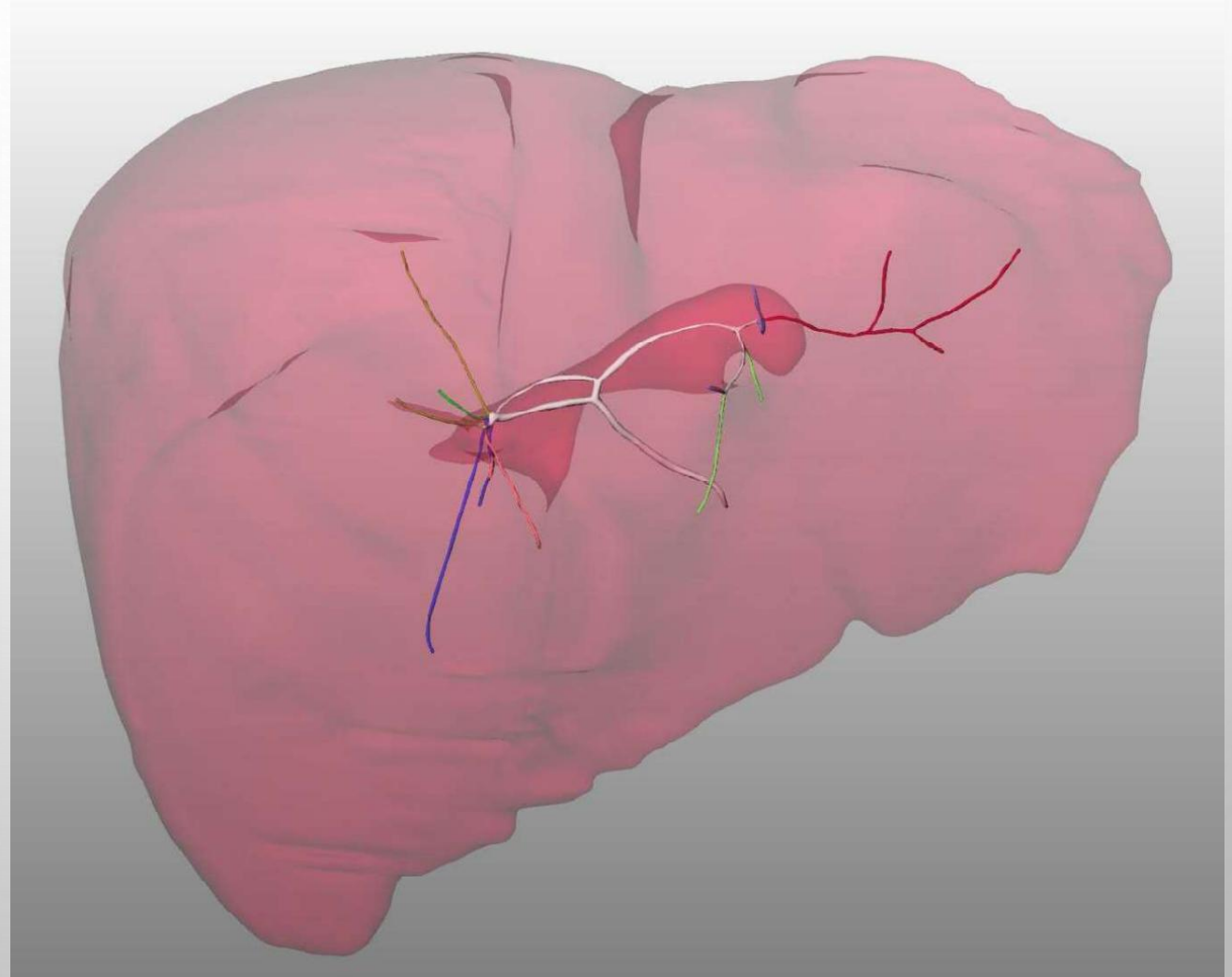
- **VOLUMETRY:**
 - Right / Left lobe volume measured on CT.
- **VASCULAR ANATOMY:**
 - Hepatic veins, portal vein branching, and segmental arterial supply must be suitable.
- **BILIARY ANATOMY:**
 - Fewer ductal branches preferred to reduce anastomotic complexity.



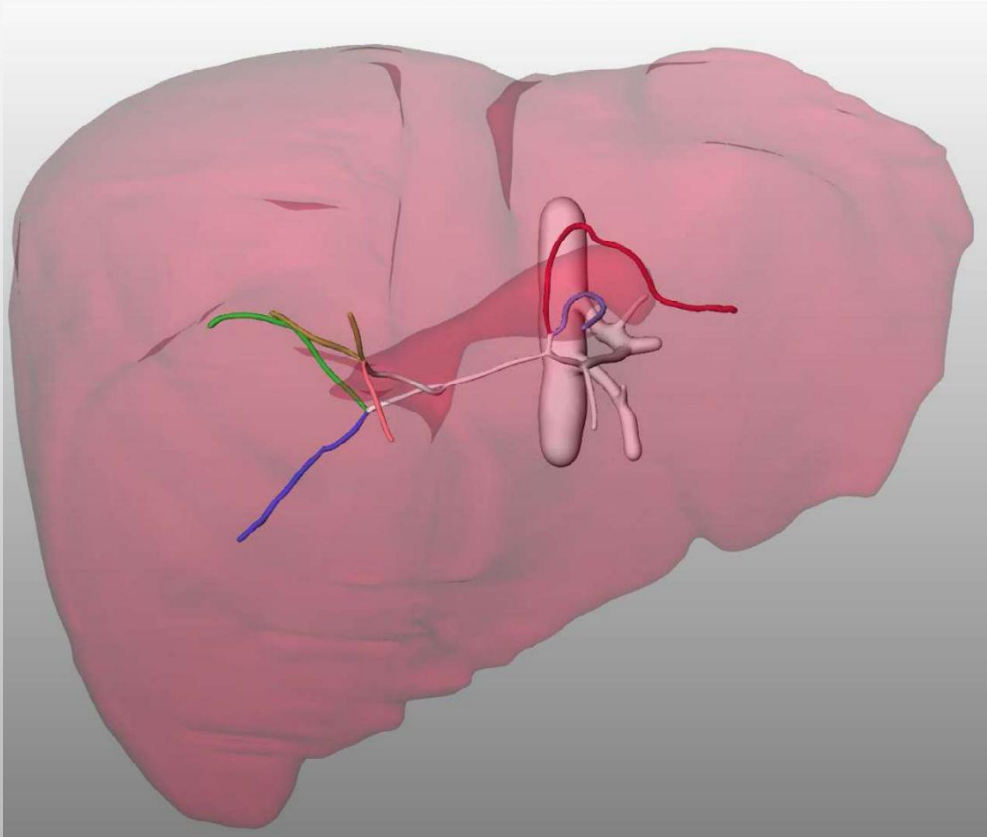
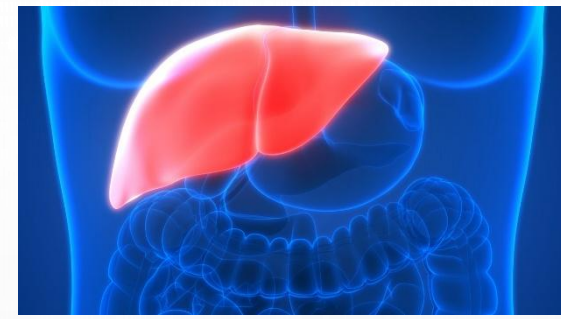
MRCP



- Type 3A Biliary anatomy
- Right posterior duct draining into left duct
- Segment 4 duct drains into left duct

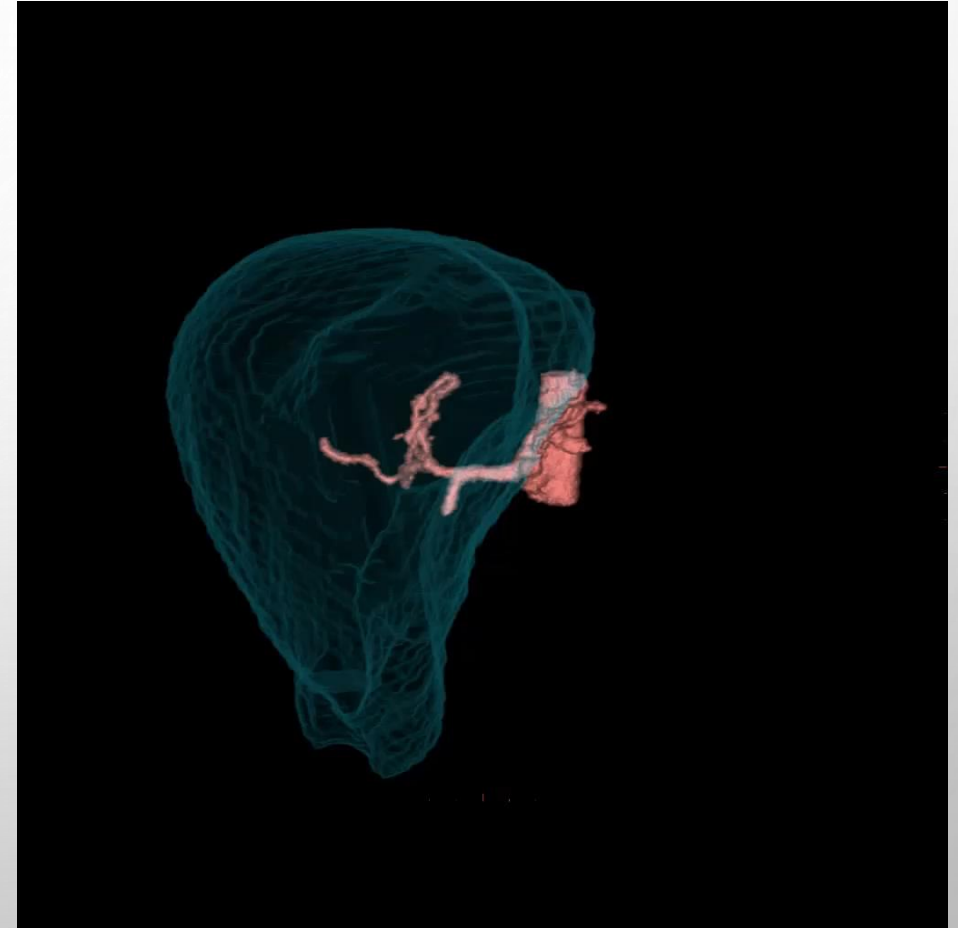


ARTERIAL ANATOMY

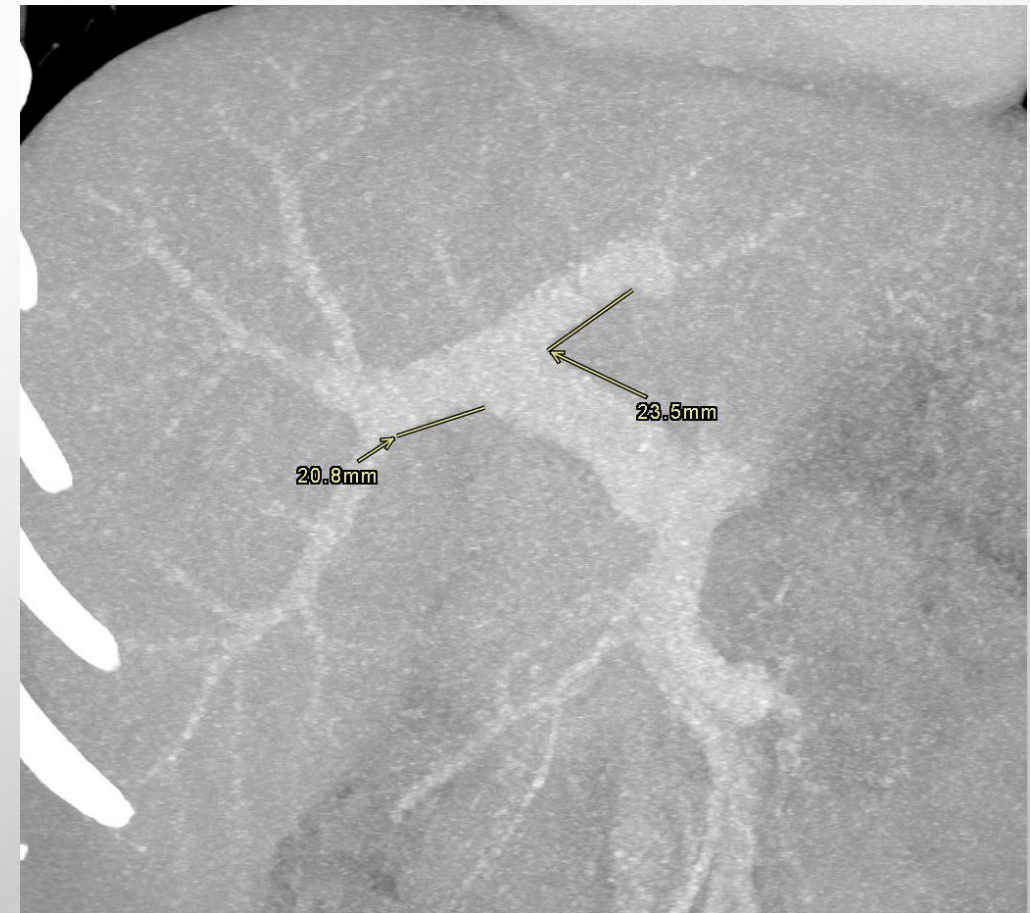
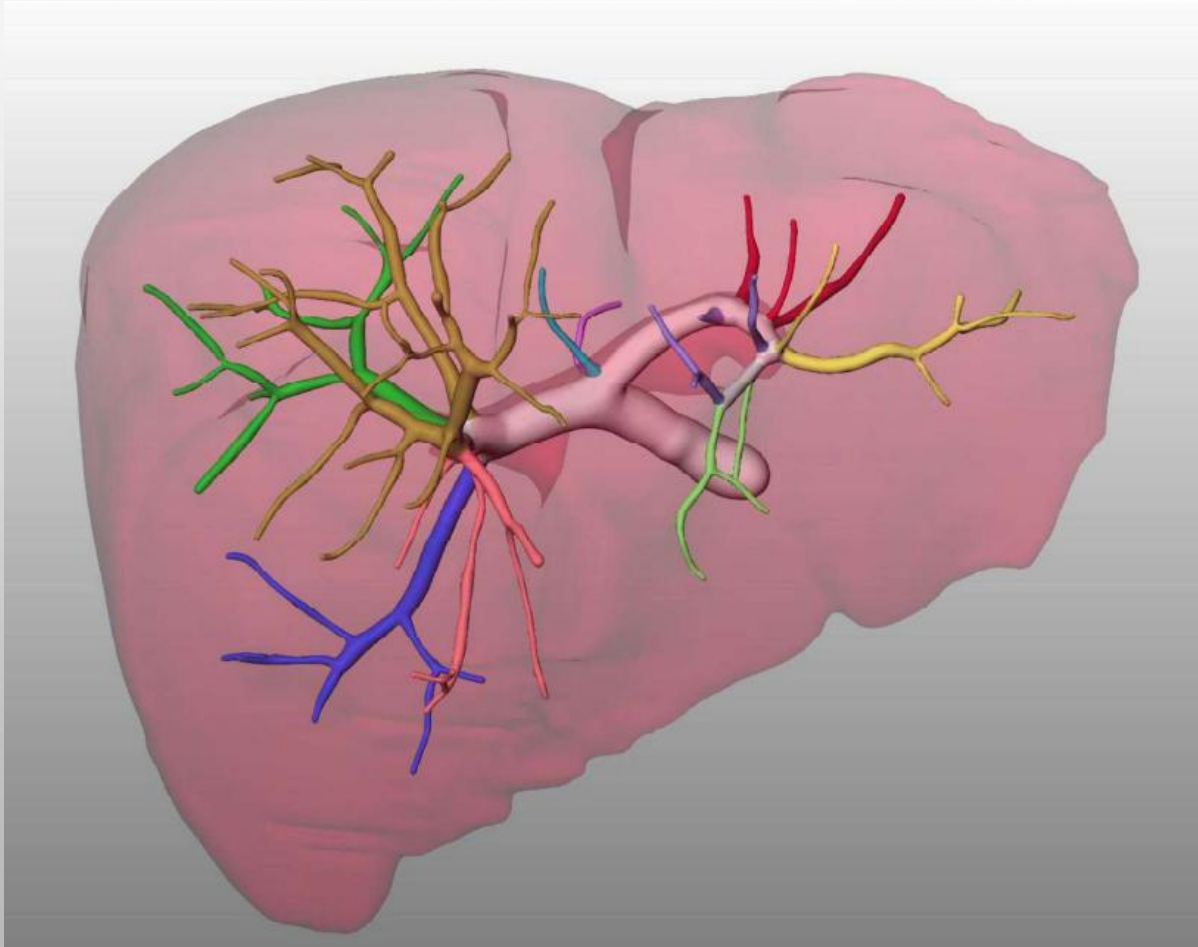
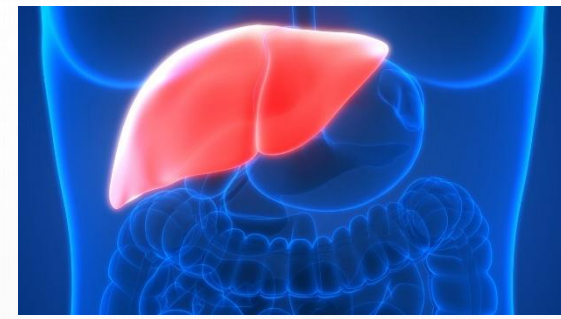


Conventional
Artery

Segment 4 from
Left

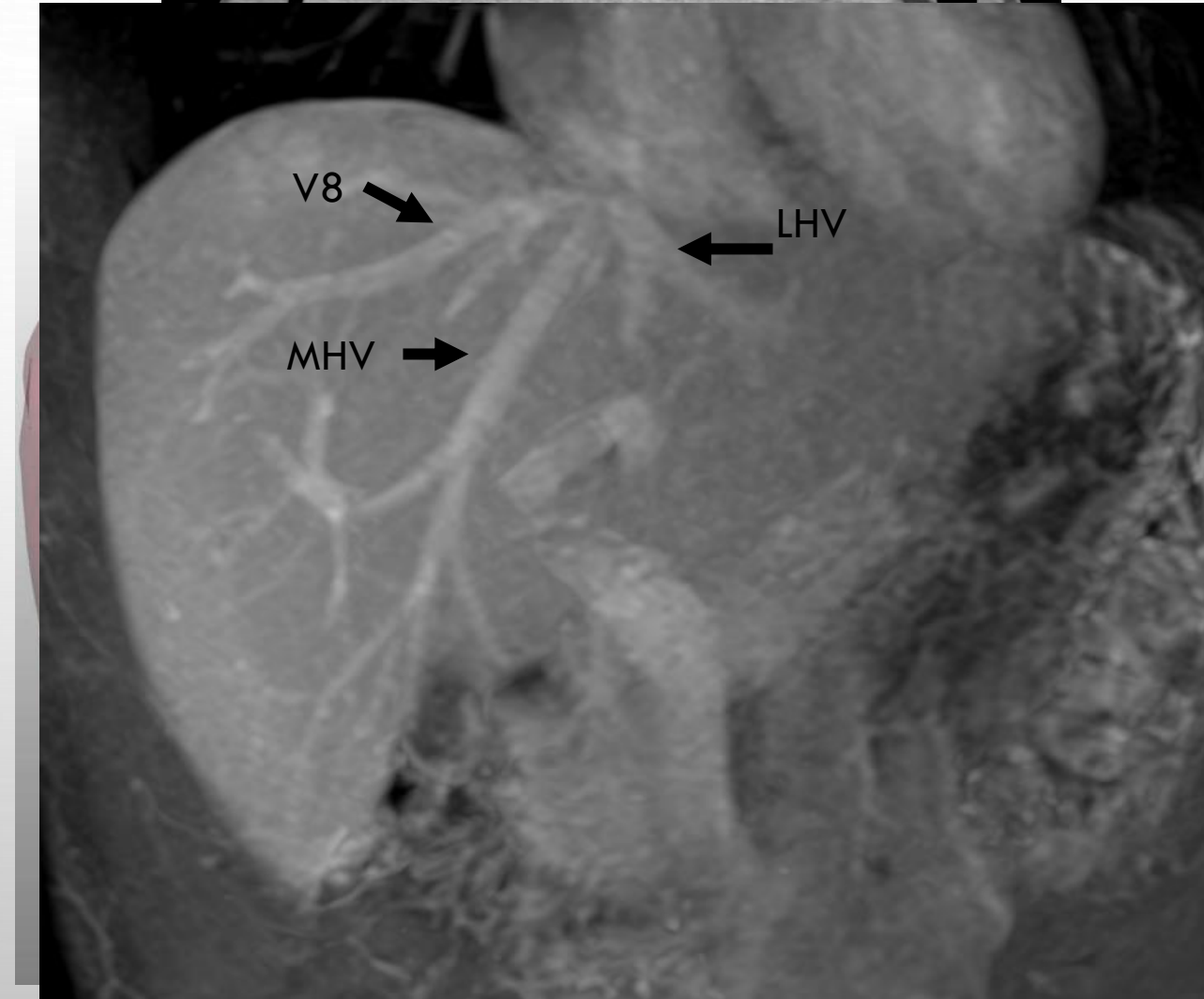
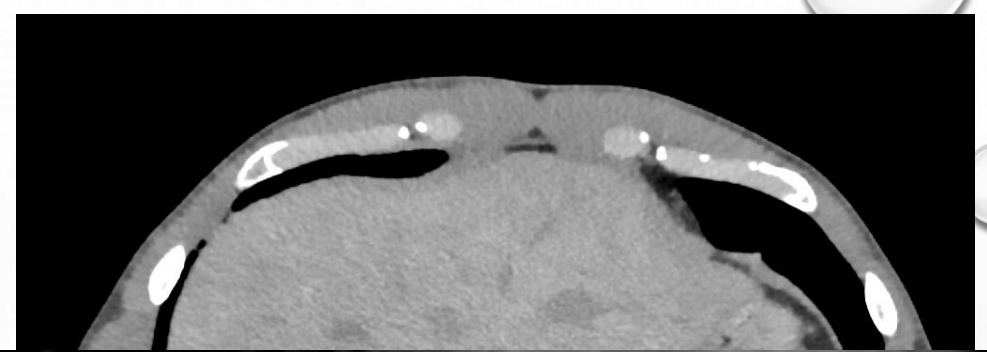


PORTAL VENOUS ANATOMY

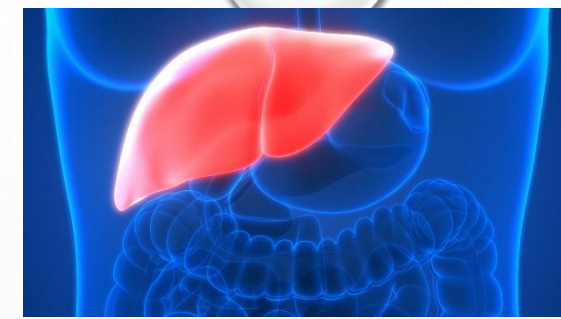


HEPATIC VENOUS ANATOMY

- Initial CT contrast timing too early
- Repeat CT similar issue.
- MEVIS able to generate model
 - Dominant RHV.
 - Large V8 into MHV
- Findings confirmed on MRI with contrast

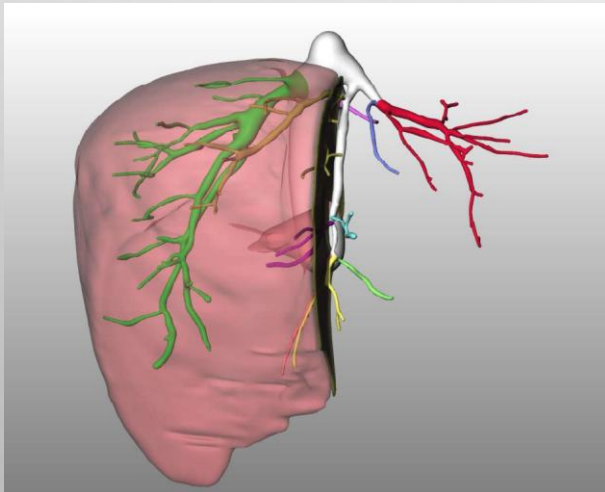


IMAGING & ANATOMY FINDINGS -



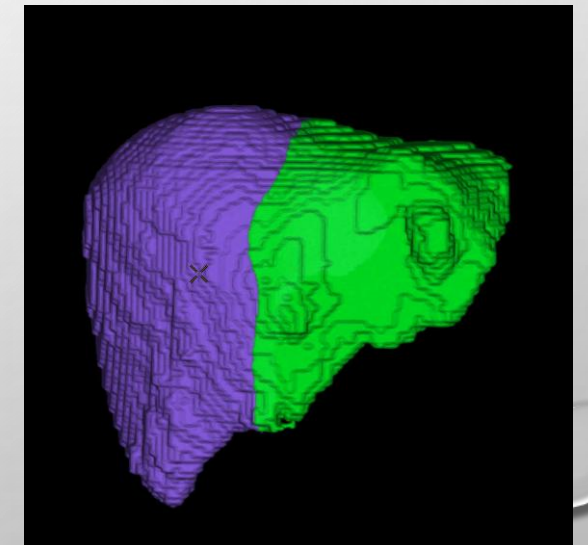
Right Lobe

- Right Lobe (without MVH): 1579g
- FLR: 31.2%, GRWR: ~1.97%
- Single artery, single PV, 2 bile ducts
- Reconstructions (V8, V5) will be needed during transplant

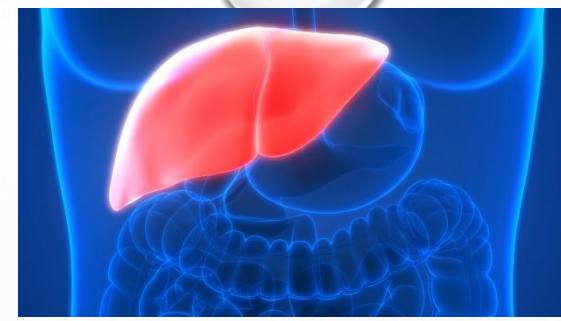


Left Lobe

- Left Lobe: 646g
- FLR: 72%, GRWR: ~0.81%
- Single artery, single PV, single bile duct,
- No additional hepatic vein reconstructions
- WHICH GRAFT?

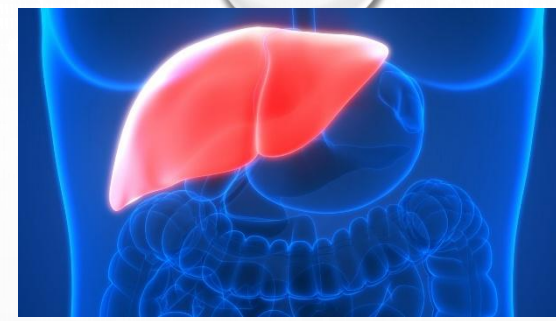


INTRAOPERATIVE FINDINGS



- Left lobe graft (560 g; GRWR 0.74)
- Single outflow anastomosis of MHV/LHV orifice
- Smooth reperfusion
- LHA to recipient RHA (8/0 prolene), size mismatch
- Good PV/HA/HV flows
- PV pressure 19 mm Hg – What do we do?

POST OPERATIVE PERIOD



- **D1 US:** 0.70-0.76 HARI, Triphasic hepatic venous flow

Graft function: AST 200, bilirubin 46

Immunosuppression: Prograf, Basiliximab, Prednisolone

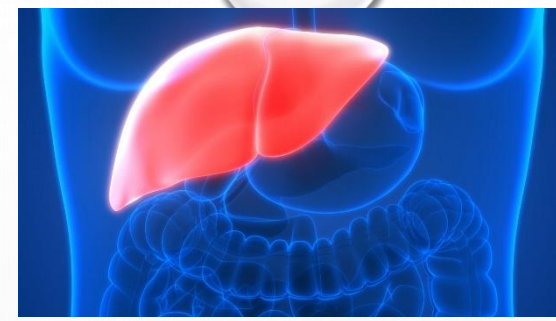
- **Concerns of Small for Size- 24 hours after surgery**

Slow lactate recovery (peaked to 7.4)

Peak INR 3.9

Ascites 1-2 litres increasing to 3 litres by day 3/4

MANAGEMENT OF SMALL-FOR-SIZE SYNDROME



- **Post-op measures:**
 - Vitamin K for 3 days
 - Terlipressin infusion for 72 hours & Octreotide for 1 week to reduce portal inflow
 - Volume management: Human albumin solution and Spironolactone for ascites/peripheral oedema
 - Daily Doppler to monitor hepatic inflow/outflow
 - Weight checks.... Ascites settled by 2 weeks.
 - Discharged home 3 weeks post transplant fit and well.

THANK YOU.