Laparoscopic Liver Surgery training

International Laparoscopic Liver Surgery
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No potential COI to disclose

• **Unrelated to talk:**
  – *Ethicon Biosurgery: Director for Laparoscopic liver course*
  – *Novartis: Speaker*
Laparoscopic Liver Surgery

Feasibility & Safety
- Can it be done?
- Is it safe?

Is it better than open?
- Clinical equipoise?
- Long term outcomes?
- For cancer?

Should it be done?
- Short term outcomes?
- ERAS vs Lap vs Both?
- Cost!!!! $$$$

Education & Training & Implementation
- How do we teach it
  * Practicing surgeons!
- *Fellows!
Ok... some honest audience participation

- Think of the last graduate you trained....
  - On his/her last day....
- Would you *independently* trust them to do:
  - Lap Left Lat sectionectomy?
  - Lap left liver?
  - Lap Right Liver?
  - Lap segment 6 or 5 or 1 ?
  - Lap segment 4 or 7 or 8 ?
The need for organization of laparoscopic liver resection

Daniel Cherqui · Go Wakabayashi · David A. Geller · Joseph F. Buell · Ho-Seong Han · Olivier Soubrane · Nicholas O’Rourke on behalf of the International Laparoscopic Liver Society

The missions of ILLS are:

• To facilitate diffusion and education of LLR for meaningful improvements in patient care.
• To organize a biannual congress dedicated to LLR. The congress will take place on non-IHPBA years (odd years) so that it does not interfere with this major specialty event.
• To coordinate International Registries.
• To provide a website serving as a forum supporting collaboration between surgeons interested in the advancement of LLR techniques (http://www.ills.global/).
• To help in the education of surgeons wishing to learn these techniques including travel grants.
• ILLS aims at working in collaboration with existing HPB societies.
Training and Education (for practicing surgeons and surgeons in training) remains a challenge.

» **Active Solutions** are Needed:
1) Comprehensive curricula (targeting obstacles)
2) “ILLS Way” needs to be taught to beginners
3) Cognitive task Analysis (for complex tasks)
4) Modular teaching of HPB
5) Feedback regarding quality and safety (couching)
6) self-administered learning curves
Where is the problem?

Practicing Surgeons? Vs Surgeons in Training(fellows)? Vs Both?
Accredited HPB Fellowships; North America

- Cleveland Clinic
- Medical College of Wisconsin
- Mayo Clinic COM
- University of Calgary
- McGill University
- University of Toronto
- Washington University
- MD Anderson Cancer Center
- Dalhousie University
- Oregon Health Science University
- Virginia Mason Medical Center
- Portland Providence
- Carolinas Medical Center
- Methodist Dallas
- University of Pittsburgh Medical Center
- Duke University Medical Center
- Indiana University
- University of Michigan
- Stanford University
- Medical University of South Carolina
Dually Accredited HPB Programs

- Memorial Sloan Kettering Complex General Surgical Oncology Fellowship
- University of Toronto SSO Fellowship
- University of Louisville Complex General Surgical Oncology Fellowship
- Washington University ASTS Fellowship
- University of Toronto ASTS Fellowship
Minimum Case Requirements for Accredited HPB Programs *(started in 2016)*

- 100 Major HPB Cases *(no exceptions)*
  - 25 Major Liver *including* 20 major/hemi-liver resections
  - 25 Major Pancreas *including* 20 PD
  - 15 Major Biliary
- 70 cases as primary surgeon
- 20% of cases *may* be represented by Transplant (in one category)
- Experience in Mesenteric Vein Resections and hepatic hilar dissection
- Experience with ablation, minimally invasive, and ultrasound techniques *required*
HPB fellow Lap Liver autonomy Experience

Minor Hepatic Surgery

- Laparoscopic: 582, First: 46, Primary: 536
- Open: 691, First: 83, Primary: 608
- Robotic: 20, First: 0, Primary: 20

Major Hepatic Surgery

- Laparoscopic: 286, First: 12, Primary: 274
- Open: 30, First: 0, Primary: 30
- Robotic: 1, First: 0, Primary: 1
HPB Fellows Education: Lap HPB?

- Lap Minor Liver ✓
- Lap Major Liver ✗
- Lap Left Pancreas ✓
- Lap pancreas head ✗
- Lap Major biliary ✗
Update on HPB Training in the USA

Currently Three Paths:
» SSO-HPB, Fellowship council-HPB, ASTS-HPB

In 2017:
» HPB (all three) task force for joint standards & assessment
» HPB (all three) retreat for HPB-EPAs (June)
» ABS & ABMS moving forward w/ focused practice designation (May)
The following are obstacles for implementation of a laparoscopic HPB surgical program. *(Rank from 1 (highest) to 6 (lowest))*

<table>
<thead>
<tr>
<th>Overall Rank</th>
<th>Item</th>
<th>Score</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Technical ability</td>
<td>134</td>
</tr>
<tr>
<td>2</td>
<td>Operative Resources</td>
<td>110</td>
</tr>
<tr>
<td>3</td>
<td>High risk of bleeding</td>
<td>95</td>
</tr>
<tr>
<td>4</td>
<td>Hospital Buy-in</td>
<td>83</td>
</tr>
<tr>
<td>5</td>
<td>Chair/Dept Head buy-in</td>
<td>81</td>
</tr>
<tr>
<td>6</td>
<td>Patient referral</td>
<td>61</td>
</tr>
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So.... What does this mean to ILLS

1-Practicing Surgeons... need
2-Surgeons in Training(fellows).
Need
3-Change of Edu landscape for surgery

The Opportunity is huge
Lap Liver Edu: *Obstacles = Opportunities*

- **Team & set up**
- **Patient Related factors**
- **Technical Ability**
- **“buy-in” (dept/partners)**
- **Hospital Resources**
- **Mentoring Mentoring Mentoring**

*Individualized learning Curve*
Psychomotor vs Motor

Psychomotor skills involve both a motor element and a cognitive element\(^1\)

» “A skillfully performed operation is about 75 percent decision-making and 25 percent dexterity”\(^2\)

**Psychomotor skills ≠ Motor skills**

**Surgical care components:**

- ♦ Preop
- ♦ Psychomotor
- ♦ Postop

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<tr>
<th></th>
<th>High</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
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1) Sullivan M E, Residency Assist Page, ACS, Dec 2, 2010
2) Spencer FC, Bull Am Coll Surg 1979. 64 15-22
Learning Domains in surgery

- Affective
- Cognitive
- Psychomotor

Diagram showing interconnections between Affective, Cognitive, and Psychomotor domains.
Psychomotor domain & the current education environment (reality Check)

- OR Time & case load
- Mentorship
- Technology & complexity
- Autonomy

Psychomotor Skills Acquisition
WORK SMARTER, NOT HARDER!
Avoid *Dysteachia*...

» *The results of dysteachia are de-motivated students and high drop out rates.*

One way... “the ILLS way”

» *Safe, simple, reasonable to learn, and works most of the time*
  
  o IIs way for: hilar dissection, hemorrhage control, parenchymal transection
  
  o Create simulation to help with low-fidelity basics of this way
  
  o Preop-checklist: “right liver..√V5 √V8 √RIHV...”
  
  o Intraop-checklist: “prisele ready?”, vascular clamp?
Focused Curricula: (includes obstacles)

» Cognitive, Team building, program building, dept/hospital buy-in (implementation), Safety measure, “simulation”

» AHPBA-SSO-ASTS

Technical /Psychomotor:

» Cognitive Task Analysis (CTA)
  
  o Designed for complex psychomotor task
    (Unravels complex tasks for learner)
  
  o “the 70% Rule”

  o Focuses on the cognitive element (judgment) within the motor tasks
  
  o Ideally ALL multi-media and teaching courses should be with CTA
Lap Liver Edu: *ILLS Opportunities*

**Reliable Modular Multimedia**
- Repeatedly #1 resources for surgeons & fellows (Youtube)
- 160 Lap chole videos assessed, 158 scored poorly in quality for CVS
- SAGES HPB-Taskforce, Websurg, ILLS

- Each module has its own learning curve
- Give autonomy for each module
- One can NOT teach/learn a major lap case in ONE BITE
Couching (life-long learning)
  » Online platforms serve as an ideal solution
  » SAGES-FB based HPB platform lunching this year.
  » SAGES HPB-Taskforce, AHPBA, ACS, ILLS
Summery
Training and Education (for practicing surgeons and surgeons in training) remains a challenge.

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ILLS (partnering with other societies) can offer all these elements.
Thank you

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