

7:45 am ◇ REGISTRATION AND WELCOMING OF PARTICIPANTS

8:10 am ◆ THEORETICAL SESSION

Intraoperative ultrasound: the fundamentals

- Open ultrasound
- Laparoscopic ultrasound
- Robotic ultrasound
- Hepatic nodules:
 - How to recognize them
- Contrast-Enhanced Intraoperative Ultrasound (CEIOUS):
 - Principles and applications
- Role of color flow analysis

IOUS in liver surgery: tips and tricks

- IOUS & ICG injection
- Cognitive liver map during open and minimally invasive liver resections
- Compression techniques: from open surgery to ongoing developments in MALS
- IOUS tricks:
 - How to define the surgical area
 - How to check the resection line intraoperatively
 - How to identify an unknown vessel (hooking technique)
 - Post-resection control
- Video session (pre-recorded)
 - How I do it
 - Discussion

1:00 pm ◇ LUNCH AT THE INSTITUTE

2:00 pm ◆ HANDS-ON SESSION ON LIVE TISSUE (MINI-PIGS)

- Technical aspects of ablation devices + US needle insertion with freehand technique
- Percutaneous/Laparoscopic US: probe manipulation
- IOUS (open): vascular anatomy recognition, surgical tips and tricks
- IOUS (laparoscopic): vascular anatomy recognition, surgical tips and tricks

6:00 pm ◇ END OF SESSION

8:00 pm ◇ DINNER IN HONOR OF THE PARTICIPANTS

7:50 am ◇ REGISTRATION AND WELCOMING OF THE PARTICIPANTS

8:00 am ◆ **THEORETICAL SESSION**
 Intraoperative ultrasound-guided liver surgery: classic and new anatomic concepts

- R1 vascular surgery
- How to identify and how to use collateral veins
- Laparoscopic thermoablation:
 - How to center the lesion and how to proceed
- Hilar approach: from Takasaki to MILS
- The transparenchymal approach: from Bologna to Rome

Advance parenchyma-sparing IOUS-guided liver surgery

- Liver tunnel technique
- Mini-meso hepatectomy
- Transversal hepatectomy and the "roller-coaster" technique
- ALPPS and parenchyma sparing liver surgery
- IOUS in case of major hepatectomies and two-stage hepatectomy
- Combined laparoscopic resection and thermoablation: evidence
- Robotic liver resection:
 - On the way to a new standard in liver resections?
- Cluster approach for parenchyma-sparing major hepatectomy

1:00 pm ◇ LUNCH AT THE INSTITUTE

2:00 pm ◆ **HANDS-ON SESSION ON LIVE TISSUE (MINI-PIGS)**

- IOUS-guided laparoscopic liver parenchyma-sparing resection
- IOUS-guided laparoscopic ablation
- IOUS-guided openparenchyma-sparing resection/ablation

6:30 pm ◇ END OF SESSION
 EVENING FREE

7:50 am ◇ EVALUATION OF THE PREVIOUS DAY'S SESSIONS

8:00 am ◆ **THEORETICAL SESSION**
 Innovation and future perspectives

- 3D planning
 - How to do it?
 - Is its use mandatory?
- What surgical robotic systems are available today?
- What robotic systems exist today for tumor ablation?
- What do we still need to learn about liver tumor ablation?
- The future of parenchyma-sparing surgery: will robotic surgery substitute the open advanced approach?
- Robotic and AI in ultrasound
- Computer-assisted surgery.
- Has everything changed again?

12:30 pm ◇ END OF THE COURSE
 DELIVERY OF CERTIFICATES OF ATTENDANCE

1:00 pm ◇ LUNCH-BUFFET AT THE INSTITUTE