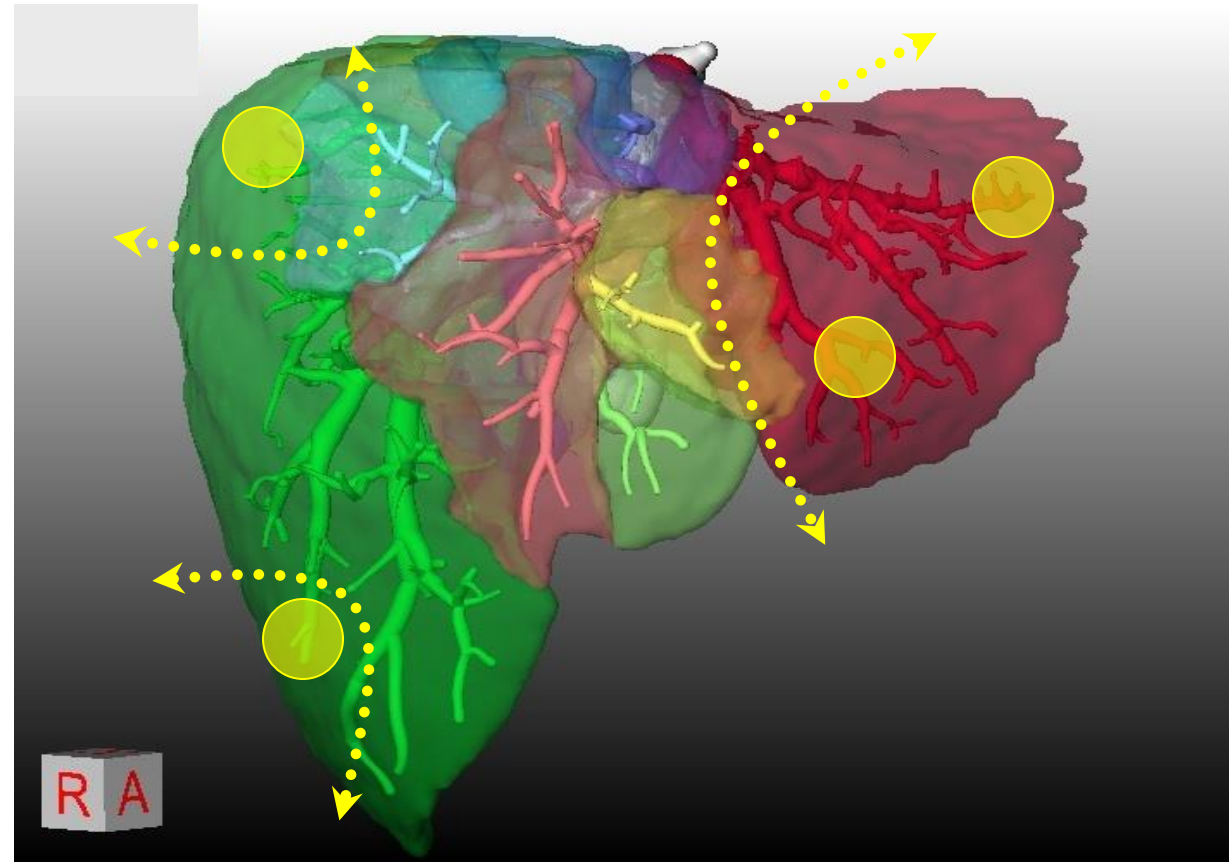
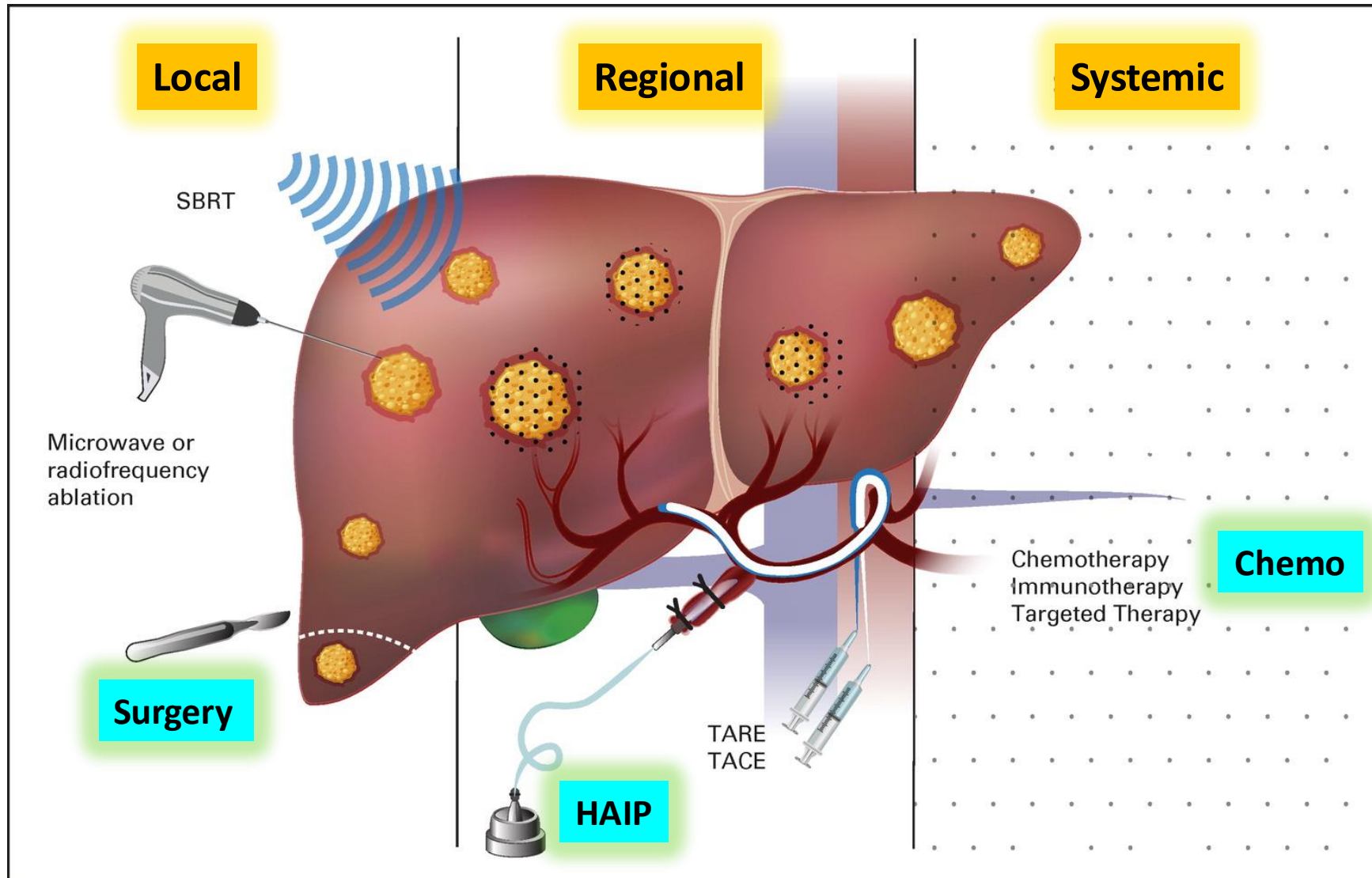


COLORECTAL LIVER METASTASES and BEYOND



GAGANDEEP SINGH, MD, FACS
MUSTAFA RAOOF, MD
MARWAN FAKIH, MD

Management Modalities for Colorectal Liver Metastases



IRE- Nanoknife
Cryotherapy
Ethanol Injection
Gene Therapy
Transplant

Chemo

Chemotherapy
Immunotherapy
Targeted Therapy

TARE
TACE

HAIP

Surgery

Microwave or
radiofrequency
ablation

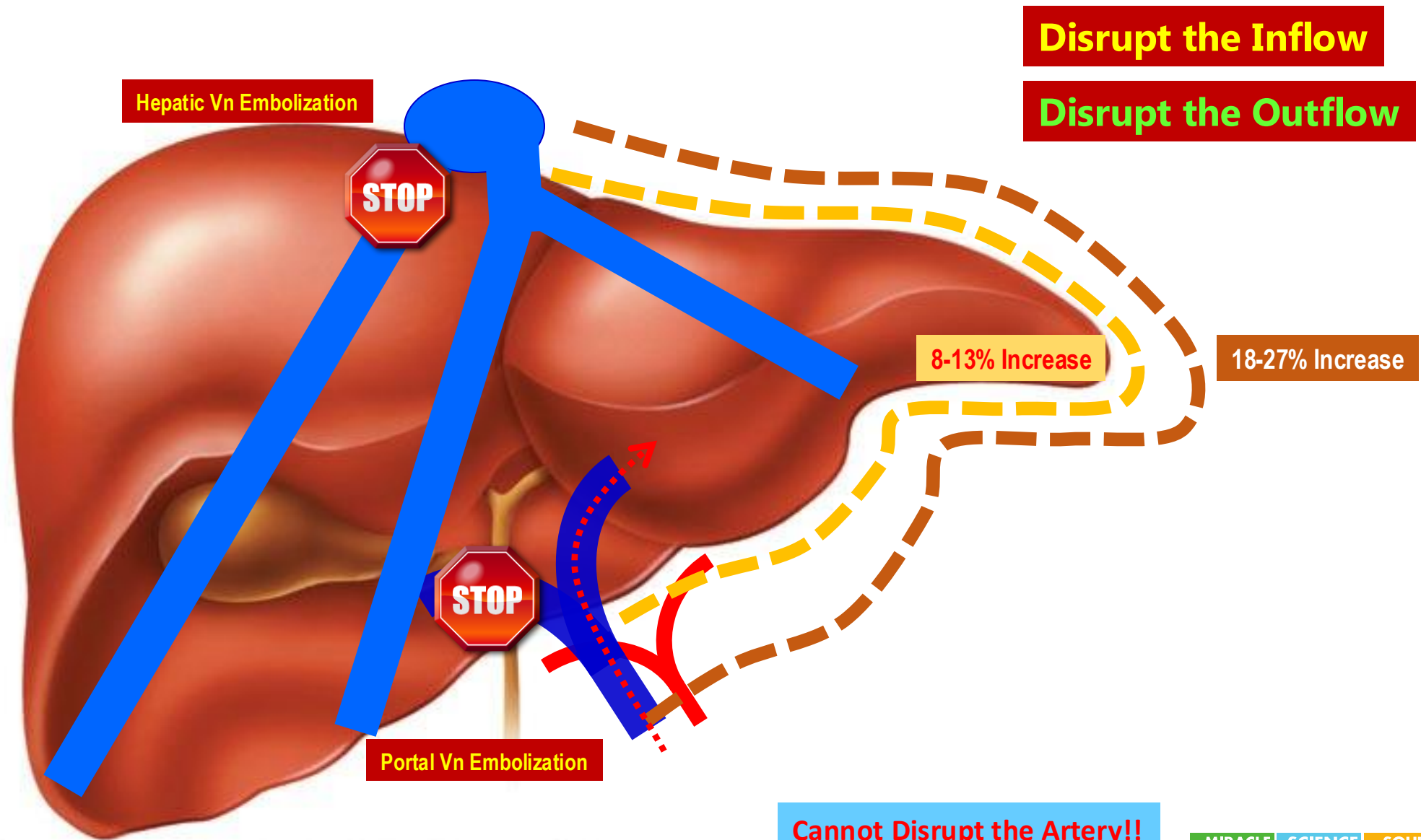
SBRT

Local

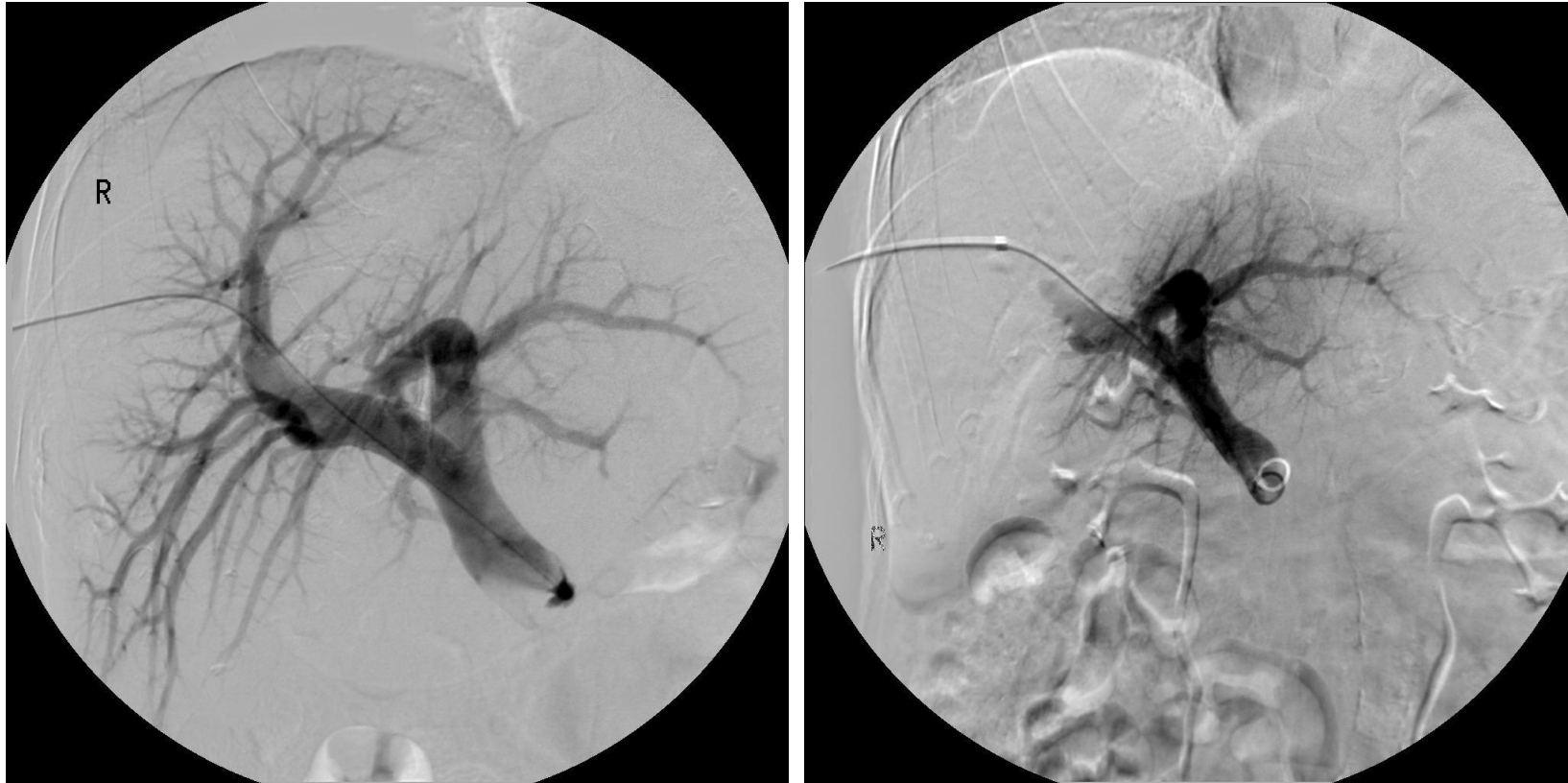
Regional

Systemic

Designing Liver Resections: Creative Strategies of Inflow and Outflow disruption

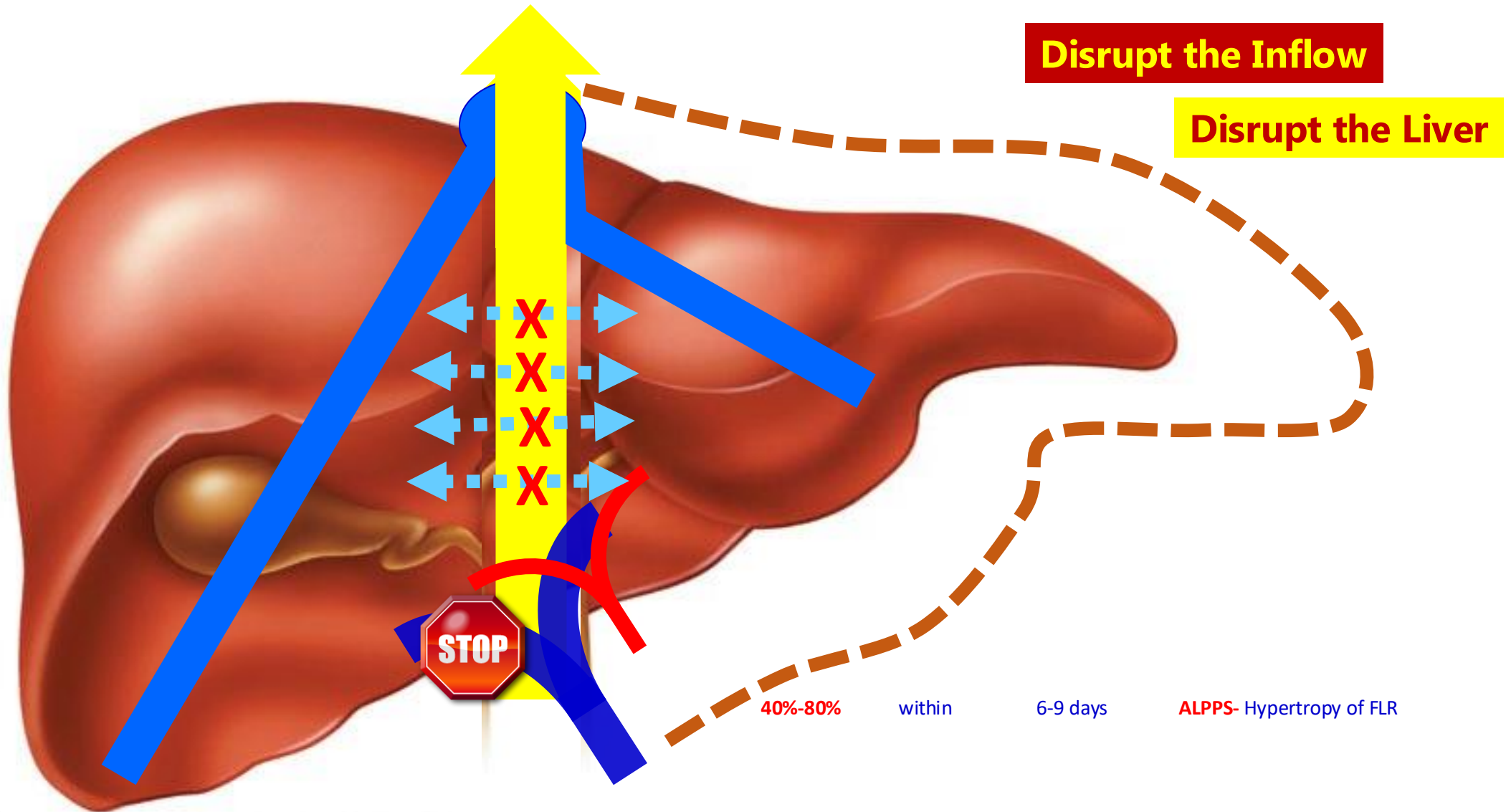


Case for PVE- CRLM



ALPPS- Associating Liver Partition and Portal Vein Ligation for Staged Hepatectomy

Designing Liver Resections: Inflow disruption and Liver disruption → ALPPS

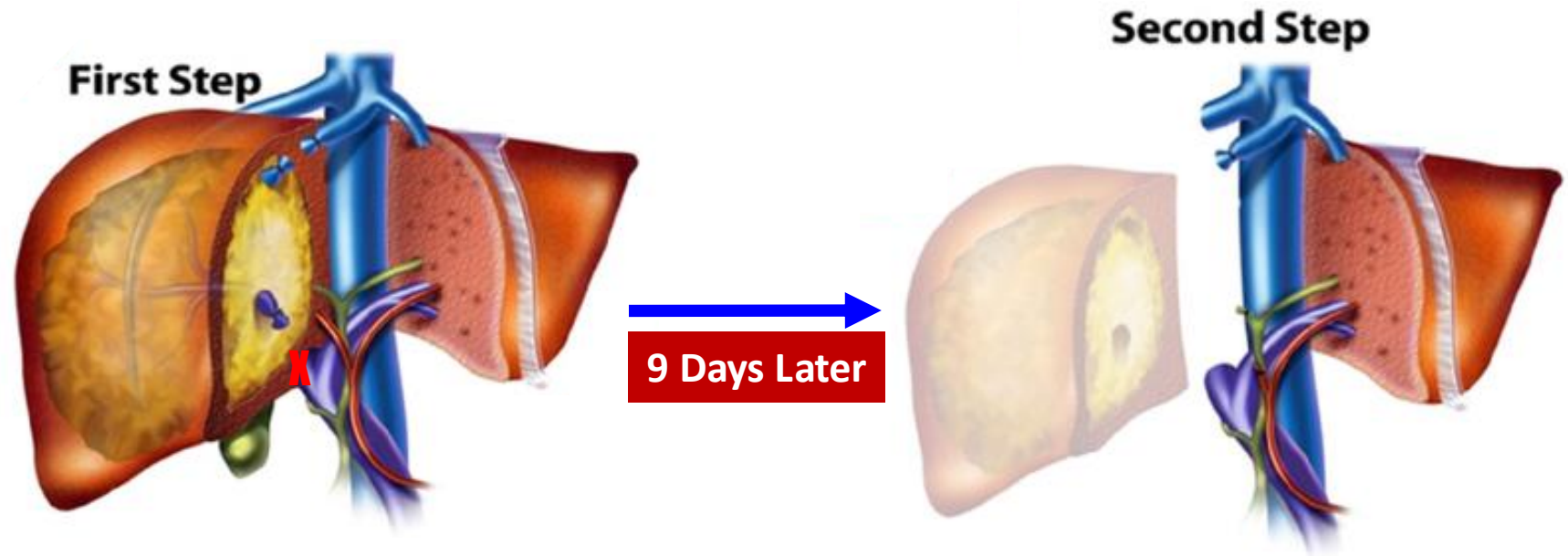
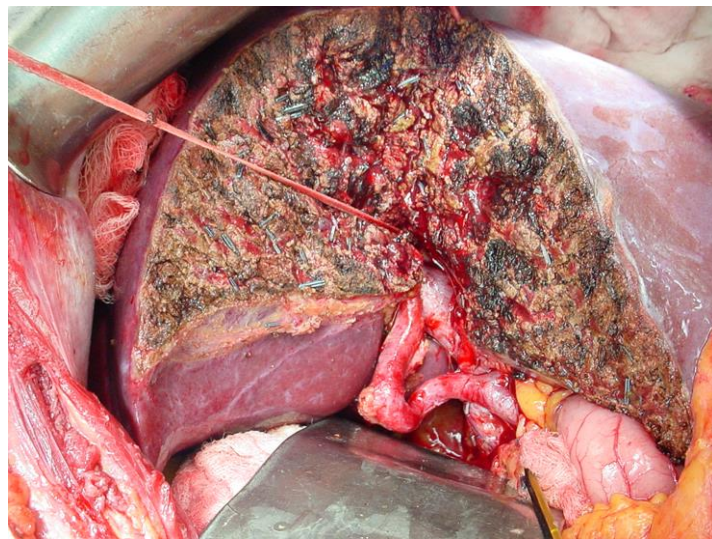


Cannot Disrupt the Artery!!

ALPPS- Associating Liver Partition and Portal Vein Ligation for Staged Hepatectomy

Strategy 5: ALPPS- Compensatory Hypertrophy

40%-80% within 6-9 days **ALPPS-** Hypertrophy of FLR
8%-27% within 2-60 days **PVL/PVE-** Hypertrophy of FLR



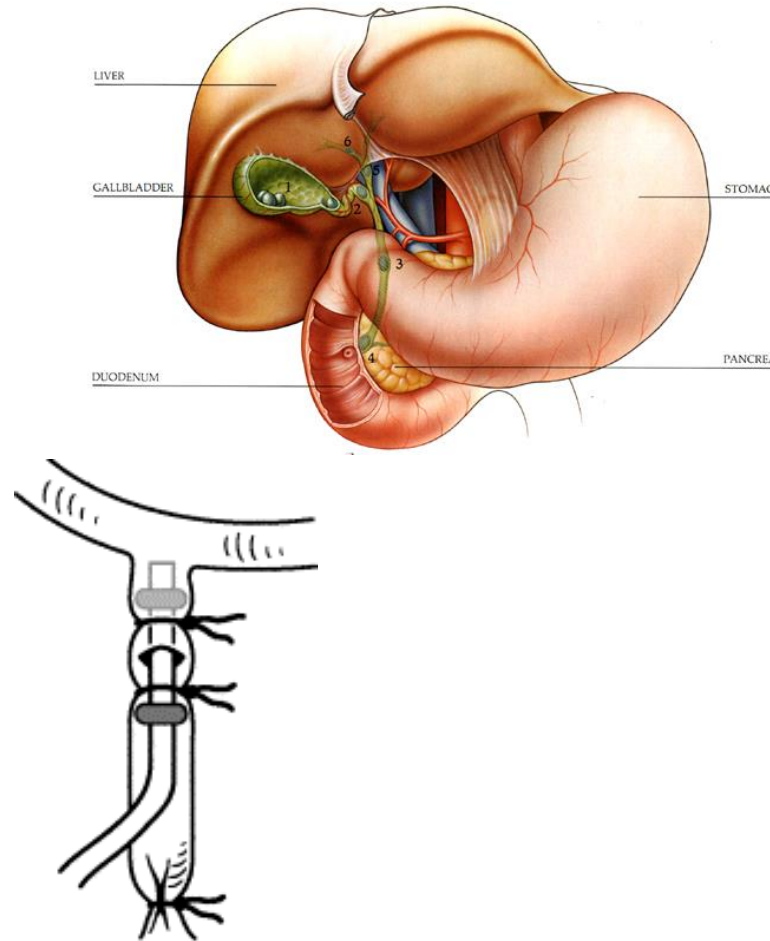
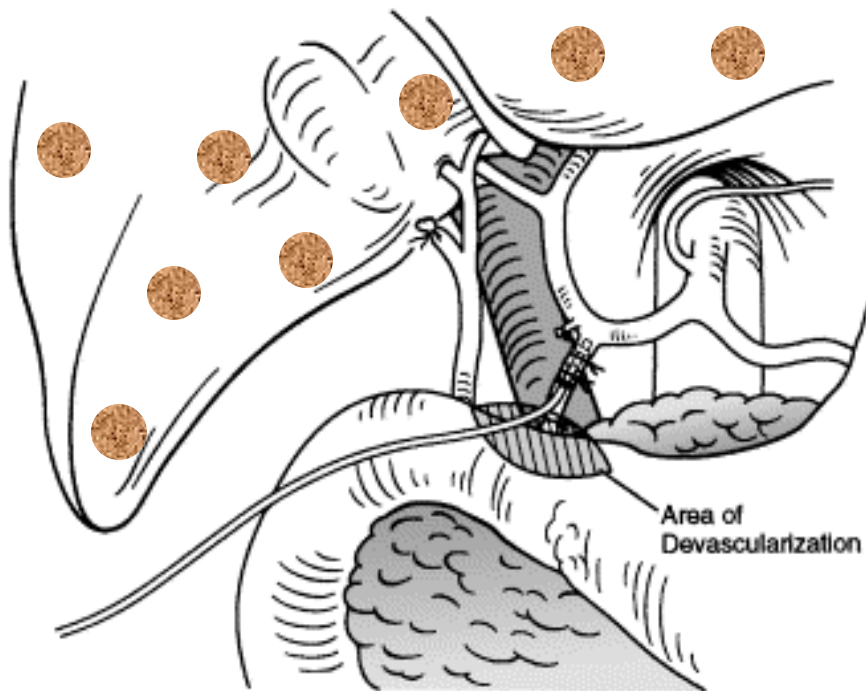
Operative morbidity **16%-64%**
Mortality **12%-23% down to 5% now**

LVD supplant the role of ALPPS going forward.
Metanalysis showed no difference between
LVD and ALPPS in the hypertrophy of the FLR
but significantly reduced morbidity and
mortality with LVD.

Hepatobiliary Pancreat Dis. Int. 2023, 22, 221–227.

Hepatic Artery Infusion

HAI



HAr → Tumors >2-3 mm

PVn → Hepatic Parenchyma

FUDR → 95-99% Extraction- 1st pass

Tumor Exposure → 400X Vs Systemic

Biliary Sclerosis Rate= 4-8%

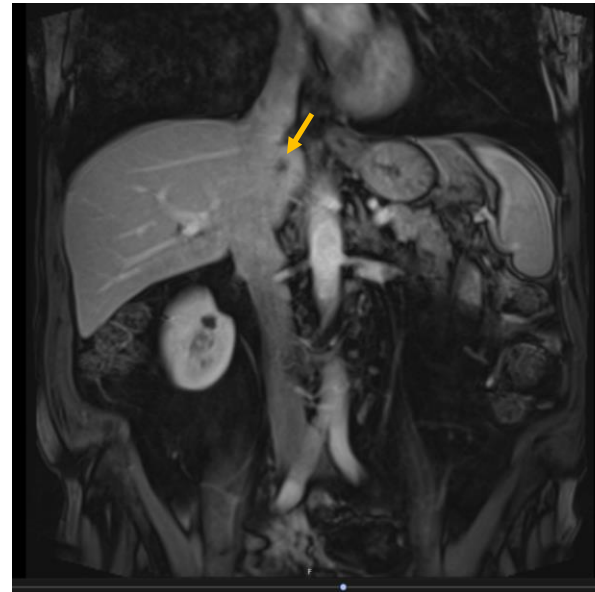
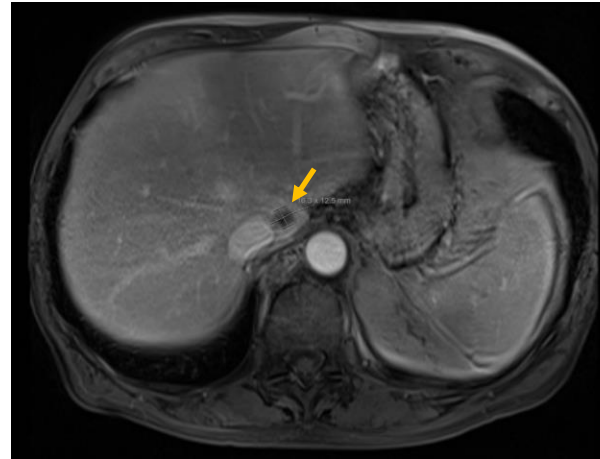
■ **Better response rate for multiple colorectal liver mets**

Case 1: Metachronous Solitary Liver Metastases (> 6months)

5/ 2017: Lap Sigmoidectomy T2N0M0

9/ 2019: Caudate Lobe- Solitary Lesion 1.6 cm

MSS, KRAS G12C



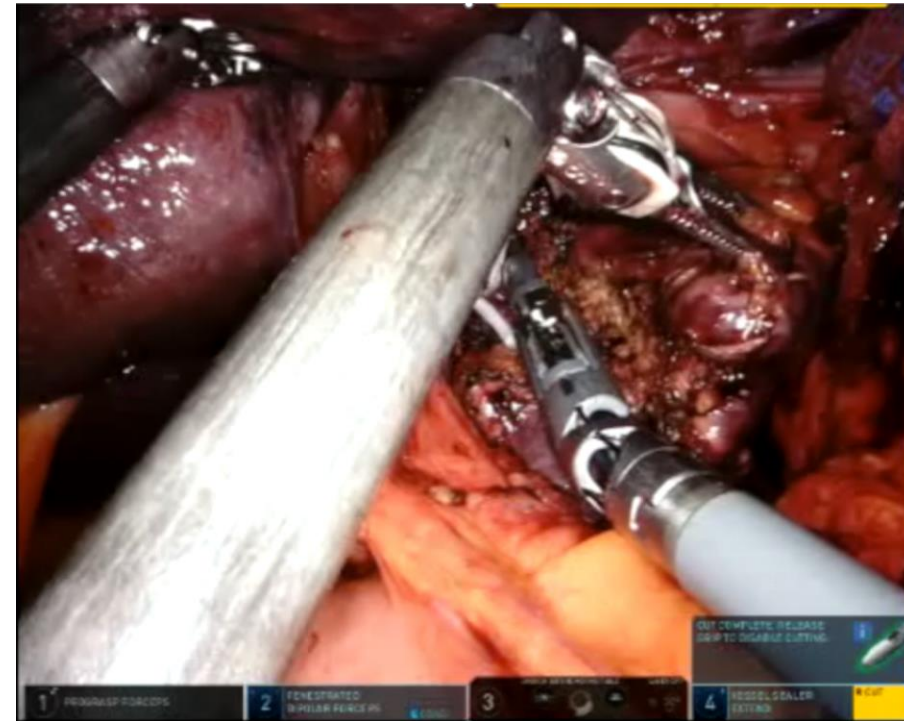
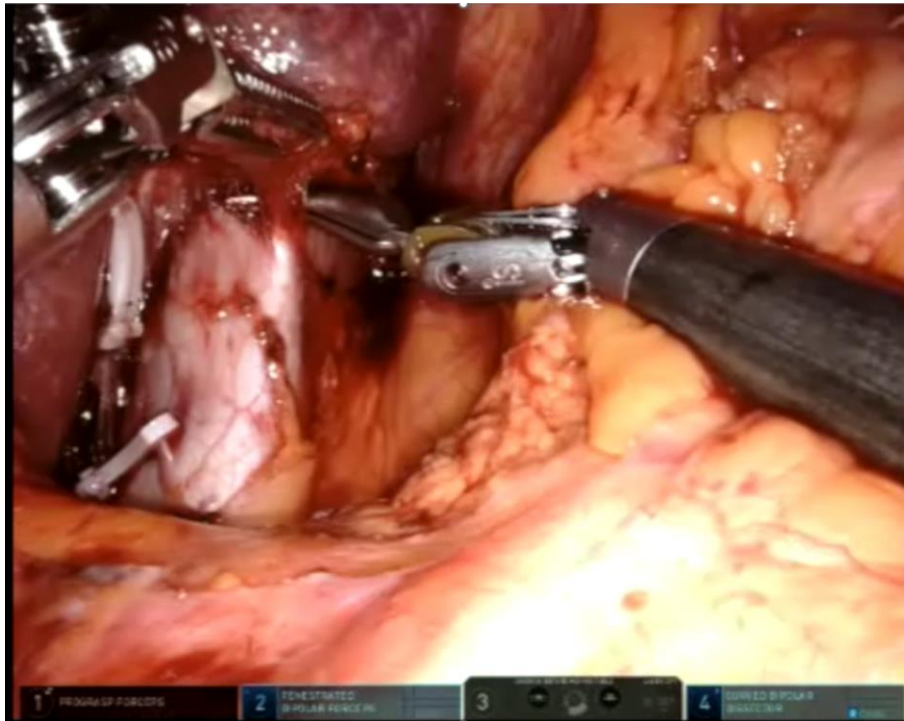
➤ Q1: Would you do Chemo first?

➤ Q2: Surgery first?

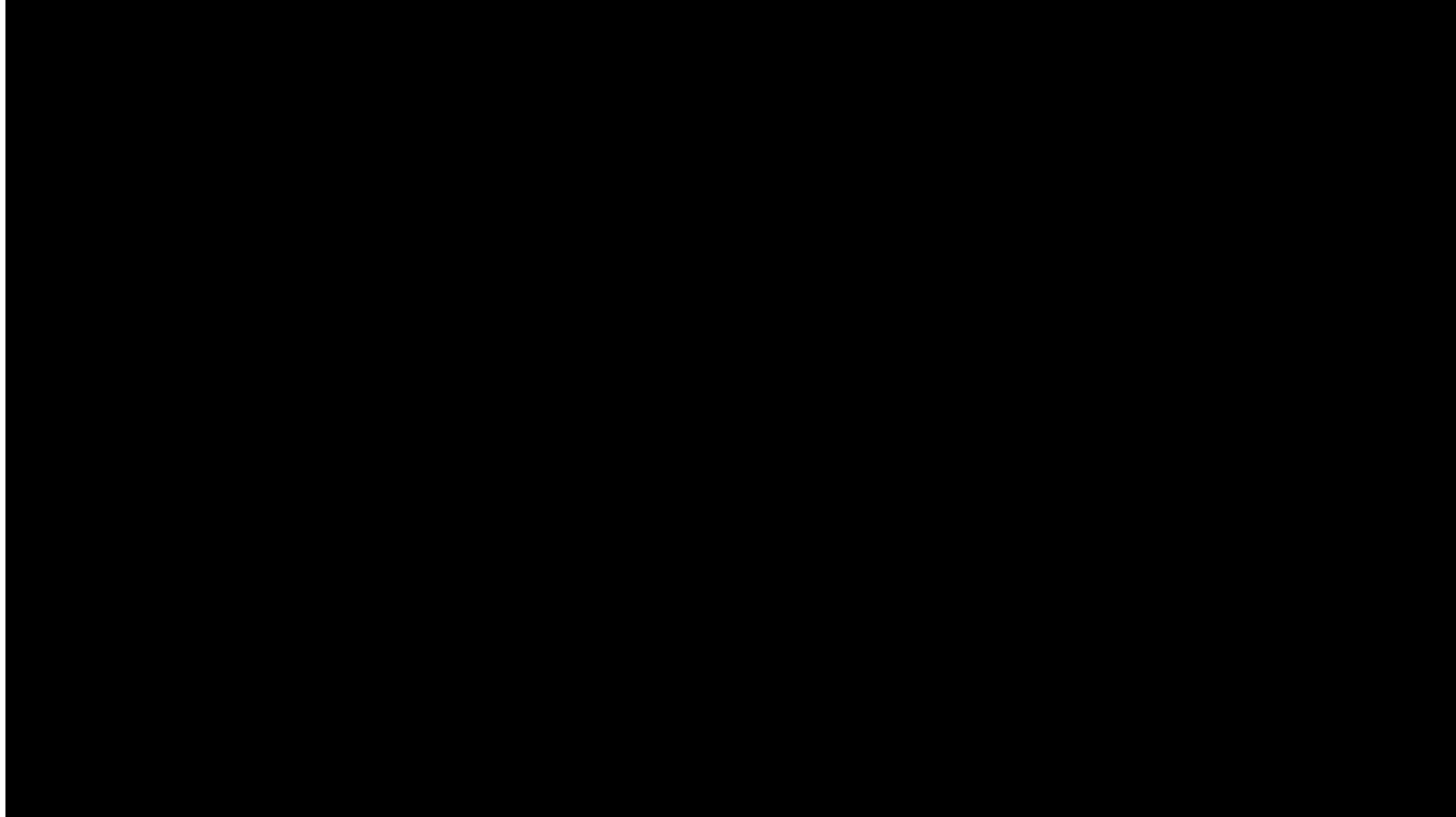
➤ Q3: SBRT first?

➤ Q4: Ablation first?

Robotic Resection of the Caudate Lobe

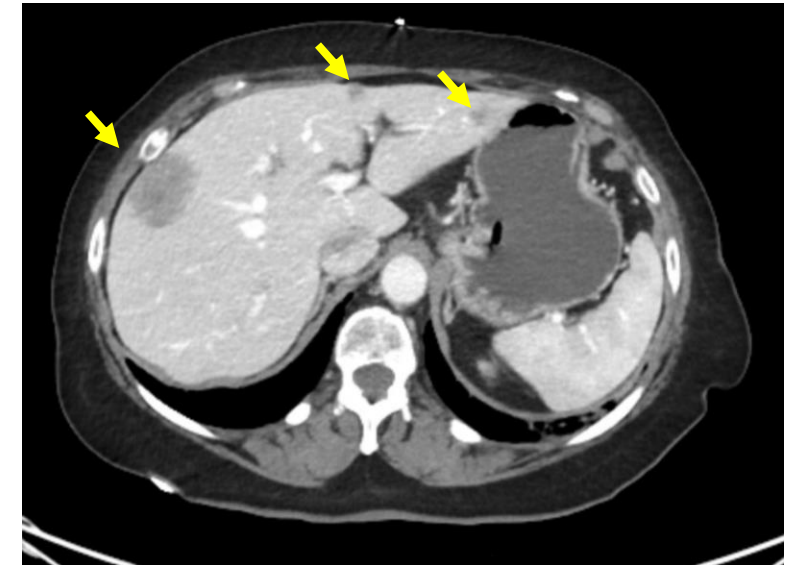
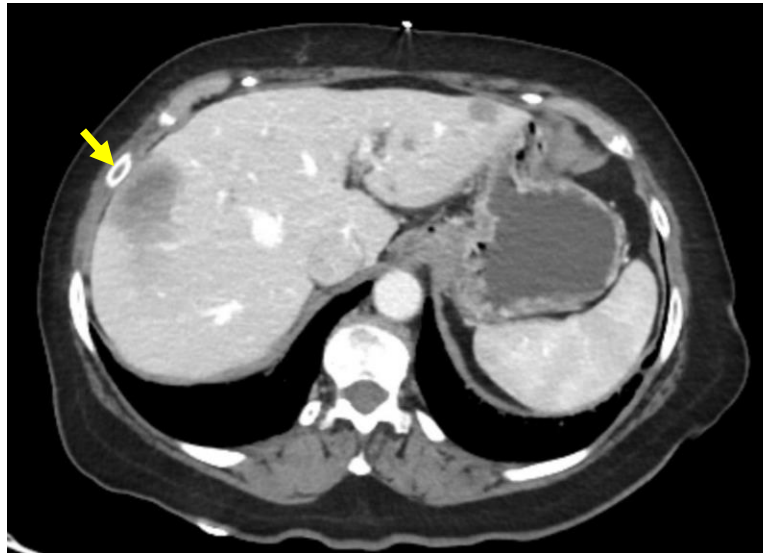
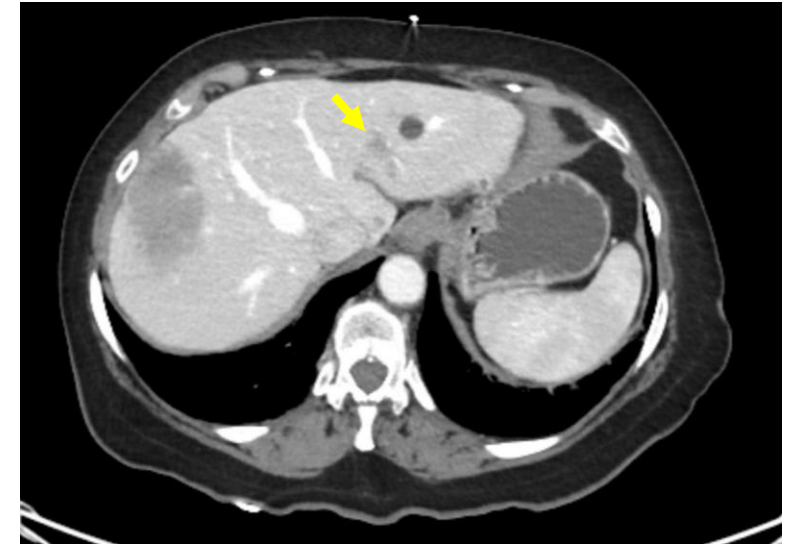
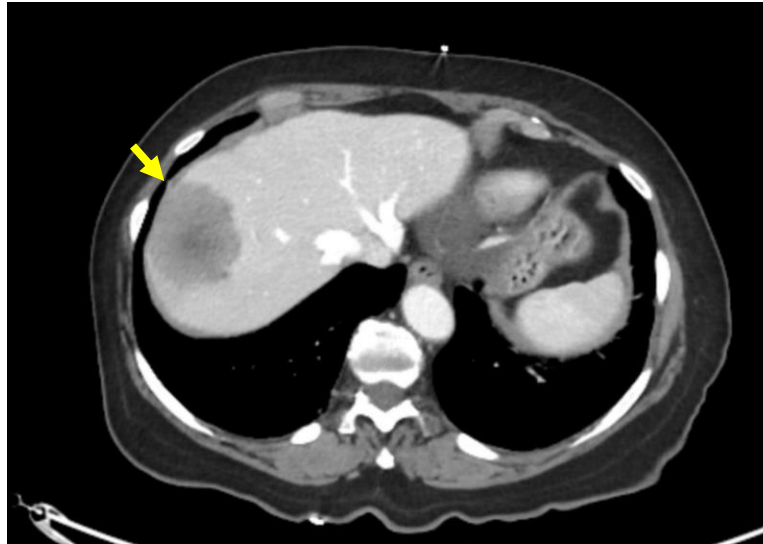
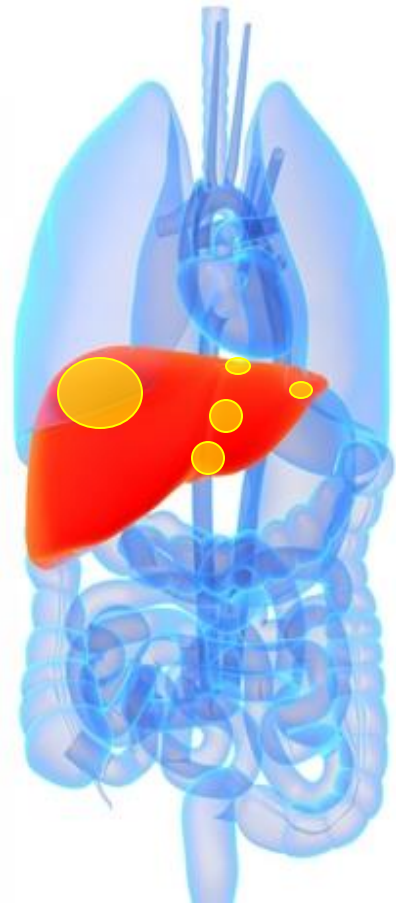


**Case 1: Metachronous Solitary Liver Metastases (> 6months)
ROBOTIC CAUDATE LOBE RESECTION**



Debate: Colorectal Cancer with Liver Metastases
Case 2: Synchronous Extensive Bilobar CRLM

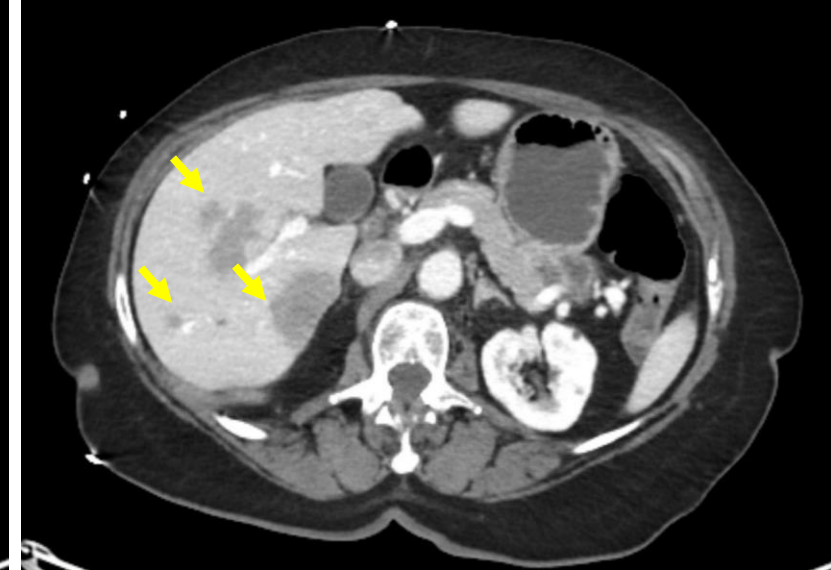
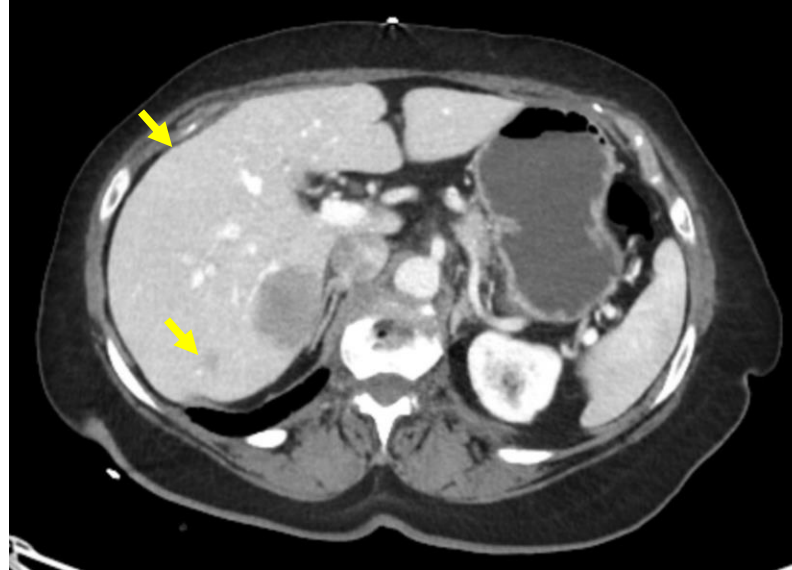
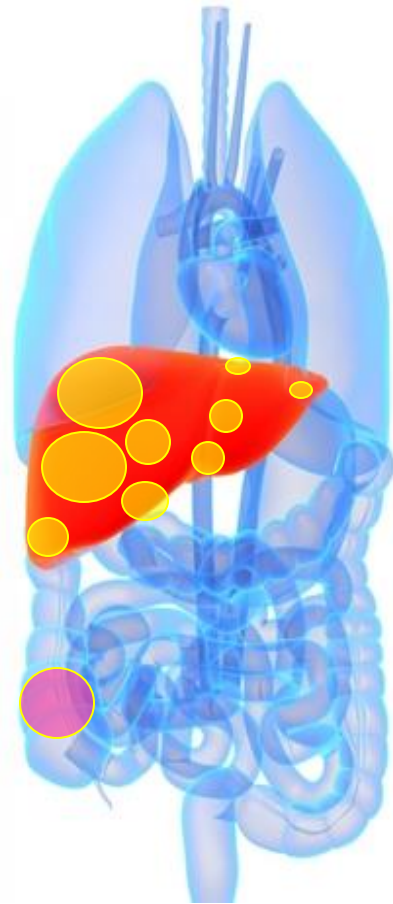
6/ 2024: Right Sided Colon Cancer
Extensive Bilobar Liver Mets



Debate: Colorectal Cancer with Liver Metastases

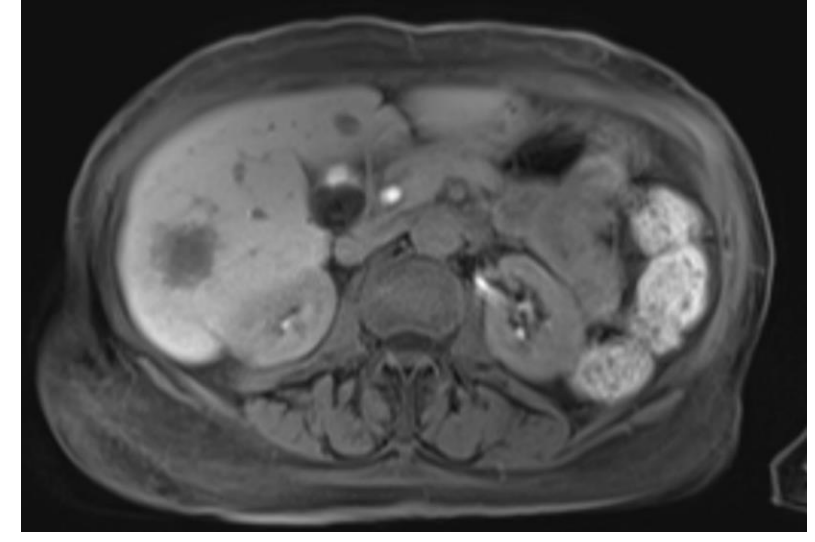
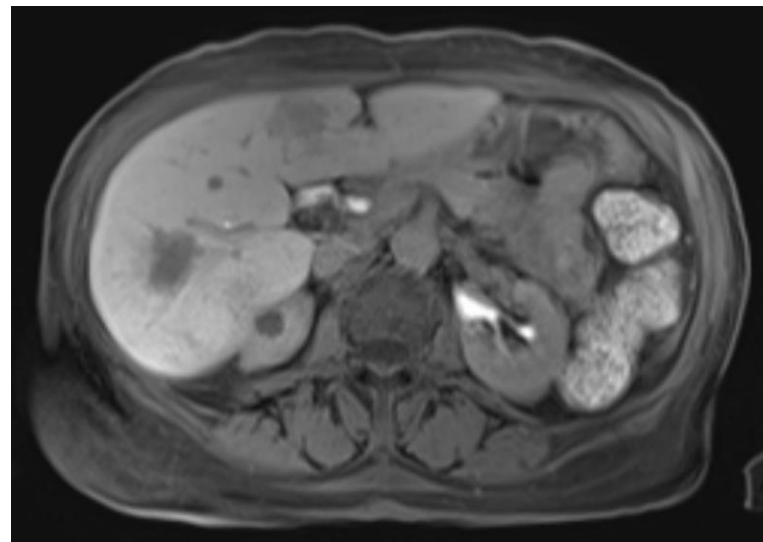
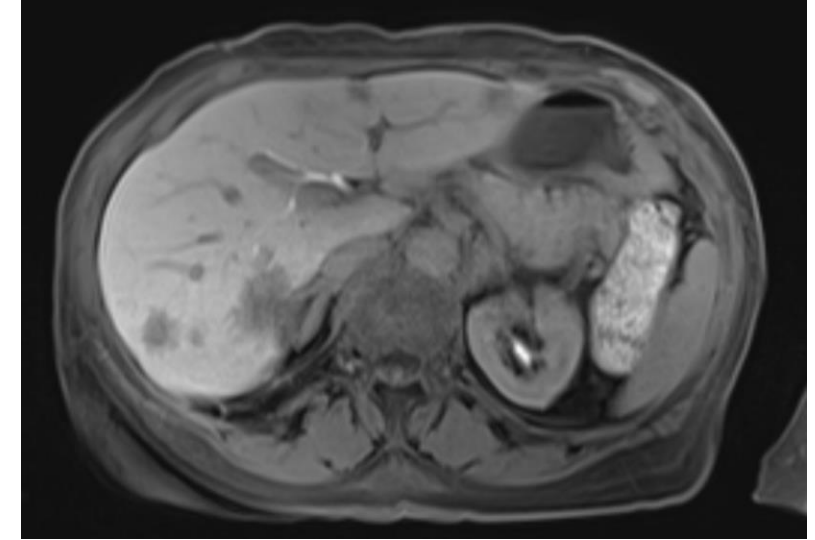
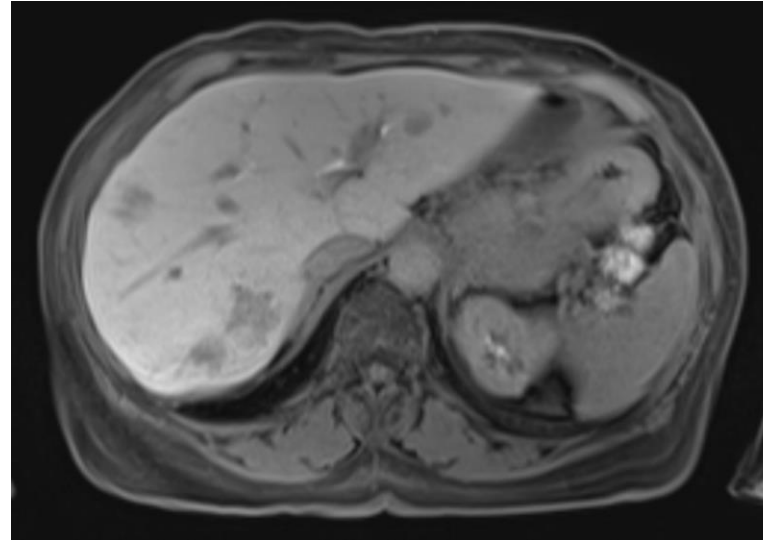
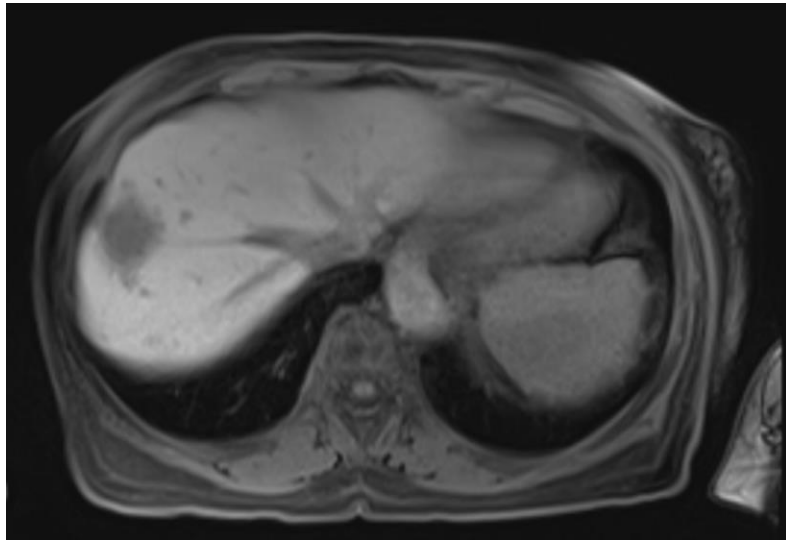
Case 2: Synchronous Extensive Bilobar CRLM

6/ 2024: Right Sided Colon Cancer
Extensive Bilobar Liver Mets



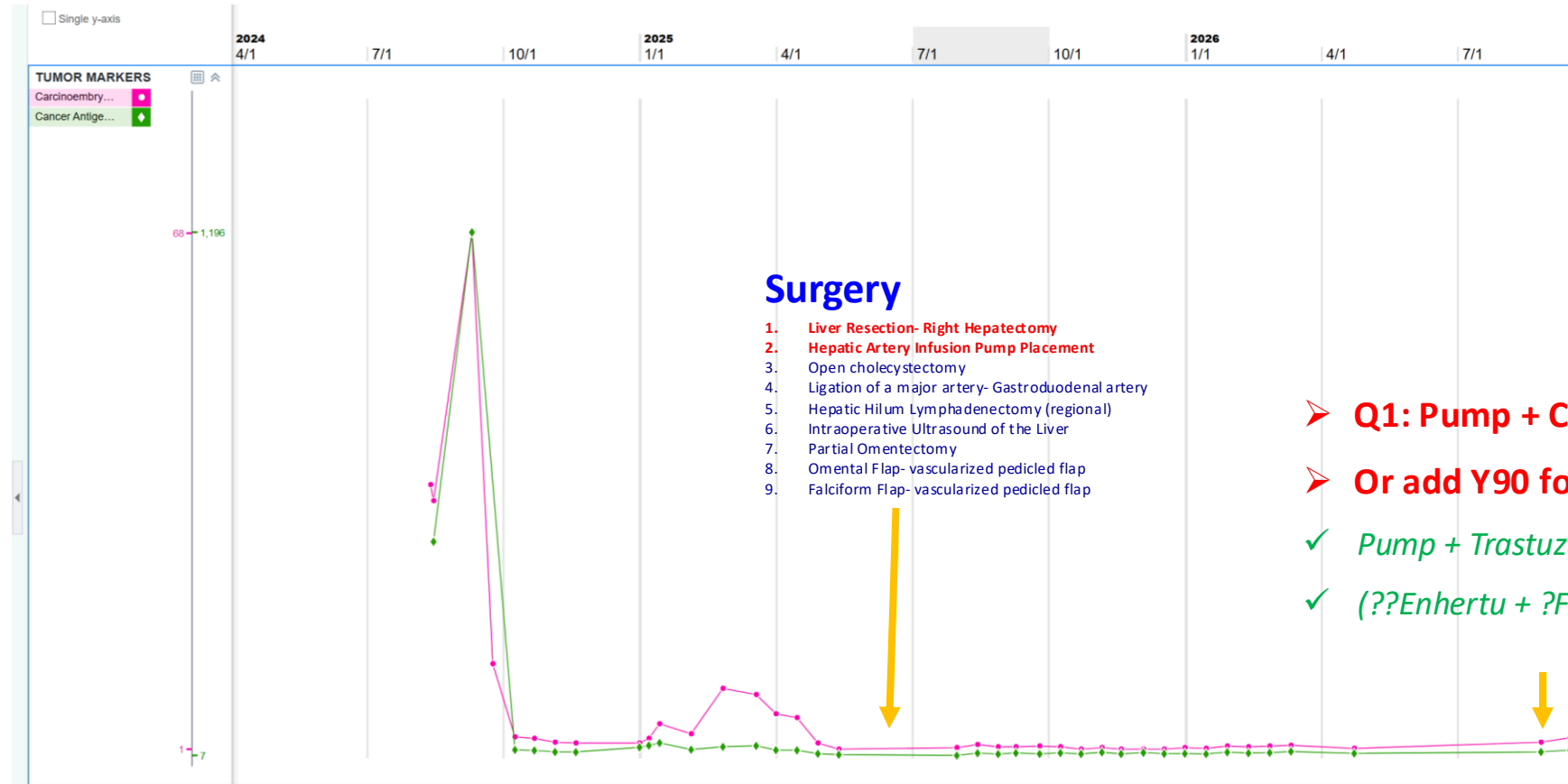
- **Q1: Chemo – Surgery –Y90 First?**
- ✓ *MMR proficient, KRAS, BRAF, NRAS wild*
- ✓ FOLFOX + Avastin- Difficulty tolerating
- ✓ Repeated diverticular abscess- left side

Case 2: Synchronous Extensive Bilobar CRLM- **Post Chemo**



Debate: Colorectal Cancer with Liver Metastases

Case 2: Synchronous Extensive Bilobar CRLM- Post Chemo



➤ Q1: Pump + Chemo or Pump alone?

➤ Or add Y90 for the left?

✓ Pump + Trastuzumab + Tucatinib

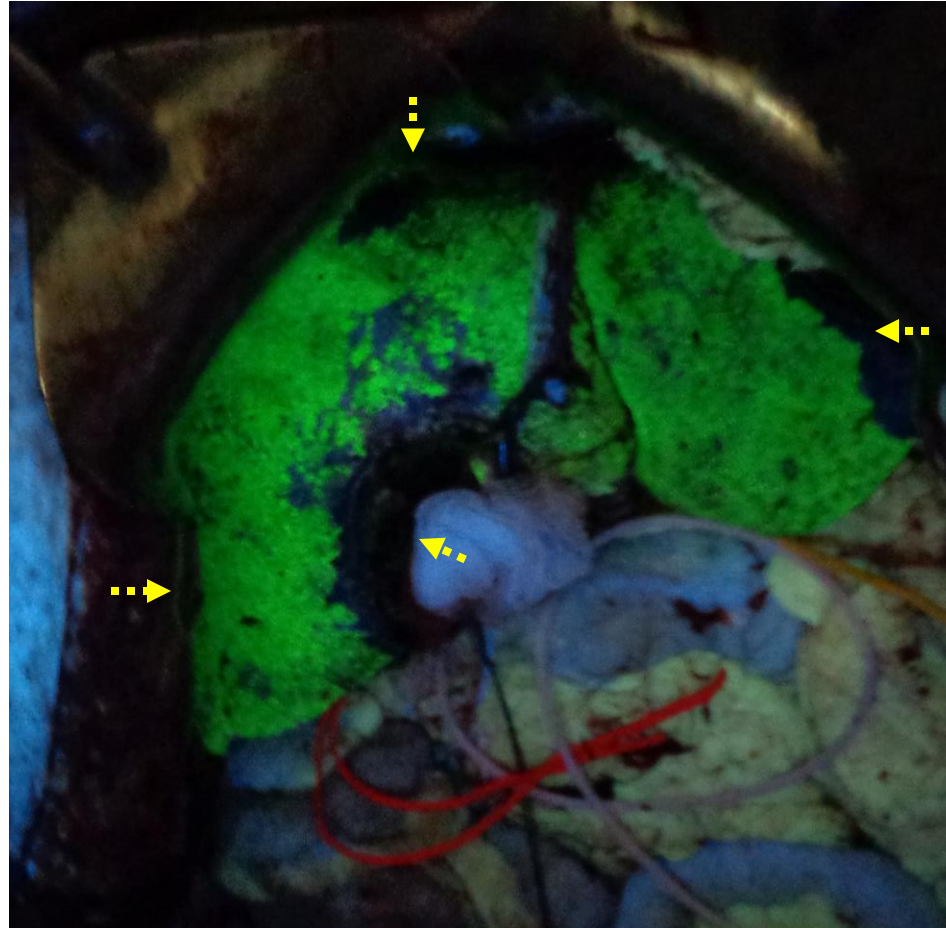
✓ (??Enhertu + ?FOLFOX ? FOLFIRI)

Colon Ca: 5cm mass in ascending colon, path showed poorly dif adenocarcinoma, MMR proficient, KRAS, BRAF, NRAS wild, PIK3CA pM1043V, HER2 amplification

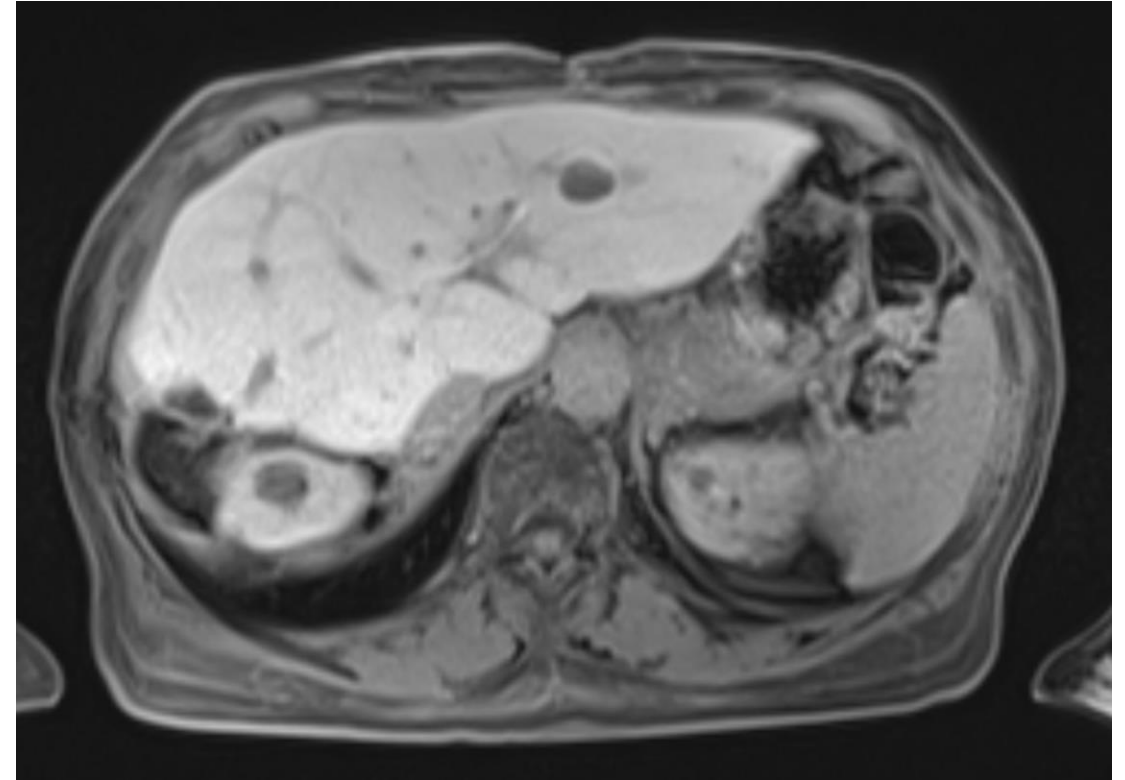
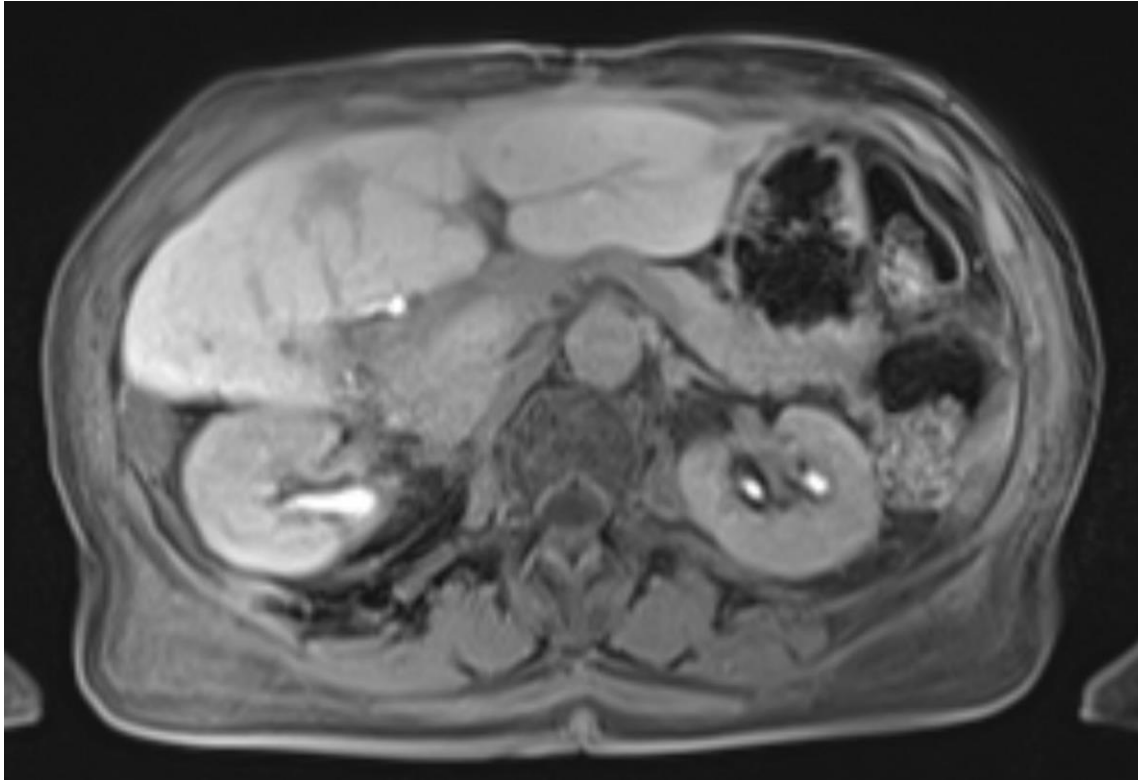
Molecular/genetic: Tempus xT (648 gene panel): Genomic variants: Potentially actionable: PIK3CA mutation, ERBB2 amplification.

Biologically relevant: TP53, PTPN11, APC (p.R1450*, p.L954*), FBXW7, RARA, TOP2A. Pertinent negatives: KRAS, BRAF, NRAS TMB: 4.7 mug/Mb MS-stable VUS: MAP2K4, HSP90AA1, ZFH3, CDK6, EPHA7, CSF1R, ITPKB.

Post Resection: Multiple partial resections (8 tumors)



Case 2: Synchronous Extensive Bilobar CRLM- Post Surgery, Pump & Her2 Rx



SUMMARY- We should do what's BEST for the patient

ONE BIG TEAM

Surgeons $\leftrightarrow$ Rad Onc $\leftrightarrow$ IR $\leftrightarrow$ Med Onc

Enemy: ~~CANCER~~

SIZE

Location

