Advanced
Laparoscopic
*Live*R
(AL*Live*R)
Masterclass
2014

LLR and IOUS: a necessity!

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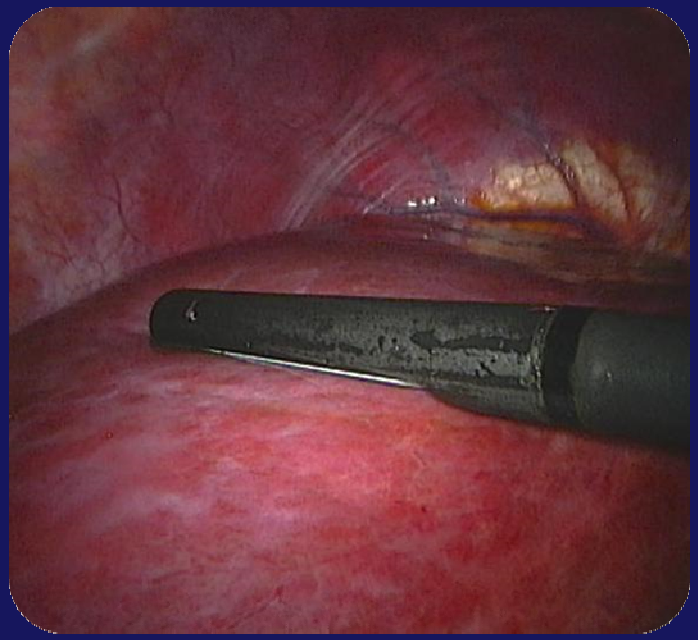
Mauriziano Hospital, Torino

Ghent, October 24th 2014

Laparoscopic Liver Ultrasound (LUS)



Staging

Treatment

Surgical Planning

Open IOUS role during hepatectomy

SURGICAL PLANNING

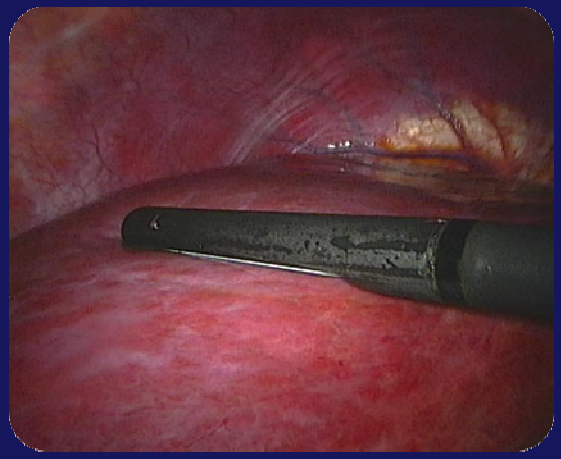
- Study of normal liver anatomy
- Identification of vascular anomalies
- Lesion localization
- Detection of new nodules
- Number and nature of the lesions
- Site and relationships with anatomical structures

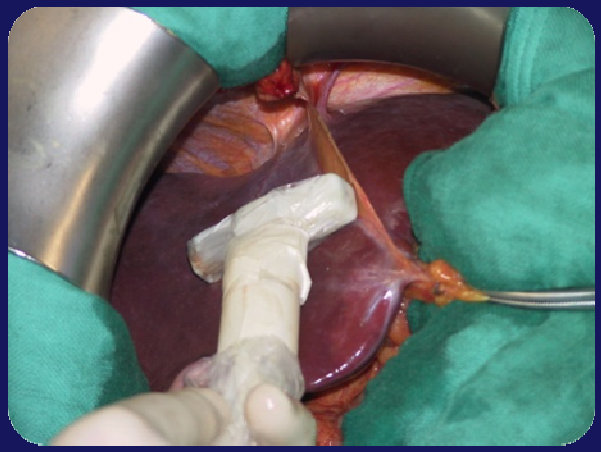
LUS?

Comparison of laparoscopic and open intraoperative ultrasonography for staging liver tumours

British Journal of Surgery 2013

L. Viganò, A. Ferrero, M. Amisano, N. Russolillo and L. Capussotti



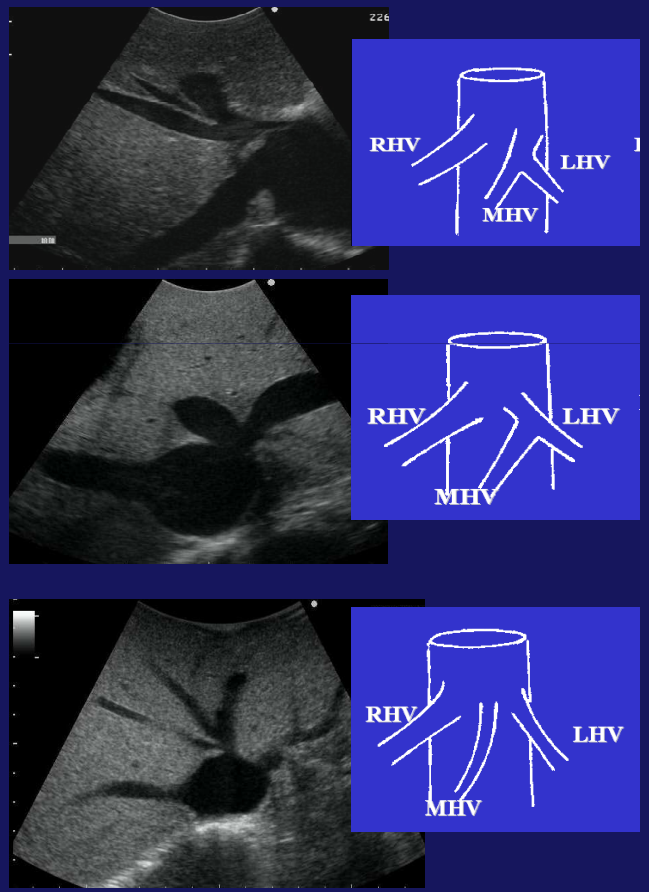


65 patients with 119 lesions

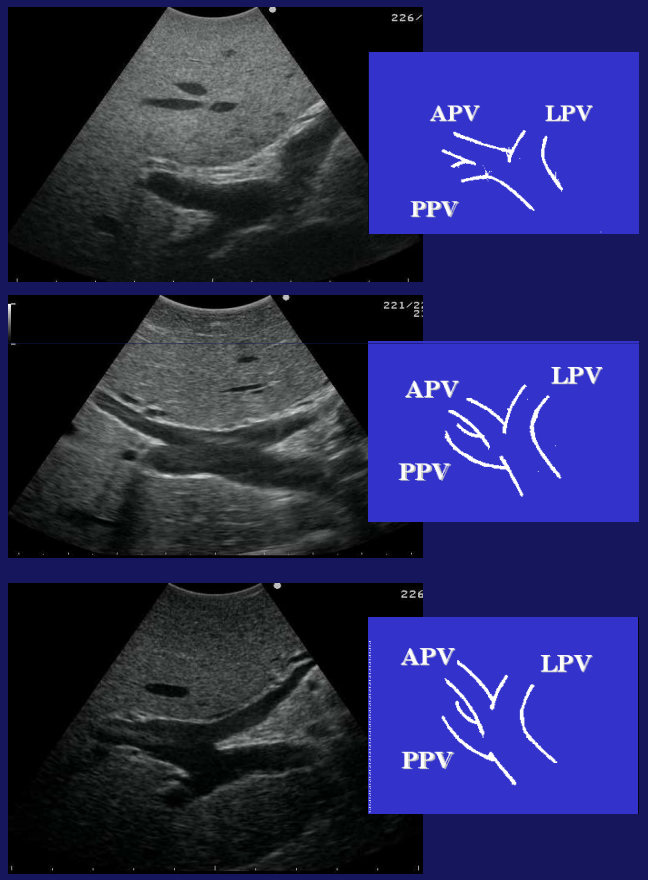
To compare Laparoscopic vs. Open IOUS, in terms of liver anatomy study, staging and surgical strategy planning

Anatomic landmark

MHV-LHV IVC confluence



Portal vein division



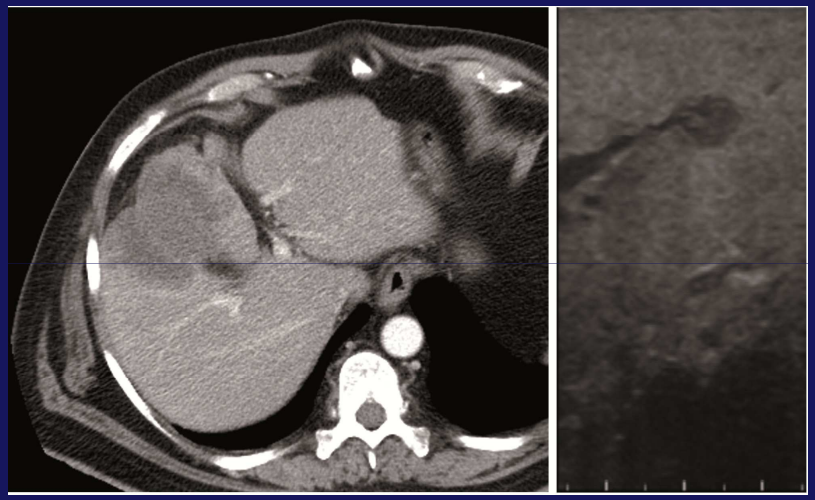
Agreement 69%

Agreement 92%

New nodules – Per lesion analysis

154 lesions at final pathology vs. 119 preop. imaging

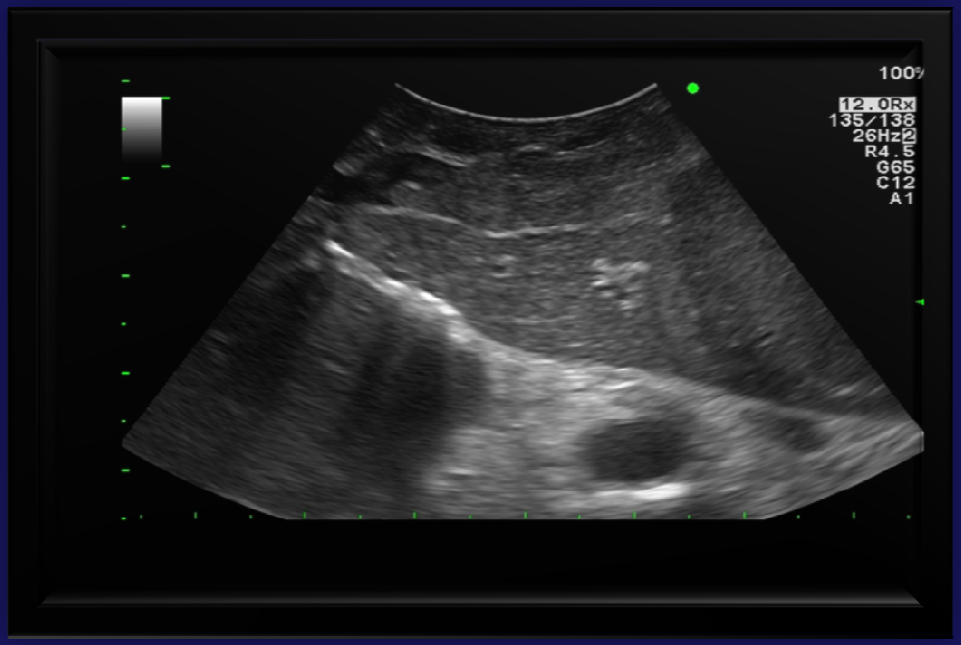
36 true new nodules (+ 30%) in 16 patients (24.6%)

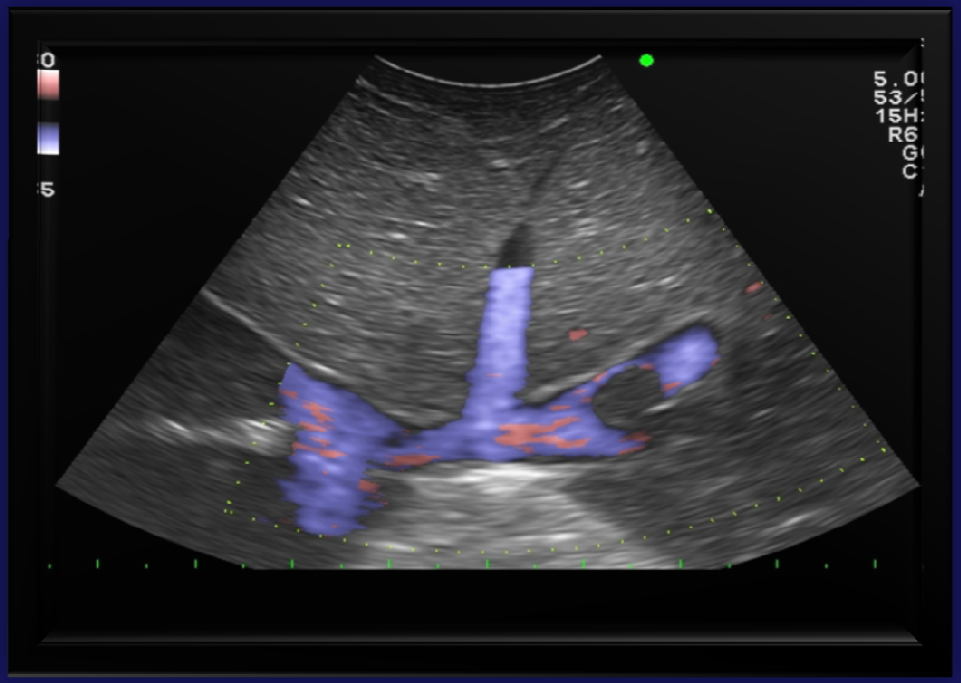


	Preop imaging	Lap IOUS	Open IOUS
Sensitivity	77.1%	99.4%	100%
Accuracy	76.2%	93.9%	96.2%

SCHEDULED LAPAROSCOPIC BISEGMENTECTOMY S2-3

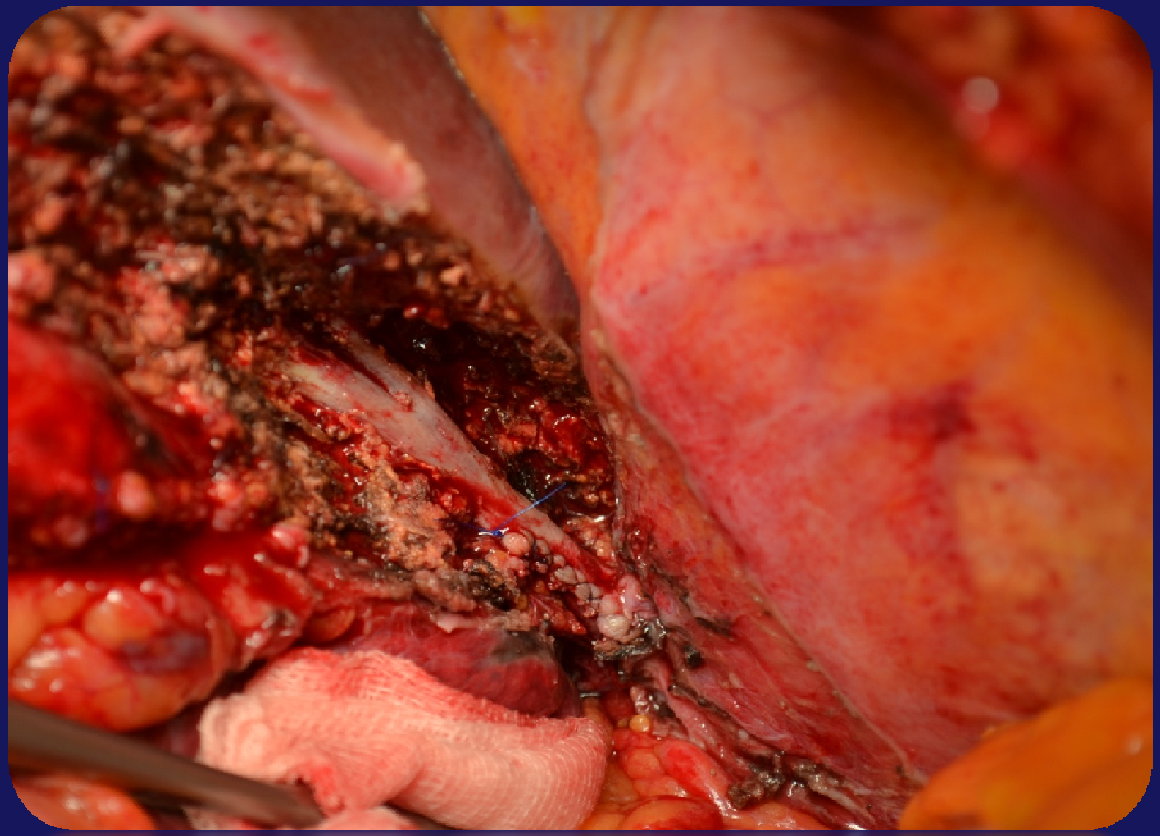
CONVERSION TO LAPAROTOMIC BISEGMENTECTOMY S2-3



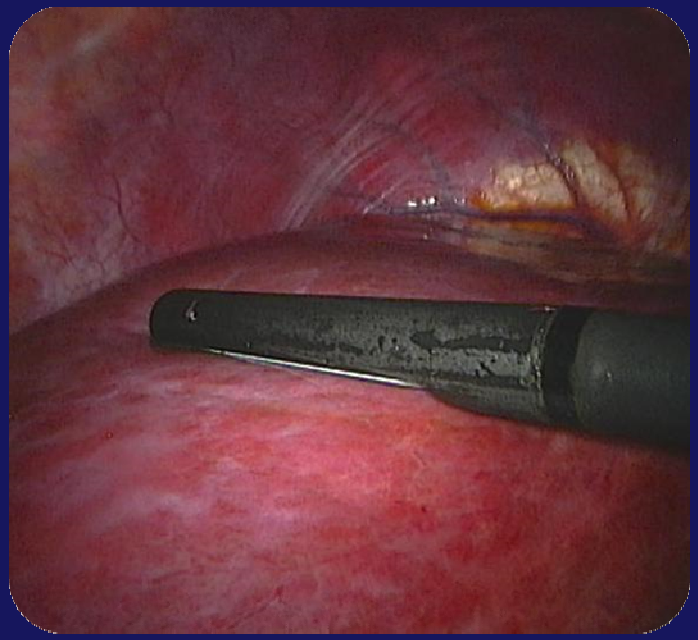


SCHEDULED LAPAROSCOPIC BISEGMENTECTOMY S2-3

CONVERSION TO LAPAROTOMIC BISEGMENTECTOMY S2-3 EXTENDED TO S4a



Laparoscopic Liver Ultrasound



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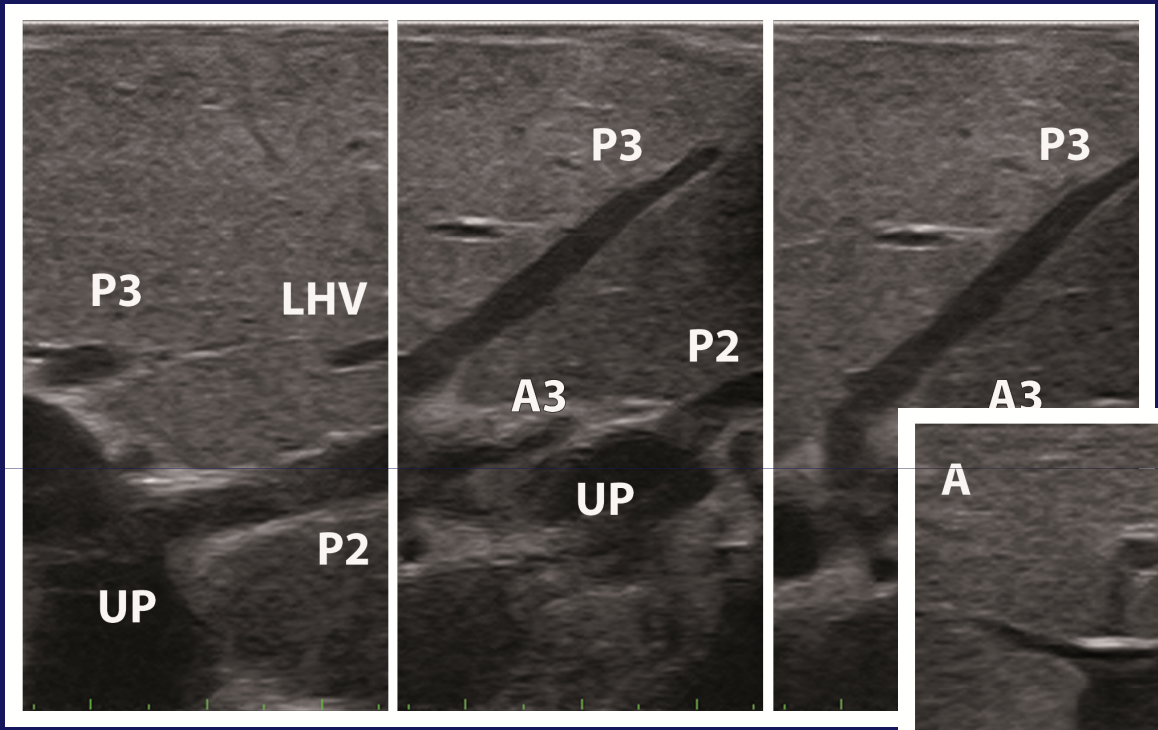
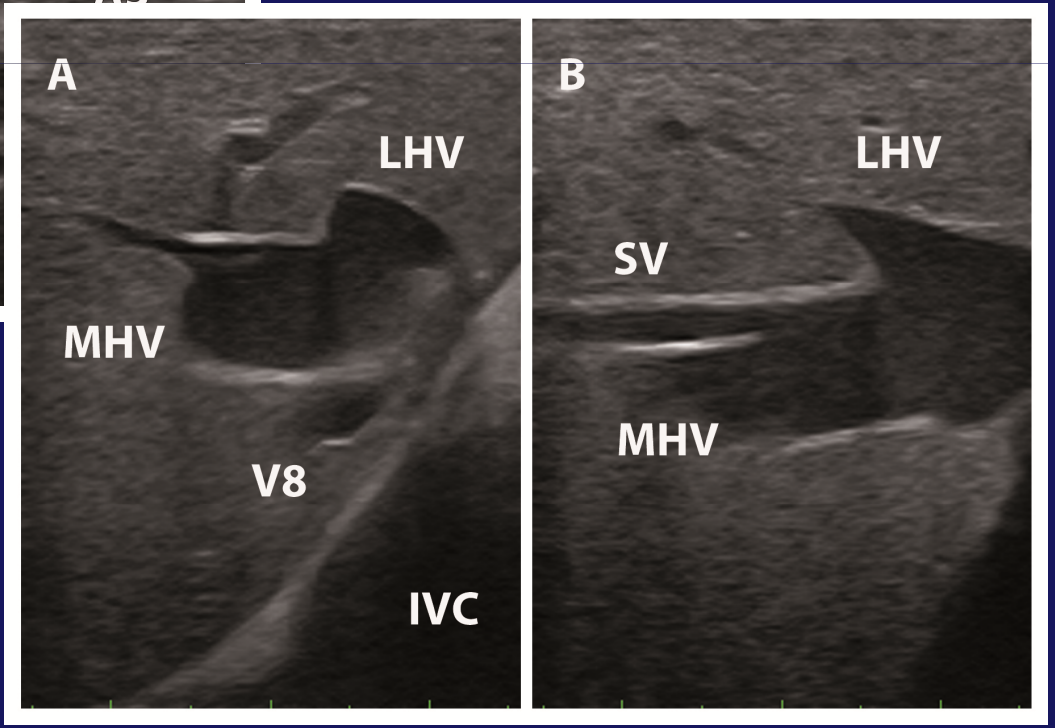
GUIDANCE OF LIVER RESECTION

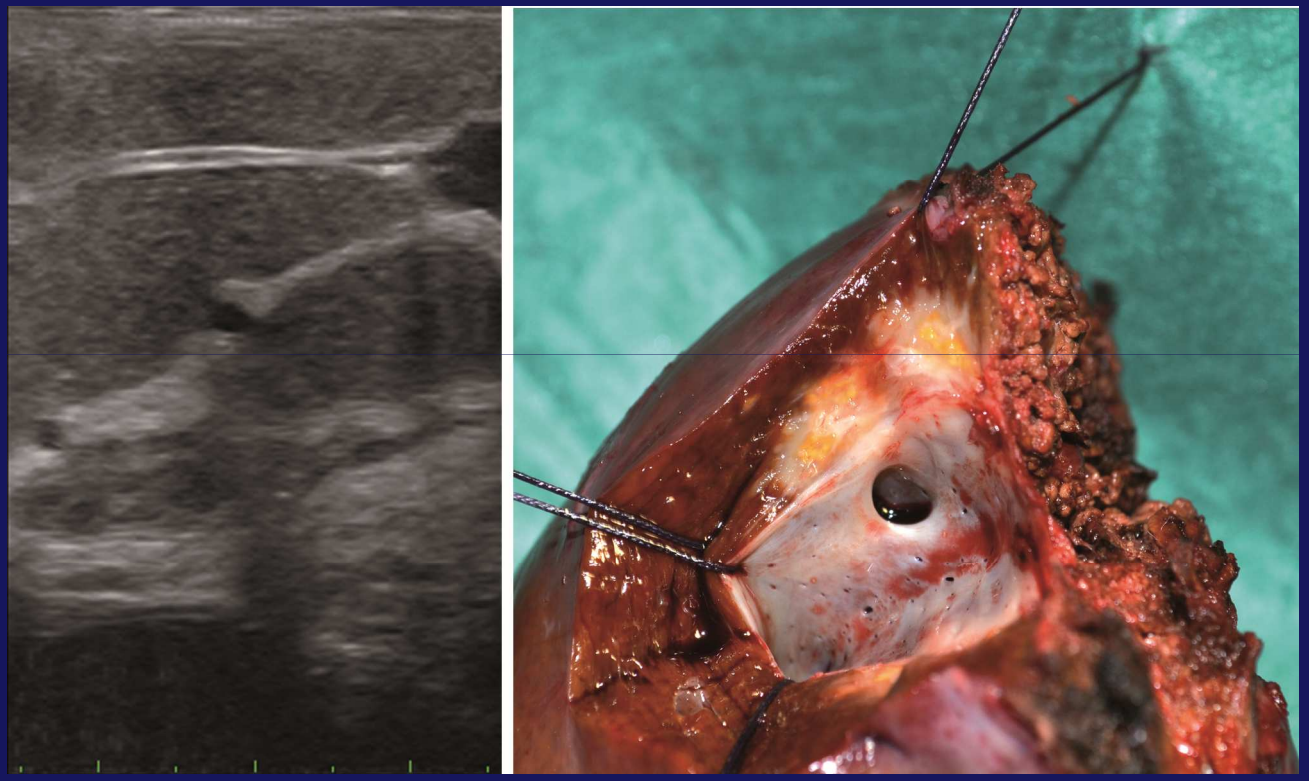
- Evaluation of vascular and biliary pedicles
- Planning of the cut surface
- Evaluation of surgical margin during resection

ANATOMIC LANDMARK

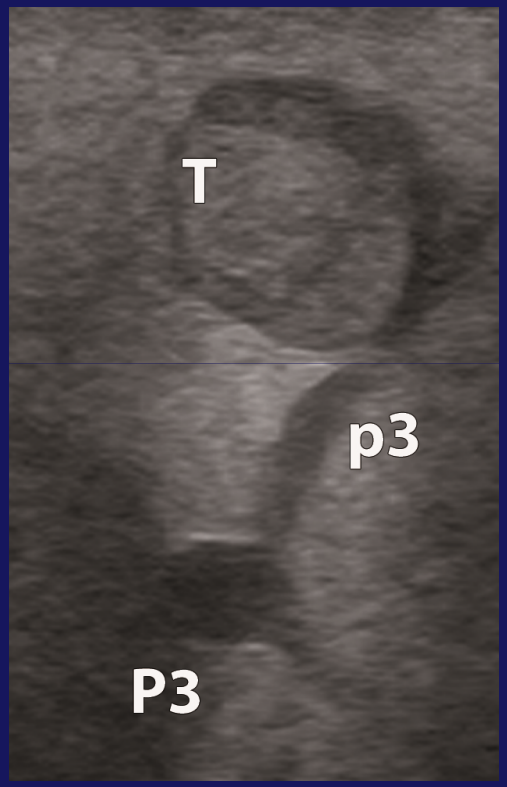


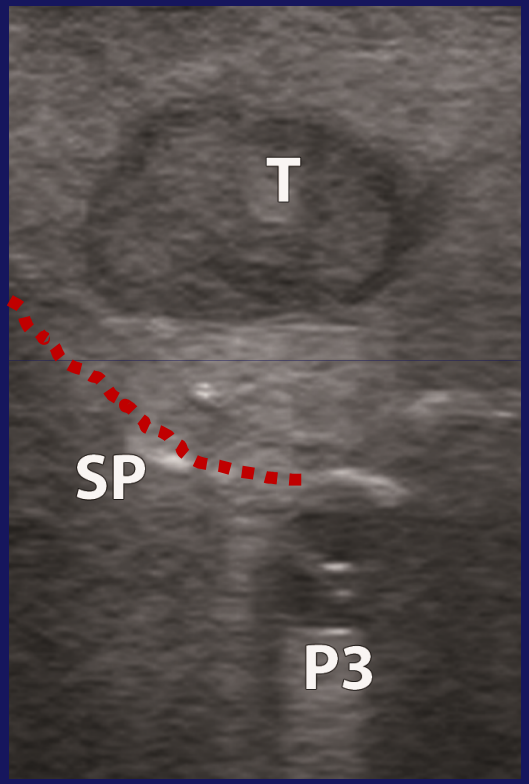


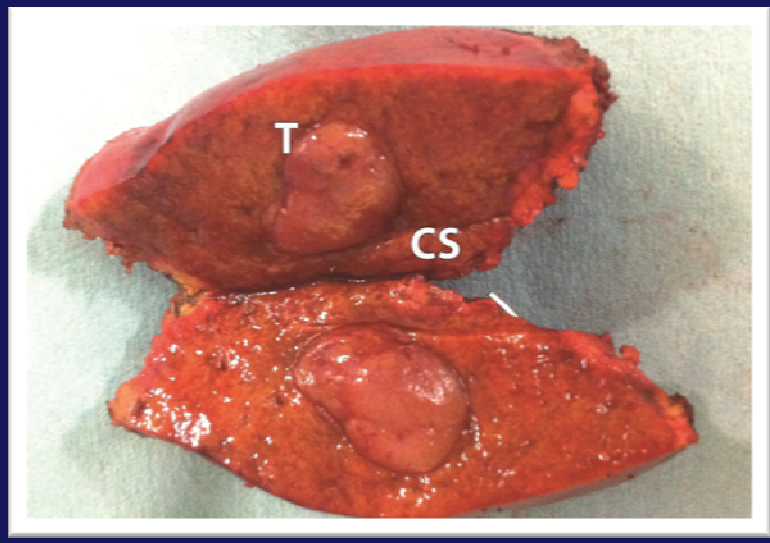
PLANNING OF THE CUT SURFACE



PLANNING OF THE CUT SURFACE



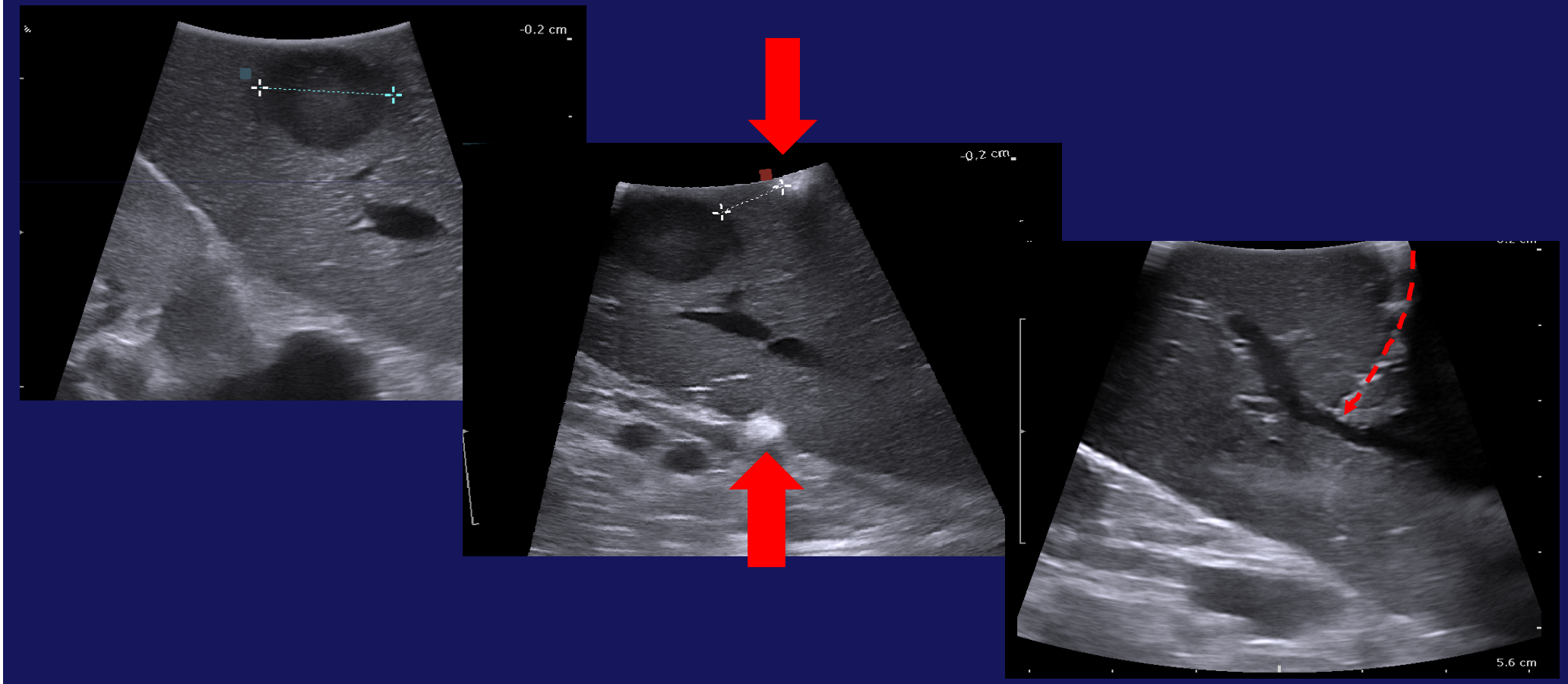




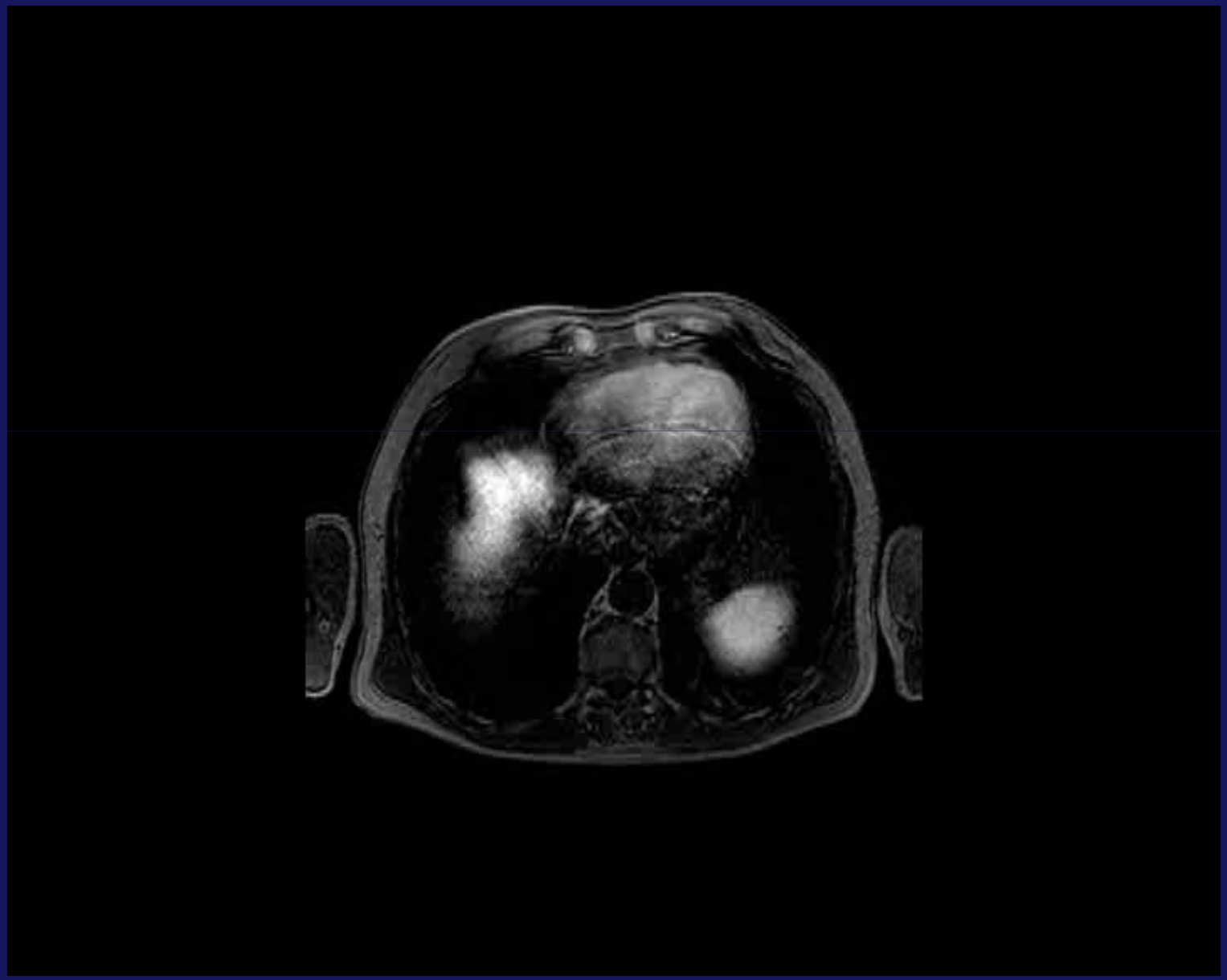
Ultrasound-guided laparoscopic liver resections

Alessandro Ferrero · Roberto Lo Tesoriere · Nadia Russolillo · Luca Viganò · Fabio Forchino · Lorenzo Capussotti

Surg Endosc **2014**

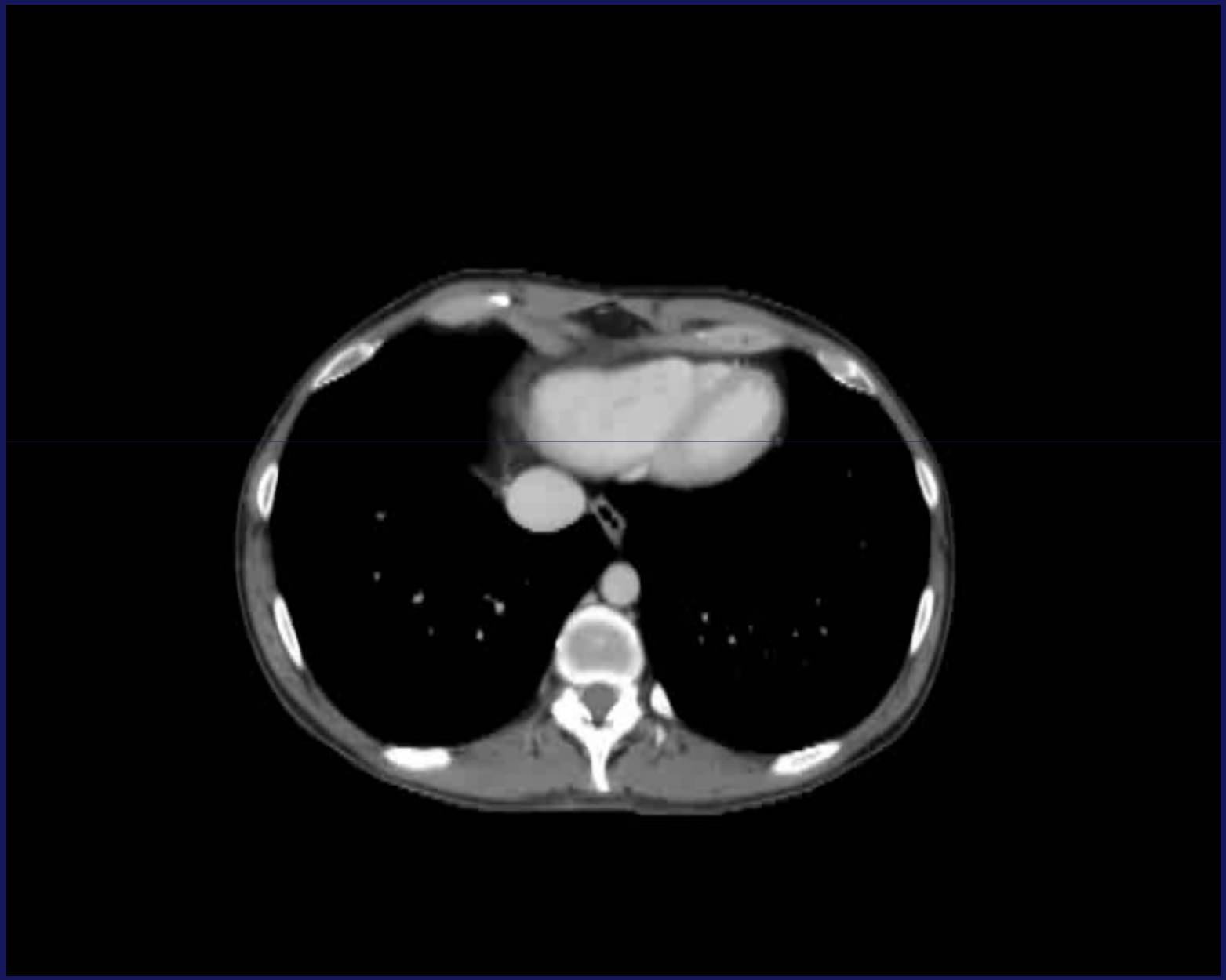


Resection S3

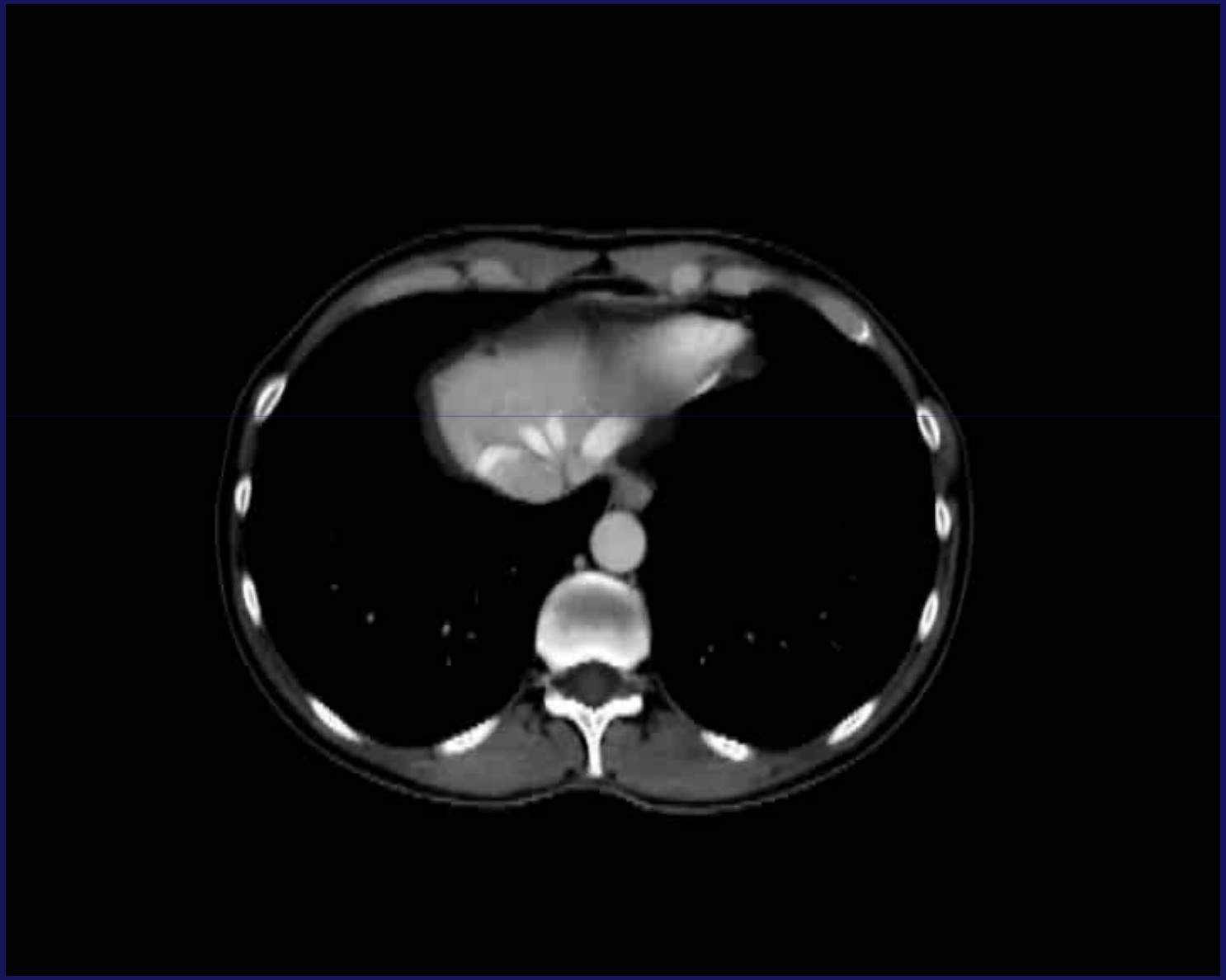


Resection S4b

Resection Sg5-6



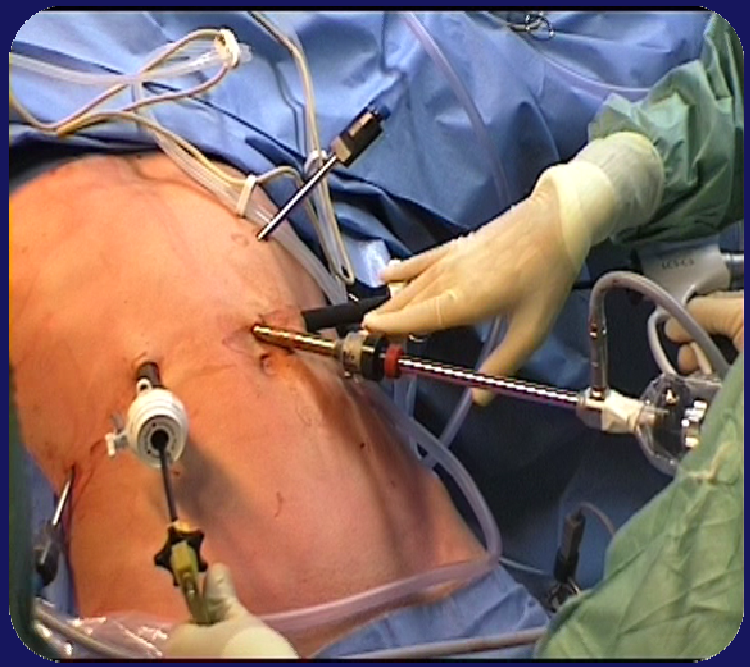
Resection S6



Left Hepatectomy

LUS: Technical Limits

- ✓ Exploration of Sg7 and Sg1
- ✓ Less panoramic view
- ✓ No Contrast Enhancement
- ✓ Adhesions
- ✓ Limited movements



LEARNING CURVE