

GALLSTONES AND SPA: TECHNIQUE AND FUTURE PERSPECTIVES

M.M. Lirici

Mini-invasive surgery:

What's new?

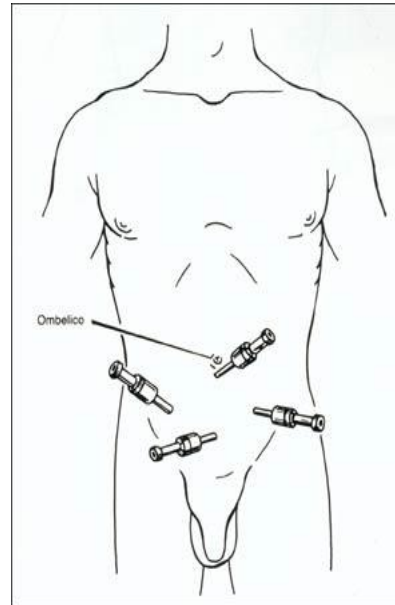
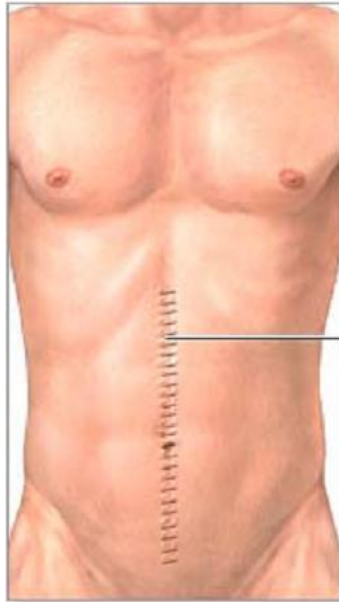
2nd edition

Napoli, 11-13 marzo 2010

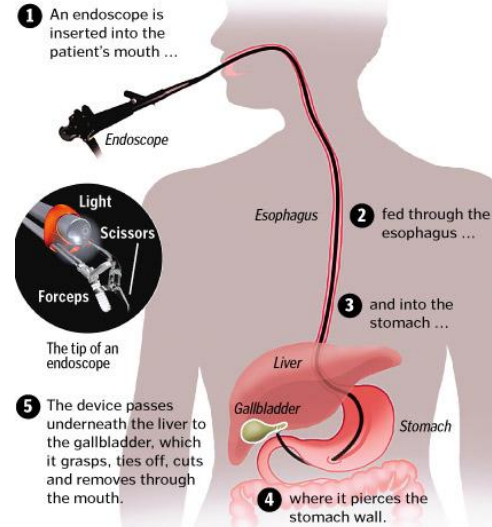
HAS THE FUTURE FOR A NEW GOLD STANDARD COME?



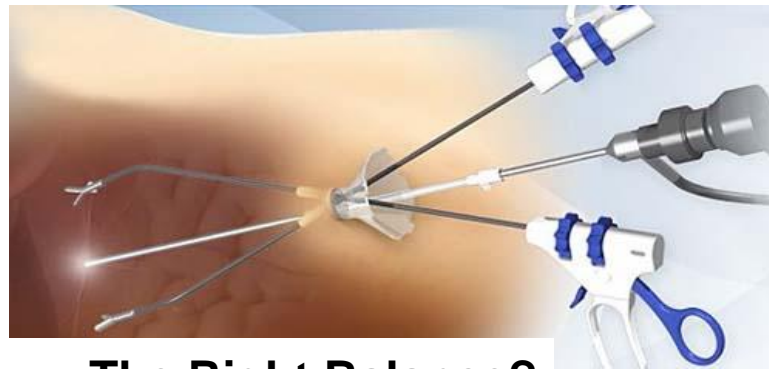
SCAR



Gallbladder removal through the mouth



SCARLESS



The Right Balance?

The road-map of minimal invasiveness in surgery

Nomenclature of Natural Orifice Transluminal Endoscopic Surgery (NOTES™) and Laparoendoscopic Single-Site Surgery (LESS) Procedures in Urology

Geoffrey Box, M.D.,¹ Timothy Averch, M.D.,² Jeffrey Cadeddu, M.D.,³ Edward Cherullo, M.D.,⁴ Ralph Clayman, M.D.,¹ Mihir Desai, M.D.,⁵ Igor Frank, M.D.,⁶ Matthew Gettman, M.D.,⁷ Inderbir Gill, M.D.,⁵ Mantu Gupta, M.D.,⁷ Georges-Pascal Haber, M.D.,⁵ Jihad Kaouk, M.D.,⁵ Jaime Landman, M.D.,⁷ Esteavao Lima, M.D.,⁸ Lee Ponsky, M.D.,⁴ Abhay Rane, M.D.,⁹ Mark Sawyer, M.D.,⁴ and Mitchell Humphreys, M.D.¹⁰ for the Urologic NOTES Working Group

Abstract

Introduction: The twenty first century has witnessed some amazing advancements in surgery. In urology minimally invasive surgery has become the standard treatment for many disease processes and procedures. One of the newest innovations into this field has been the development of Natural Orifice Transluminal Endoscopic Surgery (NOTES™) and Laparoendoscopic Single-site Surgery (LESS). While the practice and application of these new techniques are in their infancy, there has been a great deal of confusion regarding the nomenclature and terminology associated with these procedures. The aim of this publication is to attempt to define the many issues associated with the standardization of terminology for these procedures in order to promote effective scientific progress and communication.

Materials and Methods: A literature search using Medline and pubmed focusing on all terminology to describe NOTES™ and LESS from 1990 to 2008 was done. In addition, various acronyms were searched using four separate online acronym databases. The information was recorded by number of citations and by the number of citations specific to the urologic literature. Based on common usage, definitions and criteria were developed to describe these procedures for current scientific publication. These terms were then collectively reviewed and agreed upon by the Urologic NOTES™ Working Group as a platform for consensus to begin the arduous process of standardization.

Results: There is wide variation in the terminology and use of acronyms for natural orifice transluminal endoscopic surgery and laparo-endoscopic single-site surgery. The keyword literature search uncovered 8710 citations from MEDLINE and pubmed, with 363 citations specific to urology. There was significant overlap in the search of different terms. The search of established abbreviation and acronym databases revealed many citations, but relatively few specific to urology.

THERE IS STILL CONFUSION ON
 CORRECT DEFINITION:

NOTUS
 SPA
 LESS
 SILS
 SINGLE ACCESS/SITE SURGERY
 ONE PORT SURGERY
 SATES - SINGLE ACCESS TRANS-
 UMBELICAL ENDOSCOPIC SURGERY

¹University of California Irvine, California.

²University of Pittsburgh Medical Center, Pennsylvania.

³University of Texas Southwestern Medical Center, Dallas, Texas.

⁴Case Western Reserve University, Cleveland, Ohio.

⁵Cleveland Clinic, Cleveland, Ohio.

⁶Mayo Clinic, Department of Urology, Rochester, Minnesota.

⁷Columbia University Medical Center, New York, New York.

⁸University of Minho, school of Health Science, Braga, Portugal.

⁹East Surrey Hospital, Redhill, United Kingdom.

¹⁰Mayo Clinic, Department of Urology, Phoenix, Arizona.

LESS White Paper

28 urologists and surgeons met at Cleveland Clinic and define the principles of Laparo-endoscopic Single-site Surgery and found the LESSCAR Consortium for assessment and research on LESS – July 2008 Consensus Conference – Gill et al.

Cleveland Clinic selects Laparoendoscopic Single-Site Surgery (LESS) as One of the Top Ten Innovations of 2009

SINGLE PORT ACCESS SURGERY/LESS

FIRST EVER THERAPEUTIC PROCEDURES:

- KURT SEMM 1972-1982 - LAPAROSCOPIC ANNEXAL SURGERY THROUGH A SINGLE-PUNCTURE OPERATING LAPAROSCOPE
- NAVARRA G. 1997 – ONE-WOUND LAPAROSCOPIC CHOLECYSTECTOMY. BR J SURG 84:695

PRESENT TIME:

- JAPANESE SOCIETY FOR SINGLE ACCESS LAPAROSCOPIC SURGERY – 2009
- 1ST NATIONAL CONFERENCE – FEBRUARY 2010

SINGLE PORT ACCESS SURGERY/LESS

BENEFITS

- **COSMETICS**
- **LESS PAIN?**
- **NATURAL APPROACH**
- **PROMPTER RECOVER?**
- **EASY CONVERSION**
- **ORGANS OR VISCERA OTHER THAN THAT TO BE OPERATED NOT INVOLVED**
- **QUALITY OF LIFE**

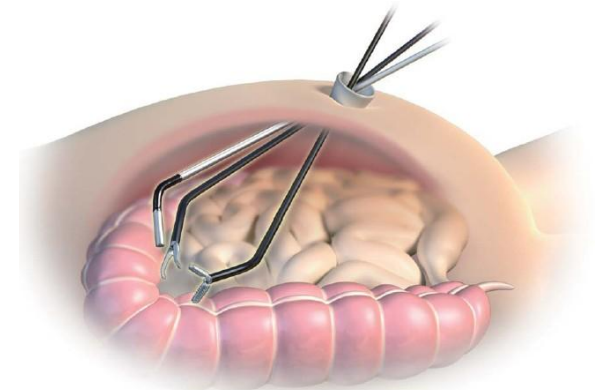
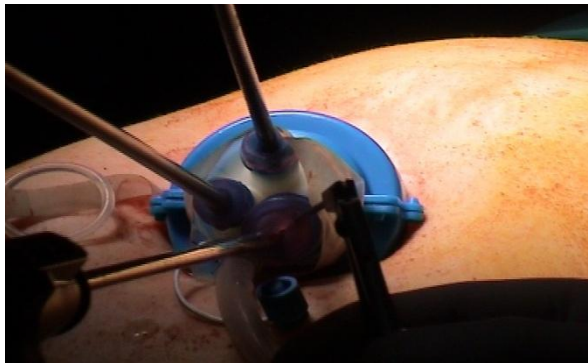
SINGLE PORT ACCESS SURGERY/LESS

DRAWBACKS

- **PHYSICAL CONSTRAINS**
- **LACK IN DEDICATED AND EFFECTIVE TECHNOLOGY**
- **OP TIME?**
- **OP COSTS?**
- **POSTOPERATIVE PAIN?**

SINGLE PORT ACCESS SURGERY/LESS

TECHNOLOGIES

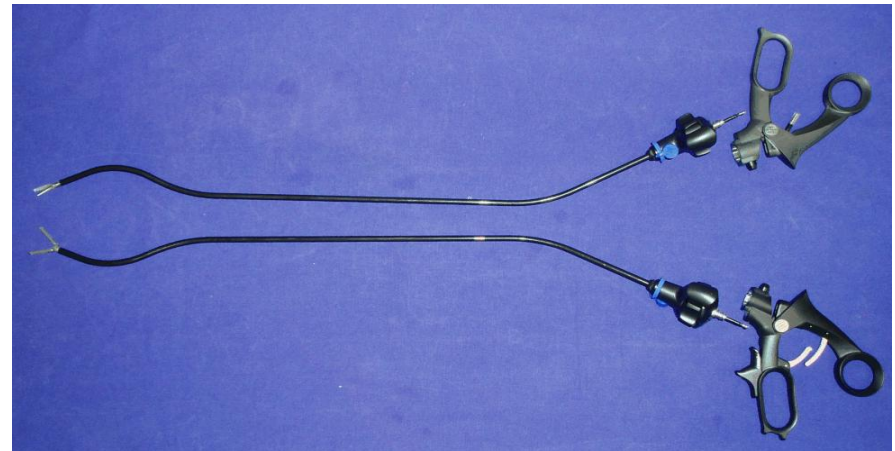


SPECIALLY DESIGNED DEVICE:

Tri-port – Olympus

**TWO 5 mm ACCESS PORTS
ONE 10-12 mm ACCESS PORT
TWO CO2 INFLATION/DESUFLATION PORTS**

**30° 5 mm ARTICULATING, SPECIALLY
DESIGNED LAPAROSCOPE
US DISSECTOR
5mm/3mm STANDARD GRASPERS
5 mm SPECIALLY DESIGNED CURVED, S-
SHAPED INSTRUMENTS**



LESS CHOLECYSTECTOMY

THE ACCESS



SINGLE PORT ACCESS SURGERY/LESS

TECHNIQUE

LESS cholecystectomy is performed both by a fundus first approach or a standard Strasberg critical approach, with ultrasonic dissection or HF dissection.

Cystic artery may be simply coagulated/divided.

In any case the cystic duct is divided between clips or US scissor and further secured by absorbable clip application.

The gallbladder is retrieved with an endobag or through the Tri-port sleeve.

LESS CHOLECYSTECTOMY

TOP DOWN DISSECTION



GENERAL & THORACIC SURGERY BMM HOSPITAL – REGGIO CALABRIA

THE FIGURES

Cholecystectomy	42
Appendectomy	11
Sleeve gastrectomy	3
Annexectomy	3
Colonic procedures	2
Diagnostic laparoscopy	3
Wedge resection liver	1
Overall procedures	65



SINGLE PORT ACCESS SURGERY/LESS

LIRICI – CORCIONE 2009

PILOT TRIAL (2 CENTRES THAT WILL BE JOINED BY FURTHER 3 IN THE PHASE 3 RCT)

40 PATIENTS WITH BMI ≤ 30 , ASA I-III :

20 STANDARD LAPAROSCOPIC CHOLECYSTECTOMY

20 LESS CHOLECYSTECTOMY

PRIMARY ENDPOINTS:

QoL (POSTOP PAIN, LoS, COSMETICS, SF36)

SECONDARY ENDPOINTS:

OP TIME, CONVERSION RATE, DIFFICULTY OF DISSECTION AND EXPOSURE

DIFFICULTY GRADE EVALUATED ACCORDING TO THE NASSAR SCALE

STATISTICAL ANALYSIS: MANN-WHITNEY U TEST, CHI SQUARE TEST, SIGNIFICANT $p \leq 0.05$, SOFTWARE XL STAT

THE EVIDENCE

RCTs

SINGLE PORT ACCESS SURGERY/LESS

RESULTS PRIMARY ENDPOINTS

	LC	LESS	p
PO PAIN VAS I	3.15	3.80	0.041
COSMETICS VAS II	8.6	9.45	0.025
INCISION	14.31	18.8	0.002

RESULTS SECONDARY ENDPOINTS

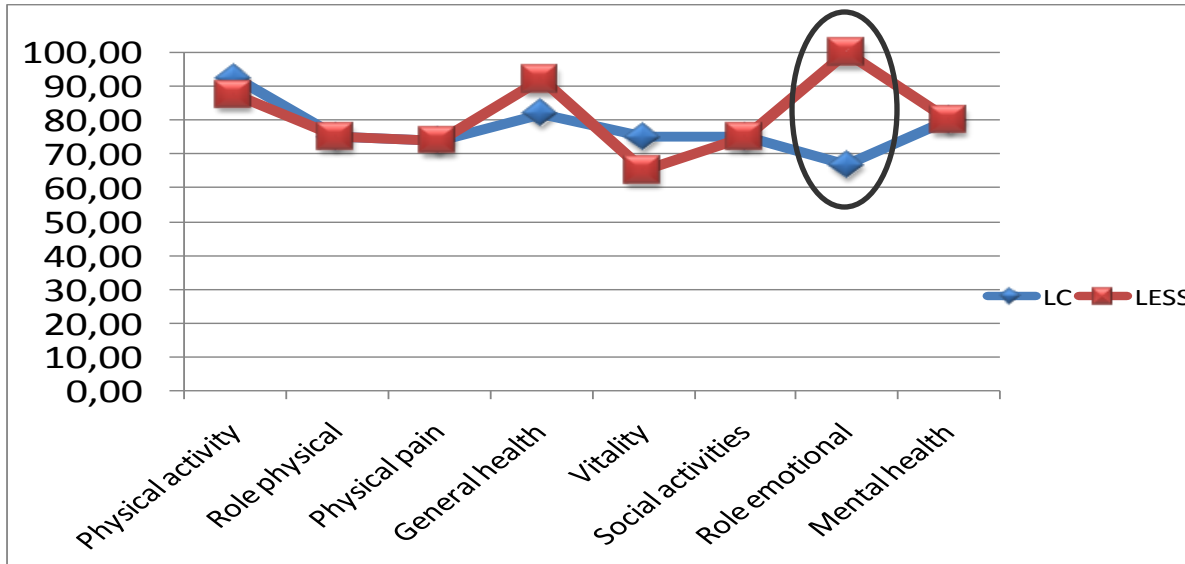
	LC	LESS	p
OT	48.25	76.75	<0.0001
DIFF. EXPOSURE	1.5	2.2	0.004

RCTS

SINGLE PORT ACCESS SURGERY/LESS

RESULTS

SF-36 Mean

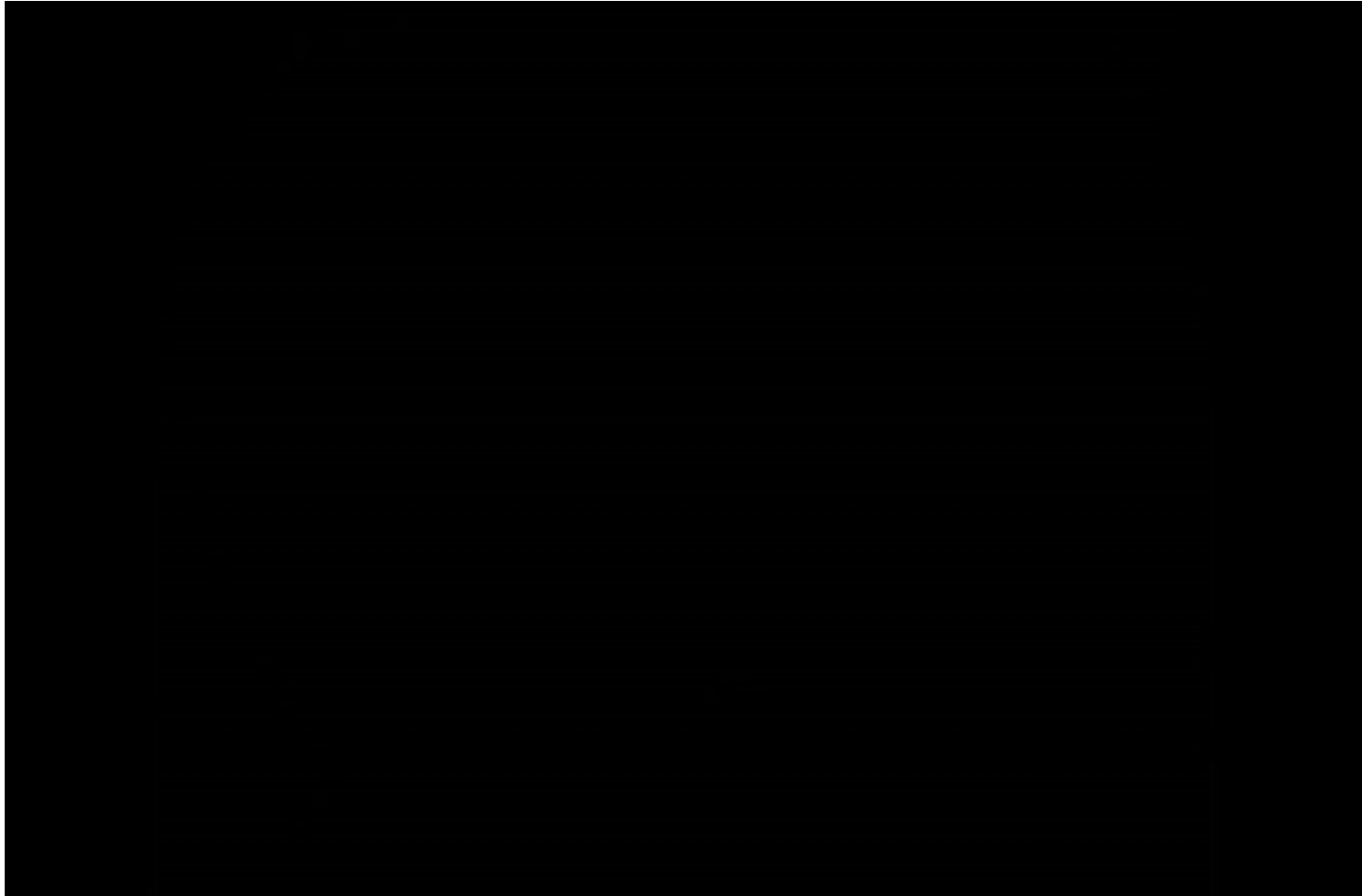


	LC	LESS	p
QoL SF36 ROLE EMOTIONAL	68.33	100.00	<0.0001

Extent to which emotional problems interfere with work or other daily activities, including decreased time spent on activities, accomplishing less, and not working as carefully as usual.

SINGLE PORT ACCESS SURGERY – POP (Plus One Puncture)

FUTURE PERSPECTIVES



COURTESY E. KANEHIRA

MULTITASK PLATFORM: MECHANICAL



TransEnterix SPIDER
(single port instrument delivery
extended reach)

FUTURE: ROBOTIC PLATFORMS → DA VINCI

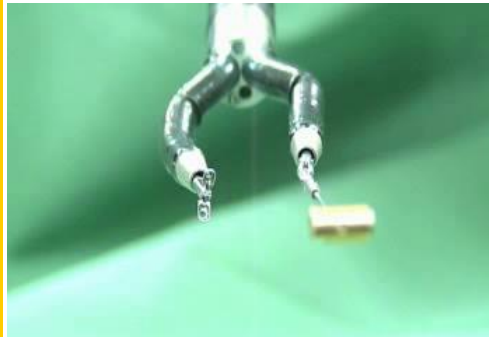
CONCLUSIONS

FEASIBILITY

LESS chole has been shown to be feasible and safe. Cosmetics is improved. The procedure is perceived by patients as a less invasive operation. At present, the most suitable cases are those assessed as difficulty grade I, II cases, according to the Nassar scale. POP approach will expand indications.

IMPLEMENTATION

Specific equipment is still needed. New technology will allow LESS to expand, increasing safety, speeding procedures, making surgeons perform even difficult cases



ETHICAL ISSUES

No injuries of an organ or viscus other than that to be operated. No 0 tolerance of complications as for closure of the transgastric approach. In the case of technical problems, adding one port has no impact on the management of patients and diseases (POP approach)

FUTURE EVENTS IN THE LESS FIELD IN ITALY

**INTERNATIONAL
WORKSHOP**

THE TRIPLE-S SYMPOSIUM

**SINGLE SITE SURGERY
SYMPOSIUM**

**PRESIDENTS:
MM LIRICI, F CORCIONE**

ROME

NOVEMBER 5-6, 2010