

TIPOLOGIA E CARATTERISTICHE DEI PORT

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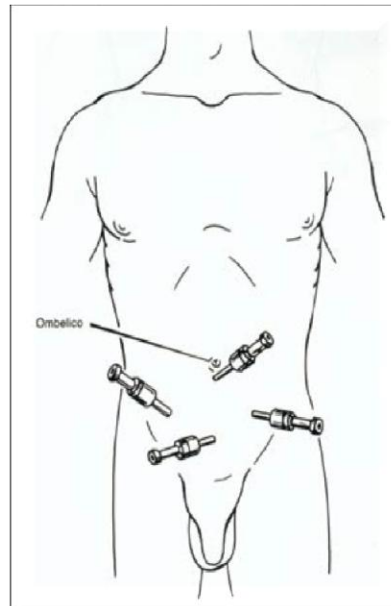
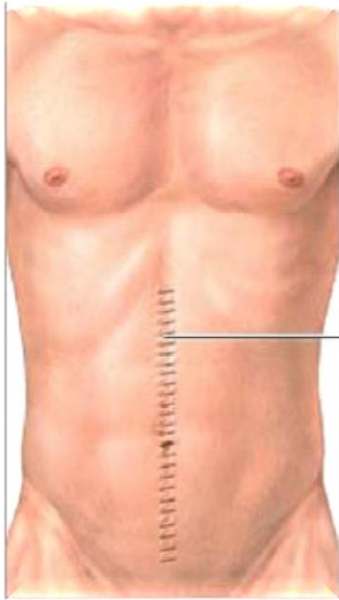
INTERNATIONAL CONGRESS
**Mini-invasive
surgery**
3rd edition
Walking into new technologies
what's new?
Laparoscopic Surgery based on
Evidence versus Daily Practice:
a conflict?
Expo Napoli "Palazzo dei Congressi"
Stazione Marittima - Napoli Porto

NAPOLI
22-23-24
marzo
2012

One Port: Help or Hype?

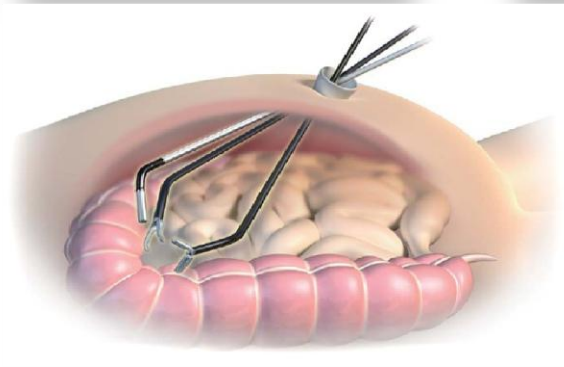
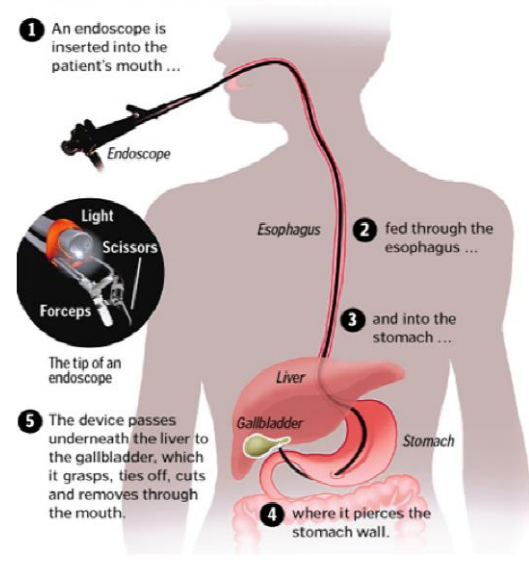
ROADMAP OF MINIMAL INVASIVENESS IN SURGERY

SCAR



Gallbladder removal through the mouth

- 1 An endoscope is inserted into the patient's mouth ...
- 2 fed through the esophagus ...
- 3 and into the stomach ...
- 4 where it pierces the stomach wall.
- 5 The device passes underneath the liver to the gallbladder, which it grasps, ties off, cuts and removes through the mouth.



SCARLESS

The Right Balance?

INDICATIONS

High Volume Procedures	Intermediate Volume Procedures	Low Volume Procedures
cholecystectomy	adrenalectomy	Major bariatric procedures
appendectomy	splenectomy	myomectomy
inguinal hernia repair	hysterectomy	prostate resection
oophorectomy	pelvic organ prolapse	cystectomy
salpingectomy	donor nephrectomy	partial nephrectomy
endometriosis surgery	ureteral re-implant	retroperitoneal lymph
tubal ligation	ileal interposition	node dissection
pyeloplasty	radical nephrectomy	esophageal myotomy
incisional hernia repair	small bowel resection	distal pancreatectomy
renal cyst decortication	fundoplication	formal liver resections
ablative renal surgery	wedge liver resection	gastric resections
pelvic lymphadenectomy		
nephrectomy		
gastric banding		
colon resection		

SINGLE PORT VERSUS REDUCED PORT

PERSONAL RECORD 2008-2011

Cholecystectomy	60
Appendectomy	18
Sleeve gastrectomy	18/6
Annexectomy	4
Colonic procedures	4
Diagnostic laparoscopy	7
Wedge resection liver	1
Inguinal hernia repair	1



TECNOLOGIES

WORKING ENVIRONMENT
ERGONOMICS
ACCESS
INSTRUMENTS
VISION
PLATFORMS
ROBOTICS



WORKING ENVIRONMENT & ERGONOMICS

ONE PORT LAPAROSCOPY: THE LIMITS

- **PHYSICAL CONSTRAINTS**
- **REDUCED DEGREES OF FREEDOM OF THE WORKING INSTRUMENTS**
- **LACK OF TRIANGULATION, POOR TRACTION**

**INSUFFICIENT EXPOSURE
IMPAIREMENT OF ADVANCED SURGICAL TASKS
MENTAL, VISUAL, PHYSICAL FATIGUE**

HIGH SKILL DEMANDING?

ACCESS TECHNOLOGIES AND TECHNIQUES



**DISPOSABLE OR REUSABLE
MULTIPORT ACCESS DEVICES**



**ALTERNATIVE:
SWISS CHEESE TECHNIQUE**



ACCESS DEVICES CLASSIFICATION

ACCESS TECHNOLOGY

GEL
MULTIPLE CHANNELS

Gelpoint (Applied Medical)
Xcone, Endocone (Karl Storz),
Triport, Quadport (Olympus),
OCTO-port (Dalim surgnet)
SILS (Covidien), Airseal
(Surgiquest)



STRUCTURAL ACCESS

RETRACTING TECHNOLOGY

SLEEVE

Gelpoint (Applied Medical),
Triport, Quadport (Olympus),
OCTO-port (Dalim surgnet)
X-Gate



SOFT STRUCTURAL RETRACTION
RIGID STRUCTURAL RETRACTION

SILS (Covidien)
Xcone, Endocone (Karl Storz),
Airseal (Surgiquest)



SINGLE INCISION MULTIPLE FASCIA PUNCTURES

TROCAR TECHNOLOGY

LOW PROFILE TROCARS

STANDARD CANNULAS

Dexide ports (Covidien)
AnchorPort (Surgiquest)
Hunt trocars (Applied Medical)

5 mm cannulas



SINGLE PORT SITE

SKIN INCISION 15-35 mm

NAVEL

Most procedures

Either **transumbilical** or **over/below the umbilicus**



RIGHT, LEFT FLANK

Incisional Hernia repair,
Colonic resections

MIDLINE MESOGASTRIUM-EPIGASTRIUM

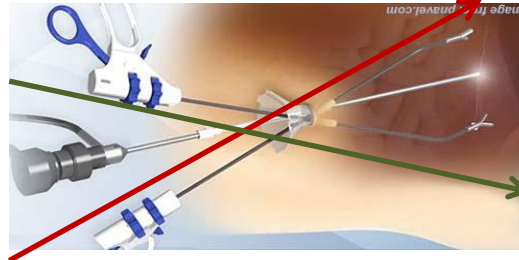
Bariatric surgery



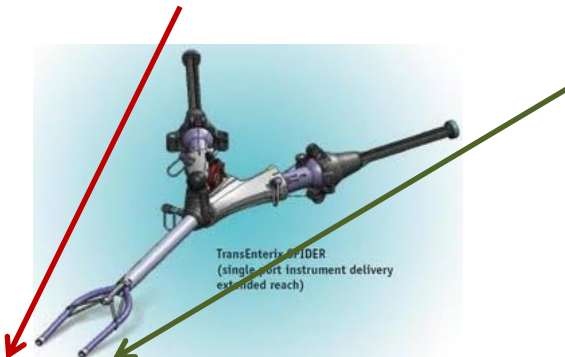
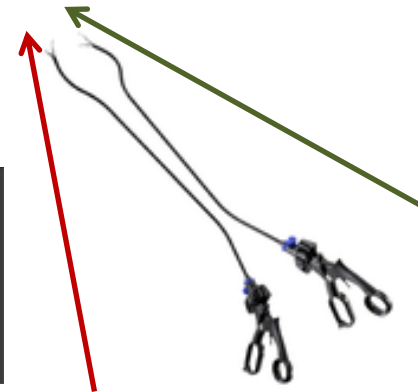
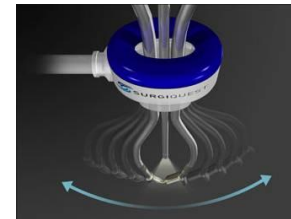
REDUCED SPACE

Working through a single access

STRAIGHT INSTRUMENTS
PARALLEL DIRECTION
FENCING EFFECT
CROSSING THE SHAFTS
RIGHT HAND ON THE LEFT
LEFT HAND ON THE RIGHT



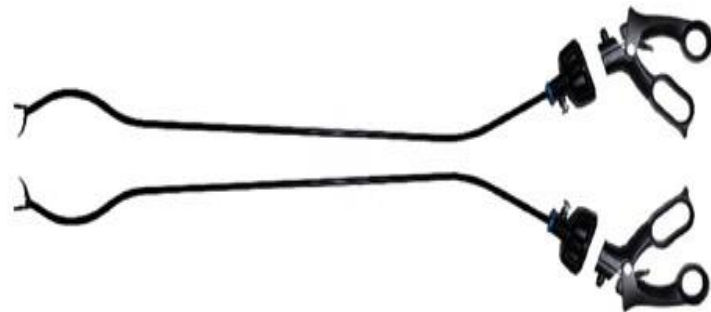
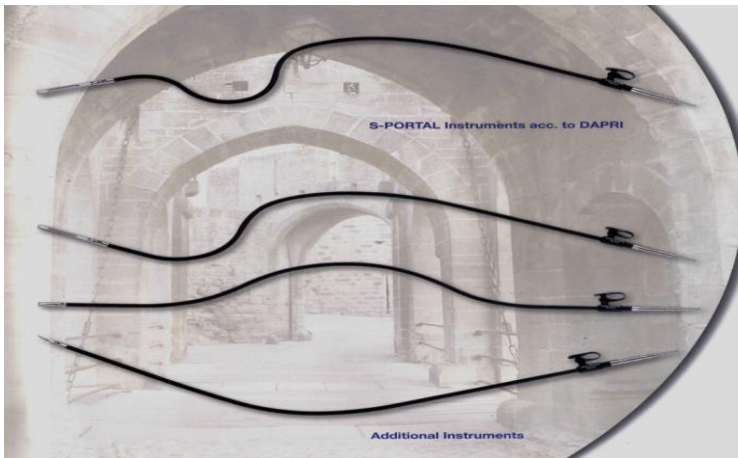
PRESHAPED CURVED INSTRUMENTS
REPRODUCE OPEN SURGERY
TRIANGULATION



PLATFORMS/ROBOTICS
REPRODUCE OPEN SURGERY
ENVIRONMENT

POSSIBLE SOLUTIONS

INSTRUMENTS



**STRAIGHT, CURVED,
ARTICULATED**

**SUPERELASTIC ALLOY
INTERNAL GRAB**

POSSIBLE SOLUTIONS

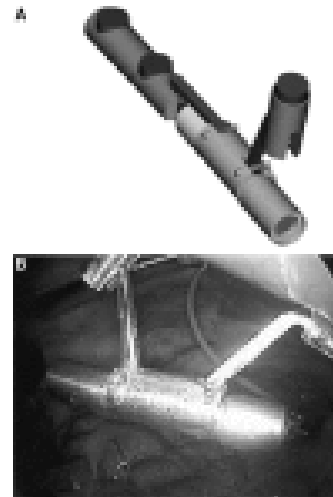
VISION

PRESENT



**ARTICULATED, CHIP-ON-TIP 5
mm SCOPES**

FUTURE



Courtesy of
JF Cadeddu - Ann Surg 2007



Courtesy of
P Swain - Surg Endosc 2010

**EXTERNAL MAGNET CONTROL
MICROCAMERAS**

POSSIBLE SOLUTIONS

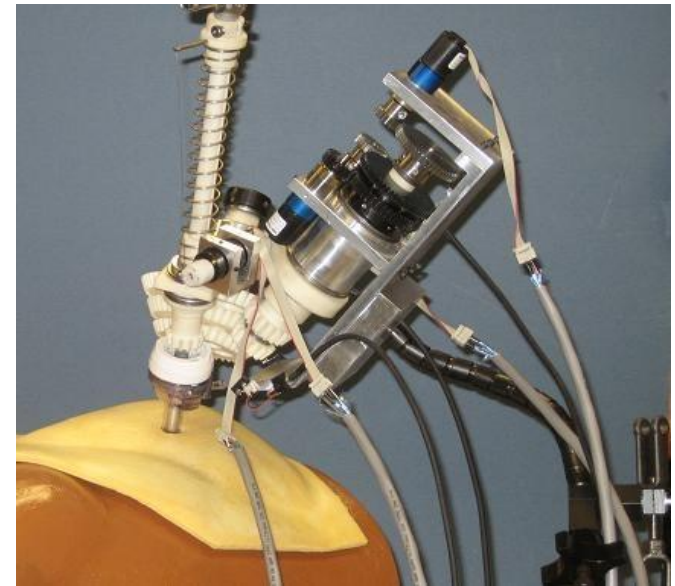
PLATFORMS & ROBOTICS



**SPIDER
TRANSENERIC**



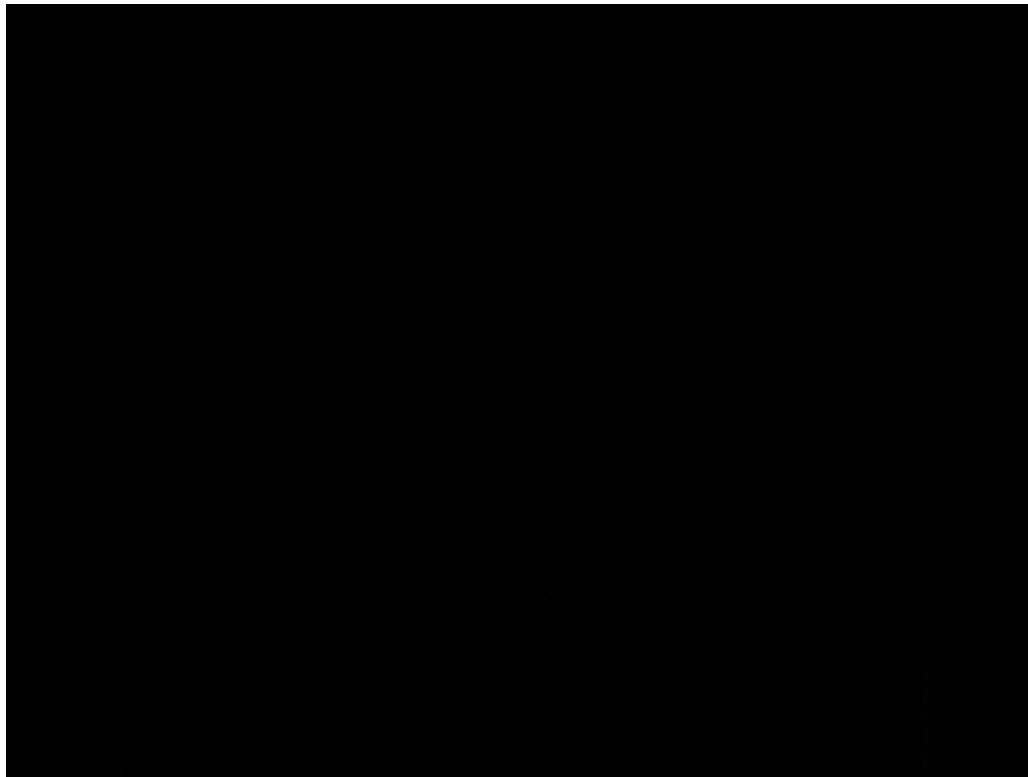
da Vinci^{Si} HC¹
SURGICAL SYSTEM
**MODULE FOR
SINGLE SITE SURGERY**



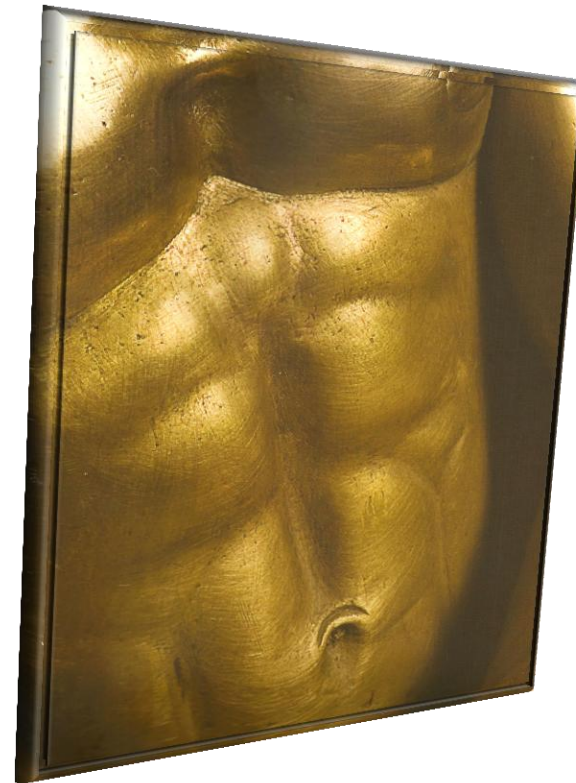
**COURTESY
D. OLEINIKOV
UNIVERSITY OF NEBRASKA**

POSSIBLE SOLUTIONS

**REDUCED PORT SURGERY
POP – PLUS ONE PUNCTURE**



TAKE HOME MESSAGE IMPROVEMENT OF QoL AND COSMESIS



**THE QUEST:
DOES THEY WORTH?**

CONCLUSIONS

BENEFITS

Single Port
Laparoscopy:
Cosmetics
Postoperative
pain?
Quality of Life
Prompter
recover?
Easy
conversion

DRAWBACKS

Ergonomics
Fatigue
Safety?
OP time
OP costs
Postoperative
pain?

EVIDENCE

No evidence
But the need
for larger
RCTs and
methanalyses
and further
technology
development

TREND

Reduced Port
Surgery
Hybrid
Procedures