LLR and IOUS: a necessity!

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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

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%)

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<thead>
<tr>
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<th>Preop imaging</th>
<th>Lap IOUS</th>
<th>Open IOUS</th>
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<tbody>
<tr>
<td>Sensitivity</td>
<td>77.1%</td>
<td>99.4%</td>
<td>100%</td>
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<tr>
<td>Accuracy</td>
<td>76.2%</td>
<td>93.9%</td>
<td>96.2%</td>
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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

Staging → Surgical Planning → Treatment
Open IOUS role during hepatectomy

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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
Ultrasound-guided laparoscopic liver resections

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

Surg Endosc 2014
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