



PRO: WHEN IS HALS HELPFUL?

Marco Maria Lirici

***15th International Congress of EAES
Athens, July 4-7, 2007***



RATIONALE BEHIND HALS

Disadvantages of total laparoscopic surgery:

- 1. Loss of direct tactile sensation**
- 2. Hand-eye coordination**
- 3. Instrument changes**
- 4. Conversion rate in complex intra abdominal procedures.**

When a minilaparotomy is requested for specimen removal



ADVANTAGES OF HALS?

- **RESTORED TACTILE FEEDBACK**
- **PRESERVING MAIN IDEA OF MINIMAL ACCESS SURGERY (MAS)**
- **REDUCED CONVERSION RATE IN TOTAL LAPAROSCOPY**
- **ENHANCED SAFETY AND EFFICIENCY ALLOWING THE COMPLETION OF THE OPERATION WITH A HAND INSIDE**
- **MAINTAINANCE OF INTRA-ABDOMINAL PRESSURE AND LAPAROSCOPIC VIEW AND MAGNIFICATION**
- **IMPROVING THE STEEP LEARNING CURVE FOR INEXPERIENCED SURGEONS**
- **REDUCED COST-BENEFIT RATIO ?**



INDICATIONS

LIVER SURGERY

Ann Surg. 2003 November; 238(5): 674–679.

Hand-Assisted Laparoscopic Hepatectomy for Solid Tumor in the Posterior Portion of the Right Lobe. Initial Experience

Ming-te Huang, MD, Wei-jei Lee, MD, PhD, Weu Wang, MD, Po-li Wei, MD, and Robert J. Chen, MD, MPH



INDICATIONS

UROLOGY

J Endourol. 2006 Nov;20(11):891-4

**Conventional and hand-assisted laparoscopic radical nephrectomy:
Comparative analysis of 271 cases**

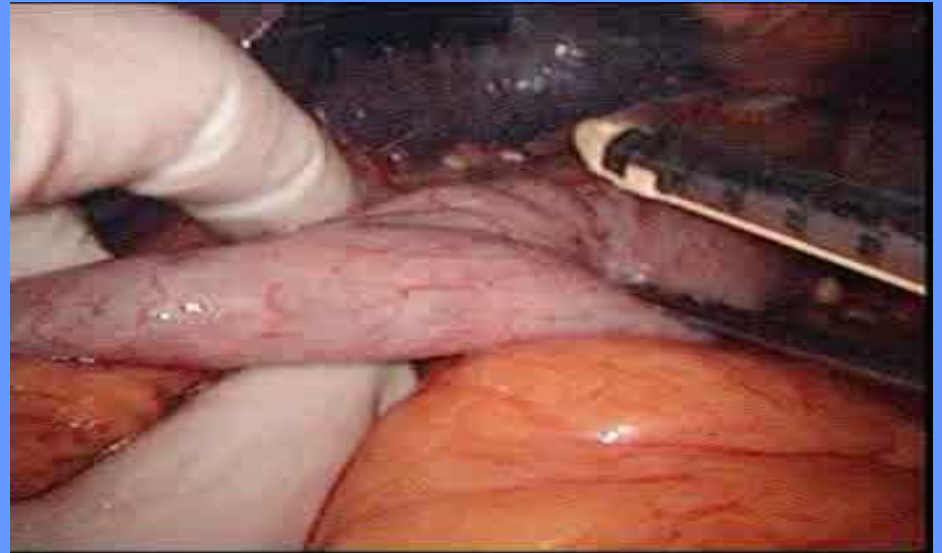
Matin SF, Dhanani N, Acosta M, Wood CG

Transplantation. 2007 Jan 15;83(1):41-7

**Comparison of laparoscopic versus hand-assisted live donor nephrectomy.
Kokkinos C, Nanidis T, Antcliffe D, Darzi AW, Tekkis P, Papalois V**

INDICATIONS

GASTRIC SURGERY



J Am Coll Surg. 2004 Sep;199(3):436

Hand-assisted laparoscopic gastrectomy for cancer: the next last frontier.

J.G. Hunter



MAIN INDICATIONS

•RADICAL NEPHRECTOMY	+++++
•LIVE DONNOR NEPHRECTOMY	+++++
•SUBTOTAL AND TOTAL GASTRECTOMY	+++
•SPLENECTOMY IN MASSIVE SPLEEN	++
•HEPATECTOMIES	++
•PANCREATIC RESECTIONS	+
•COLORECTAL RESECTIONS	+++++

Frequency of articles in the indexed literature
Search term: hand assisted laparoscopic surgery



LIMITS OF HALS?

- 1. FATIGUE**
- 2. ERGONOMIC RESTRICTIONS DUE TO THE CROWDNESS OF THE HAND WITH THE INSTRUMENTS**
- 3. NOT WELL ACCEPTED BY PATIENTS AND SURGEONS SINCE A MINILAPAROTOMY IS NEEDED**
- 4. COSMETICALLY INFERIOR THAN TOTAL LAPAROSCOPIC SURGERY**



PRO: WHEN IS HALS HELPFUL?

A CHALLENGE

1. OPTIMAL DEVICE
2. DEDICATED INSTRUMENTS
3. ACTIVE HAND?
4. HIGH SKILL DEMANDING TASKS?

KEY ISSUE 1
GEOGRAPHY OF THE
ACCESS PORTS

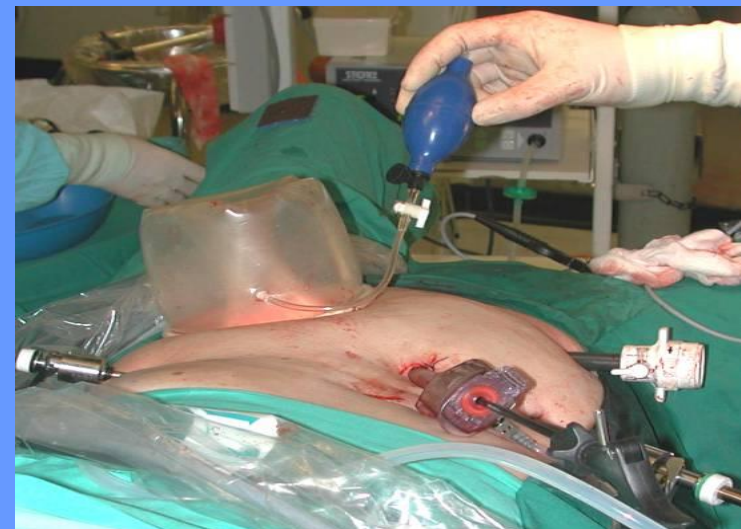
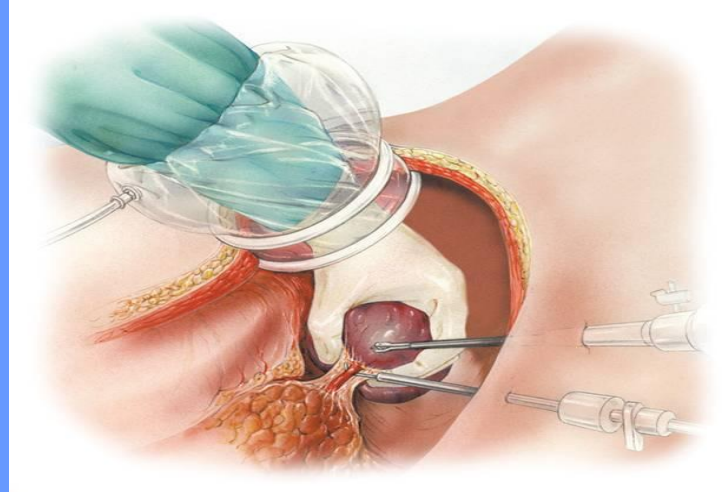
POSITION OF THE MINILAPAROTOMY

OTHER LAP INCISIONS
VISUAL IMPAIRMENT

KEY ISSUE 2
HOW TO SPEED UP WHILE
KEEPING THE PROCEDURE SAFE AND
ONCOLOGICALLY CORRECT
NON TOUCHING TECHNIQUE STILL POSSIBLE?

IF THE HAND IS NEEDED OUTSIDE?

MAJOR QUESTS



TASK: PALPATION

**better definition
of tumor location**





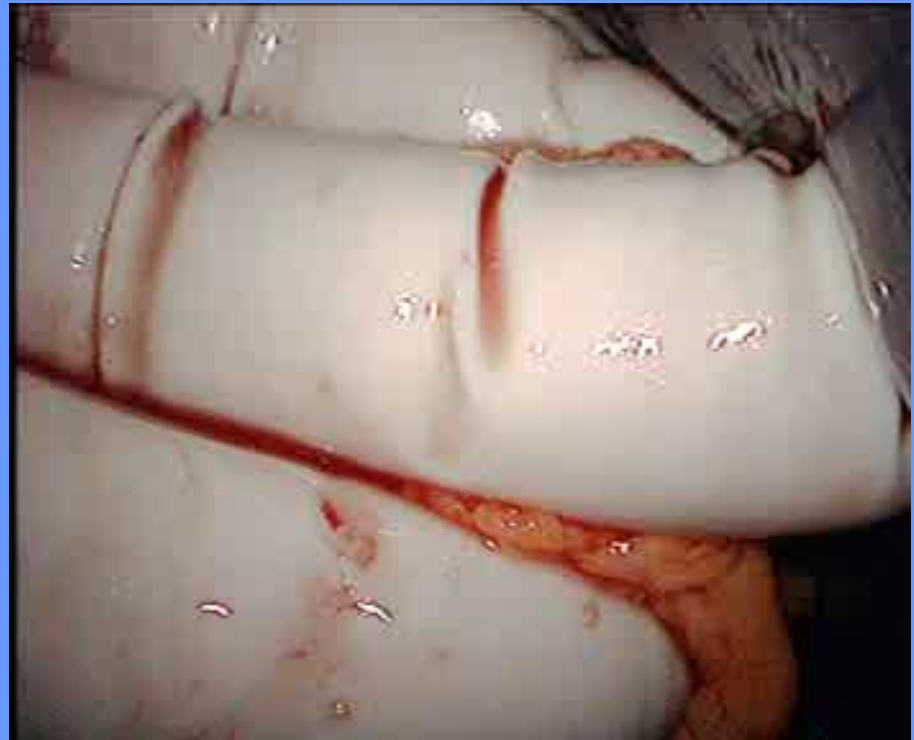
PRO: WHEN IS HALS HELPFUL?

TASK: TROCAR INSERTION IN RESTRICTED SPACE

shield action



higher safety with
the introduced hand



SPLENECTOMY IN MASSIVE SPLENOMEGALY

steps



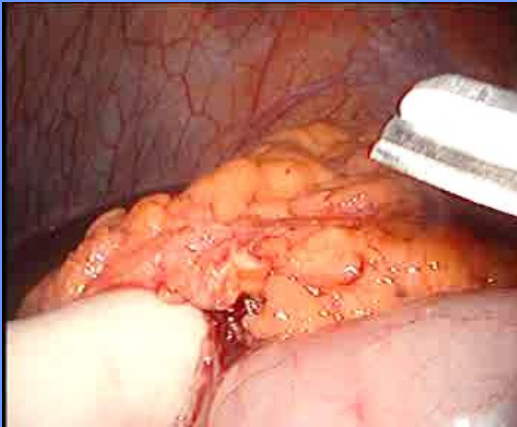
splenic artery
division

specimen
withdrawal

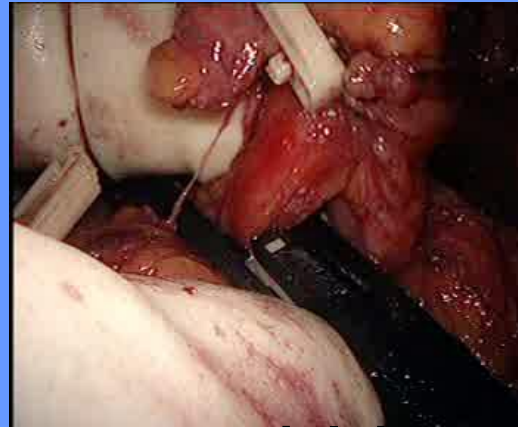


TOTAL AND SUBTOTAL GASTRECTOMY

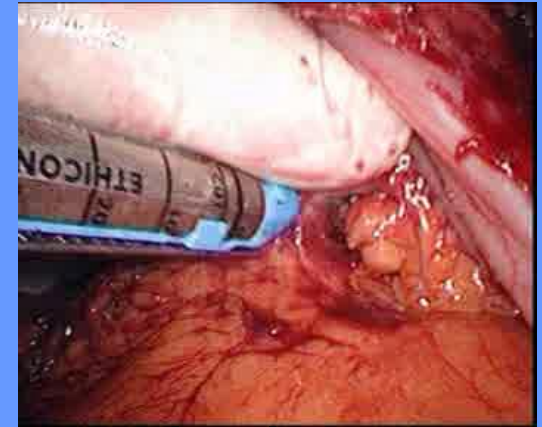
steps



greater omentum



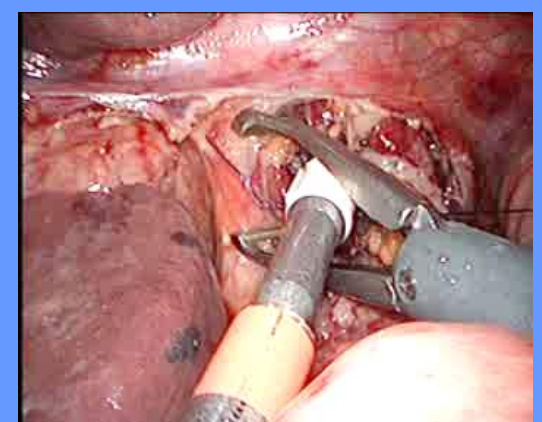
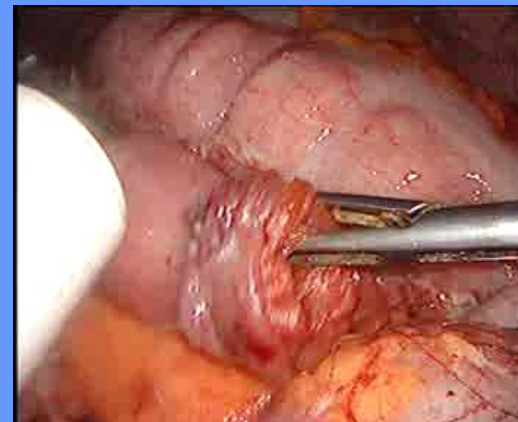
gastroepiploic a.



duodenum



jejunum



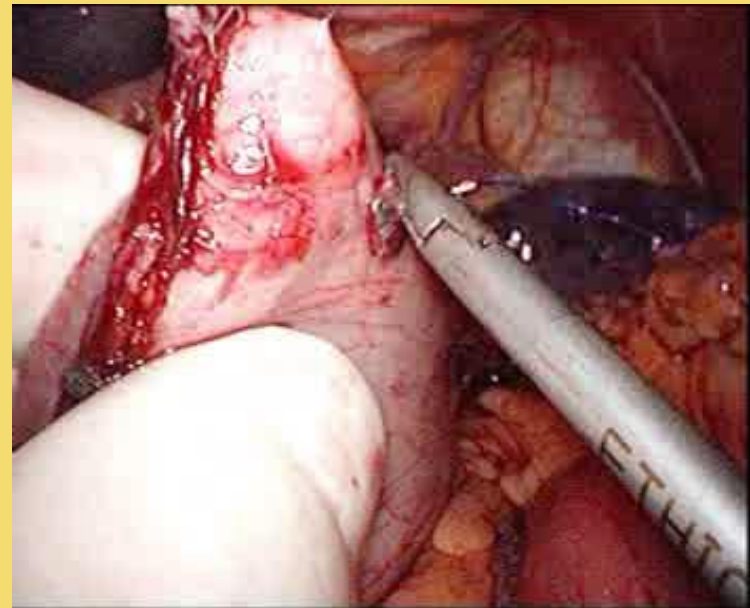
anastomosis

↑ benefits - accuracy

↓ risks

LAPAROSCOPIC SUTURING

A REAL ADVANTAGE IN INTERRUPTED SUTURES?





CONCLUSIONS

1. **HALS is an options not a phylosophy**
2. **Be open minded: feel free and be ready to switch from a hand-assisted approach to a total laparoscopic approach and the opposite whenever is requested**
3. **A learning curve does exist to use properly a hand assisted device and choose its correct location: learn from more experienced surgeons**