



Azienda Ospedaliero Universitaria Pisana  
Dipartimento di Gastroenterologia  
e Malattie Infettive  
U.O. Chirurgia Generale  
Direttore: Dott. Piero Buccianti



Collaborazione:

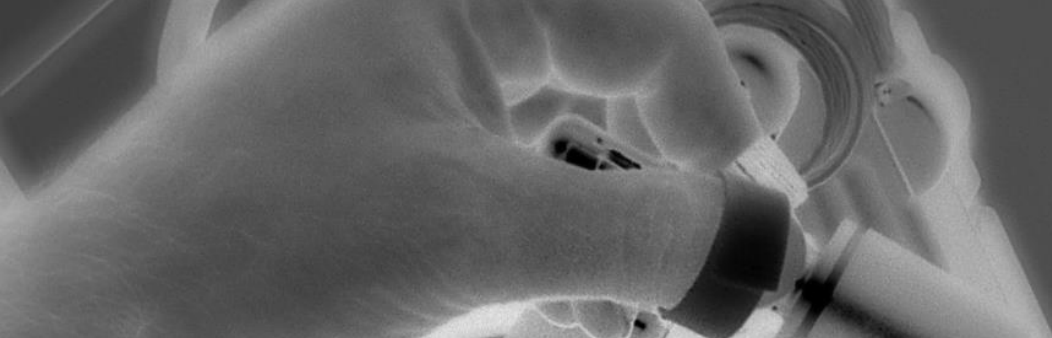


6° Edizione del Corso  
**CHIRURGIA LAPAROSCOPICA  
DELLA PARETE ADDOMINALE**

7-8-9 OTTOBRE • PISA

*Johnson & Johnson*

**MEDICAL S.P.A.**



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## **Chirurgia laparoscopica della parete addominale**

**Pisa 7-8-9 Ottobre 2014**

# **UPDATE ON INGUINAL HERNIA VLS:EBM**

**LUCA FELICIONI MD**

**General Surgery Dept.**  
**“Misericordia” Hospital – Grosseto, Italy**  
**Minimally Invasive Surgery Unit**  
**DIRECTOR P.BIANCHI MD**



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## **CONCLUSIONS**

### **Inguinal hernia surgery in Scotland and measured compliance with British Hernia Society Guidelines (2013)**

- Laparoscopic repair was used in 33%**
- Open repair was used in 67%**
- Guideline compliance for elective bilateral hernia was 97% (laparoscopic repair)**
- Guideline compliance for elective recurrent hernia was 77% (laparoscopic repair)**
- Laparoscopic repair for elective primary unilateral hernias varied significantly by region (South East 43%, North 14%, East 7%, West 6%,  $p < 0.001$ )**

**O'Neil S Hernia 2014**



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# CONCLUSIONS

## **A survey of north american general surgeon regarding laparoscopic inguinal hernia repair LIHR (2014)**

- 46%of respondents never perfor LIHR (one quarter are interested in learning)**
- The other half offer it selectively (bilateral 48%, recurrent 44%)**
- Surgeons (70%) and residents (73%) agreed that the best educational method would be a course followed by expert proctoring.**

**Trevisonno M Hernia 2014**



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**E' ormai un dato di fatto che l'impiego di una protesi riduce in modo significativo il tasso di recidiva dopo trattamento chirurgico di un'ernia indipendentemente dal tipo di accesso usato per posizionarla (dal 12-54% al 2-36%).**

**EU Hernia Trialists Collaboration. Mesh compared with non-mesh methods of open groin hernia repair: systematic review of randomised controlled trials. (Br J Surg 2000)**

## **LIVELLO DI EVIDENZA 1A**

**Resta aperto il confronto sulla via di posizionamento open(Lichtenstein,Stoppa, TIPP ) o laparoscopica (TEP,TAPP).**



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Name	Publisher	Link
European Hernia Society guidelines on the treatment of inguinal hernia in adult patients.	Hernia	<a href="http://download.springer.com/static/pdf/620/art%253A10.1007%252Fs10029-009-0529-7.pdf?auth66=1363805022_d9137efaa b6a9ef2ca38a8438e5d0c3d&amp;ext=.pdf">http://download.springer.com/static/pdf/620/art%253A10.1007%252Fs10029-009-0529-7.pdf?auth66=1363805022_d9137efaa b6a9ef2ca38a8438e5d0c3d&amp;ext=.pdf</a>
Guidelines for laparoscopic (TAPP) and endoscopic (TEP) treatment of inguinal Hernia [International Endohernia Society (IEHS)]	Surgical endoscopy	<a href="http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3160575/pdf/464_2011_Article_1799.pdf">http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3160575/pdf/464_2011_Article_1799.pdf</a>
Laparoscopic surgery for inguinal hernia repair: systematic review of effectiveness and economic evaluation	Health Technology Assessment	<a href="http://www.hta.ac.uk/pdf/xecs/summ914.pdf">http://www.hta.ac.uk/pdfxecs/summ914.pdf</a>
Surgical Options for Inguinal Hernia: Comparative Effectiveness Review	Agency for healthcare research and quality	<a href="http://www.effectivehealthcare.ahrq.gov/ehc/products/244/1176/CER70_Inguinal-Hernia_FinalReport_20120816.pdf">http://www.effectivehealthcare.ahrq.gov/ehc/products/244/1176/CER70_Inguinal-Hernia_FinalReport_20120816.pdf</a>





## EHS Classification for Inguinal Hernia

Patient

P = primary hernia

R = recurrent hernia

0 = no hernia detectable

1 = < 1,5 cm (one finger)

2 = < 3 cm (two fingers)

3 = > 3 cm (more than two fingers)

x = not investigated

L = lateral/ indirect hernia

M = medial/ direct hernia

F = Femoral hernia

Tick the appropriate box:

		P	R		
	0	1	2	3	x
L					
M					
F					

Diagnosis: \_\_\_\_\_

Operation: \_\_\_\_\_

Type of mesh used: \_\_\_\_\_

For future database items



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2007

## European Hernia Society guidelines on the treatment of inguinal hernia in adult patients

M. P. Simons · T. Aufenacker · M. Bay-Nielsen · J. L. Bouillot ·  
G. Campanelli · J. Conze · D. de Lange · R. Fortelny · T. Heikkinen ·  
A. Kingsnorth · J. Kukleta · S. Morales-Conde · P. Nordin · V. Schumpelick ·  
S. Smedberg · M. Smietanski · G. Weber · M. Miserez



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### Summary

### Flow diagram

### General

#### Introduction

#### Motivation

#### Objective

#### Definition

#### Target population

#### Description of problem and initial questions

#### Inguinal hernia treatment for adults in Europe in 2007

#### Transparency of the process and method

#### Steering and Working Group members

#### Owner and legal significance

#### Intended (target) users

#### Collection and assessment of literature

#### Description of implementation trajectory

#### Procedure for authorising guidelines within the European Hernia Society

#### Applicability and costs

#### Expiry date

#### Validation

### Guidelines

#### Indications for treatment

#### Diagnostics

#### Differential diagnosis

#### Classification

#### Risk factors and prevention

#### Treatment of inguinal hernia

#### Inguinal hernia in women

#### Lateral inguinal hernia in young men (18–30 years)

#### Biomaterials

2009





## Guidelines for laparoscopic treatment of ventral and incisional abdominal wall hernias (International Endohernia Society (IEHS)—Part 1

R. Bittner · J. Bingener-Casey · U. Dietz · M. Fabian · G. S. Ferzli · R. H. Fortelny · F. Köckerling · J. Kukleta · K. LeBlanc · D. Lomanto · M. C. Misra · V. K. Bansal · S. Morales-Conde · B. Ramshaw · W. Reinhold · S. Rim · M. Rohr · R. Schrittwieser · Th. Simon · M. Smietanski · B. Stechemesser · M. Timoney · P. Chowbey

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**Abstract** Guidelines are increasingly determining the decision process in day-to-day clinical work. Guidelines describe the current best possible standard in diagnostics and therapy. They should be developed by an international panel of experts, whereby alongside individual experience, above all, the results of comparative studies are decisive. According to the results of high-ranking scientific studies published in peer-reviewed journals, statements and recommendations are formulated, and these are graded strictly according to the criteria of evidence-based medicine. Guidelines can therefore be valuable in helping particularly the young surgeon in his or her day-to-day work to find the

best decision for the patient when confronted with a wide and confusing range of options. However, even experienced surgeons benefit because by virtue of a heavy workload and commitment, they often find it difficult to keep up with the ever-increasing published literature. All guidelines require regular updating, usually every 3 years, in line with progress in the field. The current Guidelines focus on technique and perioperative management of laparoscopic ventral hernia repair and constitute the first comprehensive guidelines on this topic. In this issue of *Surgical Endoscopy*, the first part of the Guidelines is published including sections on basics, indication for

**Electronic supplementary material** The online version of this article (doi:10.1007/s00464-013-3170-6) contains supplementary material, which is available to authorized users.

R. Bittner (✉)  
Hernia Center Rottenburg am Neckar, Winghofer Medicum,  
Röntgenstr. 38, 72108 Rottenburg, Germany  
e-mail: bittnerfamilie@web.de

J. Bingener-Casey  
Division of Gastroenterological and General Surgery, Mayo  
Clinic, 200 First Street SW, Rochester, MN 55905, USA

U. Dietz  
Department of General, Visceral, Vascular, and Pediatric  
Surgery (Department of Surgery I), University Hospital of  
Würzburg, Oberdürrbacher Strasse 6, 97080 Würzburg,  
Germany

M. Fabian · B. Ramshaw  
Department of General Surgery, Halifax Health, Daytona Beach,  
FL, USA

G. S. Ferzli · S. Rim · M. Timoney  
Department of Surgery, Lutheran Medical Center, SUNY Health  
Science Center, 65 Cromwell Avenue, Brooklyn, Staten Island,  
NY, USA

R. H. Fortelny  
Department of General, Visceral and Oncological Surgery,  
Wilhelminenspital, 1171 Vienna, Austria

F. Köckerling  
Department of Surgery and Center for Minimally Invasive  
Surgery, Vivantes Hospital, Neue Bergstrasse 6, 13585 Berlin,  
Germany

J. Kukleta  
General, Visceral, Abdominal Wall Surgery, Klinik Im Park,  
Grossmünsterplatz 9, 8001 Zurich, Switzerland

K. LeBlanc  
Minimally Invasive Surgery Institute and the Fellowship  
Program, Surgeons Group of Baton Rouge of Our Lady of the  
Lake Physician Group, Baton Rouge, LA, USA

D. Lomanto  
Minimally Invasive Surgical Center, KTP Advanced Surgical  
Training Center, YYL School of Medicine, National University  
Hospital, Kent Ridge Wing 2, 5 Lower Kent Ridge Road,  
Singapore 119074, Singapore

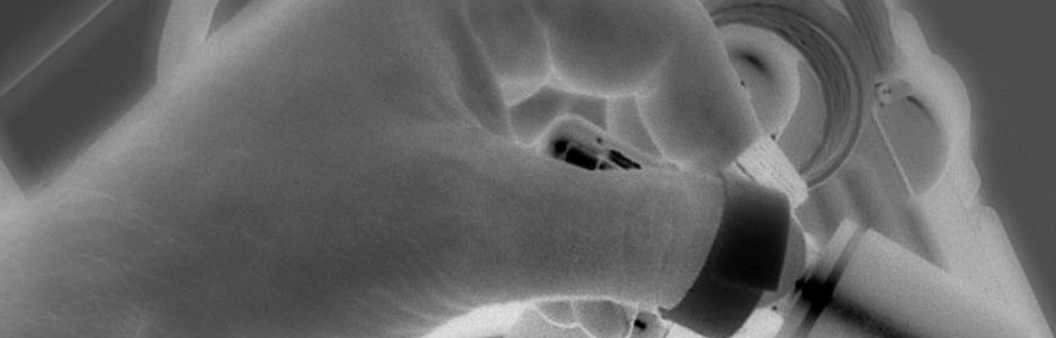


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2013



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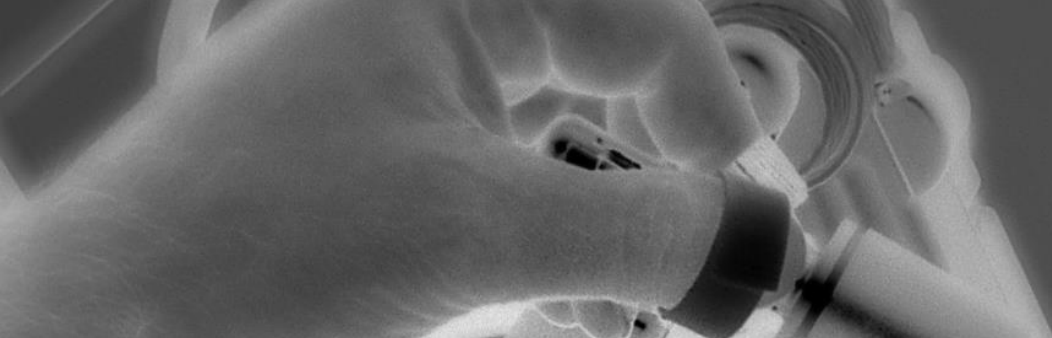


## GROIN HERNIA GUIDELINES

May 2013

Association of Surgeons of Great Britain and Ireland  
*ISSUES IN PROFESSIONAL PRACTICE*  
Groin Hernia Guidelines

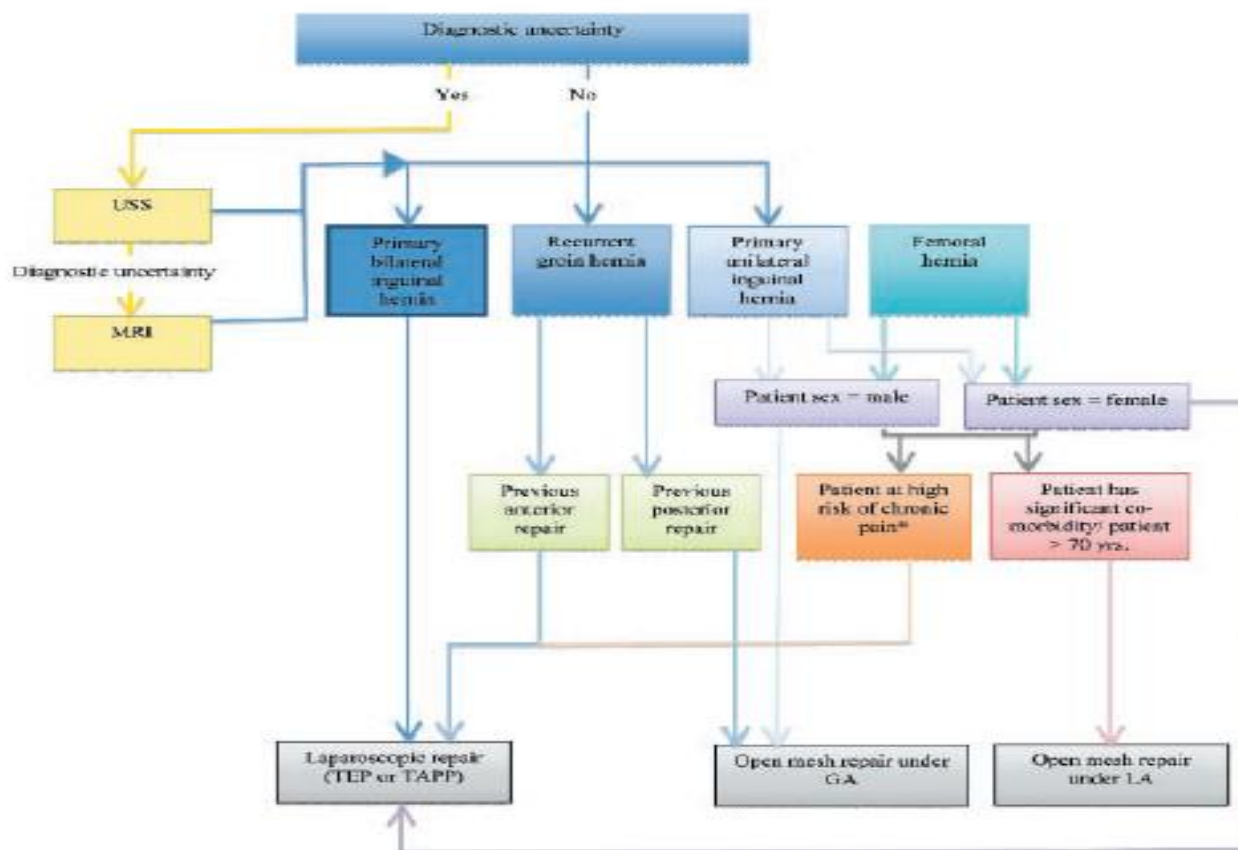
2013



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\*Younger/ active patients, predominant symptom of pain, history of chronic pain

**Figure 2: Recommended algorithm for secondary care**

### Do certain patient sub-groups significantly benefit from either open or laparoscopic surgery?

The laparoscopic approach may be beneficial in patients at risk of chronic pain (younger patients, other chronic pain problems, pre-operative presentation of severe groin pain with only a small hernia on palpation).	<b>D (GPP)</b>
The open approach under LA may be beneficial in older patients or those with significant co-morbidity.	<b>D (GPP)</b>
In the management of unilateral primary inguinal hernias (general population), there is conflicting information on whether laparoscopic repair reduces the incidence of chronic pain and improves other outcomes. The majority of meta analyses conclude that the incidence and severity of pain (both acute and chronic) are lower after laparoscopic repair compared to open repair, but there are limitations in the studies used. See below for bilateral and recurrent inguinal hernias.	<b>B</b>
The resource cost at the time of surgery is higher for laparoscopic surgery (TEP and TAPP) compared to open surgery.	<b>D</b>



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### Is there benefit of one laparoscopic approach over another (i.e. TAPP vs TEP)?

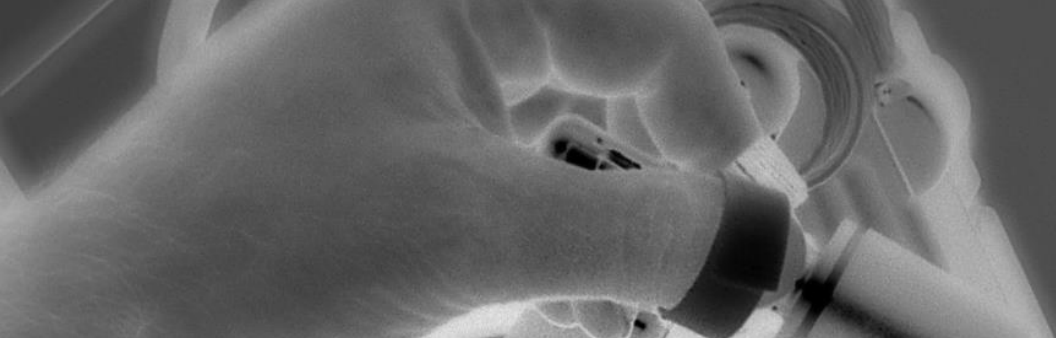
There is no evidence supporting TEP ahead of TAPP or vice versa.	<b>C</b>
TAPP may be beneficial if there is diagnostic uncertainty in cases of groin/lower abdominal pain, since it can be used to grossly assess intra-abdominal structures.	<b>D (GPP)</b>

### Do certain patient sub-groups significantly benefit from either local anaesthetic versus general anaesthetic?

Local anaesthesia is recommended for groin hernia repair in elderly patients, and patients with co-morbidities.	<b>C</b>
---	----------

### What prosthetic material(s) (meshes) should be used?

All adult inguinal hernias should be repaired using flat mesh (or non-mesh Shouldice repair, if experience is available).	<b>A</b>
There is no clinical advantage of plugs compared with flat mesh for open inguinal hernia repair.	<b>A</b>
A cost-effective 'lightweight' (large pore) mesh should be used.	<b>A</b>



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## 2.3 SPECIAL GROUPS

### Groin hernias in women

Groin hernias in women should be repaired laparoscopically.

**B**

### Recurrent groin hernias

The technique used in the index hernia repair should be taken into account when choosing the technique for repair of recurrence. If the initial approach was an open anterior repair, then the recurrent operation should be a laparoscopic repair and vice versa.

**B**

There is no evidence to promote one laparoscopic approach ahead of another (TEP or TAPP), and the choice should be dependent on surgeon expertise and preference.

**B**



It has been suggested that primary repairs, such as Kugel patch, Prolene Hernia System, and plugs, that place mesh in the preperitoneal space, make subsequent laparoscopic repair more difficult. Similarly, patients who have had previous preperitoneal dissection, such as for a prostatectomy, or operations involving the iliac vessels or a preperitoneally located transplanted kidney, may make laparoscopic repair technically difficult. In these groups open anterior repair is recommended.

C



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Patients with severe cardiac or pulmonary diseases may be better treated with open repair with local anaesthesia, and open preperitoneal repair should be considered.

C

Patients who are anticoagulated or are at risk for bleeding may be better suited to open repair.

D (GPP)

Recurrent hernias in women should be repaired laparoscopically because the repair may represent a femoral hernia.

D (GPP)

### Bilateral groin hernias

Bilateral inguinal hernias should be repaired laparoscopically from a cost-utility and patient perspective.

D (GPP)

Current evidence does not show significant difference in outcomes after open versus laparoscopic repair of bilateral inguinal hernias.

B

We could not find evidence for a particular approach to groin hernia repair in morbidly obese patients.

D (GPP)

### Groin hernias in the morbidly obese

Obesity appears to reduce the risk of groin hernia development, rather than increase it.

C

We could not find evidence for a particular approach to groin hernia repair in morbidly obese patients.

D (GPP)

# Laparoscopy vs Open: outcomes

Trials randomizzati



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Schrenk	1996	Br J Surg
Kald	1997	Eur J Surg
Wellwood	1998	BMJ
Wright	2002	Ann Surg
Thumbe	2001	Surg Endosc
Sarli	2001	Surg Endosc
Bringman	2003	Ann Surg
Neumayer	2004	N Engl J Med
Hamza	2010	Int J Surg

- riduzione del dolore postoperatorio acuto e cronico
- degenza più breve

Publication bias

Livello di evidenza: 1B



# Laparoscopy vs Open: outcomes



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- tempo operatorio più lungo
- costi elevati
- tasso di recidiva sovrapponibile

Livello di evidenza: D

Inoltre si associano alla VLS alcune **complicanze, rare, ma molto gravi:**

- danni vascolari maggiori
- lesioni/occlusione intestinali
- lesioni vescicali
- lesioni nervose

*Kald A. Surgical outcome and cost-minimization-analyses of laparoscopic and open hernia repair: a randomised prospective trial with one year follow up. Eur J Surg. 1997;163:505-10.*

*Neumayer N Engl J Med 2004*

# Laparoscopy vs Open: outcomes

## Systematic reviews/metaanalyses

Livello di evidenza: D(GPP)

Autore	Anno		N. studi	Tecnica	N. pazienti
Chung	1999	Surg Endosc	14	TAPP/TEP	1471
EU Trialists Collaboration	2000	Br J Surg	15 RCT	TAPP/TEP	-
Randle	2002	Am J Surg	27 RCT	TAPP/?	-
McCormack	2003	Cochrane Database Sis Rev	41 RCT/CT	TAPP/TEP	7161
Memon	2003	Br J Surg	29 RCT	TAPP/TEP	5588
Kuhry	2006	Surg Endosc	23 RCT	TEP	4231
Karthikesalin	2010	Br J Surg	4 RCT	TAPP/TEP	-
Dedemadi	2010	Am J Surg	12 RCT/CT	TAPP/TEP	1542
Al Kandari	2011	J Coll Physician Surg PaK	100 RCT	TEP	

Publication bias

# Laparoscopy vs Open: outcomes



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## Sistematic comparative reviews

## Publication bias

	VLS	OPEN
Tempo operatorio	▲	▼
Tasso di recidiva	=	=
Dolore postoperatorio acuto e cronico	▼	▲
Complicanze minori		
- infezione ferita	▼	▲
- ematoma	▼	▲
- sieroma *	▲	▼
- infezione protesi	▼	▲
Complicanze maggiori	▲	▼
Degenza ospedaliera	= / ▼	= / ▲
Costo intervento	▲	▼
Ritorno all'attività lavorativa	▼	▲

\* Solo per la TAPP

**Do certain patient sub-groups significantly benefit from either open or laparoscopic surgery?**

The laparoscopic approach may be beneficial in patients at risk of chronic pain (younger patients, other chronic pain problems, pre-operative presentation of severe groin pain with only a small hernia on palpation).	<b>D (GPP)</b>
The open approach under LA may be beneficial in older patients or those with significant co-morbidity.	<b>D (GPP)</b>
In the management of unilateral primary inguinal hernias (general population), there is conflicting information on whether laparoscopic repair reduces the incidence of chronic pain and improves other outcomes. The majority of meta analyses conclude that the incidence and severity of pain (both acute and chronic) are lower after laparoscopic repair compared to open repair, but there are limitations in the studies used. See below for bilateral and recurrent inguinal hernias.	<b>B</b>
The resource cost at the time of surgery is higher for laparoscopic surgery (TEP and TAPP) compared to open surgery.	<b>D</b>



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**Is there benefit of one laparoscopic approach over another (i.e. TAPP vs TEP)?**

There is no evidence supporting TEP ahead of TAPP or vice versa.	<b>C</b>
TAPP may be beneficial if there is diagnostic uncertainty in cases of groin/lower abdominal pain, since it can be used to grossly assess intra-abdominal structures.	<b>D (GPP)</b>

**Do certain patient sub-groups significantly benefit from either local anaesthetic versus general anaesthetic?**

Local anaesthesia is recommended for groin hernia repair in elderly patients, and patients with co-morbidities.	<b>C</b>
---	----------

**What prosthetic material(s) (meshes) should be used?**

All adult inguinal hernias should be repaired using flat mesh (or non-mesh Shouldice repair, if experience is available).	<b>A</b>
There is no clinical advantage of plugs compared with flat mesh for open inguinal hernia repair.	<b>A</b>
A cost-effective 'lightweight' (large pore) mesh should be used.	<b>A</b>

# Benefit for Laparoscopy



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## Sistematic comparative reviews

- **Recurrent hernias (where a previous anterior repair was performed)**  
Livello di evidenza: B
- **Bilateral hernias (occult controlateral hernias in 10-25% pz)**  
Livello di evidenza:D
- **Primary unilateral groin hernias in women**  
Livello di evidenza: B
- **Primary unilateral hernia in young male with higher risk of chronic pain**  
Livello di evidenza: D
- **Femoral hernia** Livello di evidenza:D
- **Regional anaesthesia in TEP (ASA 1-2)**  
No evidence
- **Morbidly obese**  
No evidence

# Drawbacks for Laparoscopy



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## Sistematic comparative reviews

- **Take longer**
- **More expensive**
- **Experience and learning curve**
- **Previous surgery**

Livello di evidenza: D

Livello di evidenza: B

Livello di evidenza: C

# TAPP vs TEP



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## Sistematic comparative reviews

- **No evidence supporting TEP ahead of TAPP or vice versa**  
**publication bias**

Livello di evidenza: C

- **TAPP beneficial with diagnostic uncertainty with groin  
or abdominal pain**

Livello di evidenza: D (GPP)



# Benefit for Open approach under LA



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## Sistematic comparative reviews

- Older patients
- Patients with significant co-morbidity
- Previous surgery
- Patients anticoagulated

Livello di evidenza:  
C

Livello di evidenza:C

Livello di evidenza: C

Livello di evidenza: D (GPP)

### Do certain patient sub-groups significantly benefit from either open or laparoscopic surgery?

The laparoscopic approach may be beneficial in patients at risk of chronic pain (younger patients, other chronic pain problems, pre-operative presentation of severe groin pain with only a small hernia on palpation).	D (GPP)
The open approach under LA may be beneficial in older patients or those with significant co-morbidity.	D (GPP)
In the management of unilateral primary inguinal hernias (general population), there is conflicting information on whether laparoscopic repair reduces the incidence of chronic pain and improves other outcomes. The majority of meta analyses conclude that the incidence and severity of pain (both acute and chronic) are lower after laparoscopic repair compared to open repair, but there are limitations in the studies used. See below for bilateral and recurrent inguinal hernias.	B
The resource cost at the time of surgery is higher for laparoscopic surgery (TEP and TAPP) compared to open surgery.	D



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### Is there benefit of one laparoscopic approach over another (i.e. TAPP vs TEP)?

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TAPP may be beneficial if there is diagnostic uncertainty in cases of groin/lower abdominal pain, since it can be used to grossly assess intra-abdominal structures.	D (GPP)

### Do certain patient sub-groups significantly benefit from either local anaesthetic versus general anaesthetic?

Local anaesthesia is recommended for groin hernia repair in elderly patients, and patients with co-morbidities.	C
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### What prosthetic material(s) (meshes) should be used?

All adult inguinal hernias should be repaired using flat mesh (or non-mesh Shouldice repair, if experience is available).	A
There is no clinical advantage of plugs compared with flat mesh for open inguinal hernia repair.	A
A cost-effective 'lightweight' (large pore) mesh should be used.	A

# Mesh vs Non-mesh



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## Systematic comparative reviews

- **All adult inguinal hernias should be repaired using flat mesh (or Shouldice repair if experience is available)**

**Livello di evidenza: A**

- **A cost-effective “lightweight mesh should be used**

**Livello di evidenza: A**

- **No advantage of plugs in open repair**

**Livello di evidenza: A**

# Mesh vs Non-mesh



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## Sistematic comparative reviews

- **Reduced risk of groin hernia recurrence and persisting pain**
- **Lightweight meshes with less postop.chronic pain and foreign body sensation**
- **Increased bacterial adhesion with multifilament materials and PTFE**
- **In laparoscopy mesh size with a greater impact on recurrence than surgical technique (large size, 15x10cm in TAPP, minimum 3cm mesh overlap, adequate preperitoneal space dissection)**

**Livello di evidenza: B**

# Mesh fixation



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## Sistematic comparative reviews

RCTs/meta-A

- **Tack fixation(titanium tacks,absorbable tacks)**
- **Fibrin glue (significant reduction in chronic pain)**  
**Shah NS World J Surg 2014**
- **Cyanoacrylate glue (reduced chronic pain and hospital stay)**  
**Burza A Minerva Chir 2014**
- **Self-gripping mesh (shorter operative time)**  
**Sajid MS Updates Surg 2014**
- **Liquid-injection preperitoneal dissection (safe and feasible)**  
**Mizota T Surg Endosc 2014**
- **Suture fixation (VLS,robotic)**
- **None**

No evidence

Hernia  
DOI 10.1007/s10029-013-1057-z

ORIGINAL ARTICLE

## The ONSTEP inguinal hernia repair technique: initial clinical experience of 693 patients, in two institutions

A. Lourenço · R. S. da Costa

Received: 6 February 2012 / Accepted: 8 February 2013  
© Springer-Verlag France 2013

### Abstract

**Purpose** Experience with a novel hernioplasty procedure—the ONSTEP approach—for inguinal hernia repair in a large series of patients performed by two surgeons at two institutions is described, focusing in particular on the duration of surgery, the time taken to return to normal activities, chronic pain, complication and recurrence rates.

**Methods** Adult patients underwent inguinal hernia repair using the ONSTEP approach. The hernia defect was repaired using a PolySoft™ hernia patch. Patients were followed up for 1 year for pain, complications and recurrences.

**Results** A total of 693 patients underwent ONSTEP inguinal hernia repair. The mean duration of surgery ( $\pm$ SD) was  $17 \pm 6$  min; the time to discharge from hospital was less than 24 h in all patients; and the mean time to return to normal daily activities was  $6.1 \pm 3.0$  days. The overall complication rate was 1.0 % and the overall recurrence rate was 0.6 %. Residual pain was present in 4 patients at 6 months and was cured by removal of the memory ring in 3 patients and disappeared spontaneously in one case, so that there was no case of chronic pain at 1 year.

**Conclusions** The ONSTEP inguinal hernia repair technique described is simple, quick to perform, produces consistent results and is associated with very low overall complication, chronic pain and recurrence rates. It may offer an alternative to both Lichtenstein and laparoscopic inguinal hernia repair.

**Keywords** Inguinal hernia repair · Open hernia repair · ONSTEP hernia repair · Chronic pain · Recurrence · Complications

### Introduction

The two main approaches to inguinal hernia repair are open repair, which currently involves opening the abdominal wall and repairing the hernia defect by suturing or using a surgical mesh, and laparoscopic repair, which is a minimal-access technique that allows the hernia defect to be repaired without opening the abdominal wall (Table 1) [1]. Most patients with inguinal hernia undergo open repair using the Lichtenstein procedure [2]. However, this procedure causes chronic post-operative pain in a large proportion (15–40 %) of patients [3]. Another open technique, known as transinguinal preperitoneal (TIPP) repair, has recently been introduced. In this technique, a surgical mesh is placed in the preperitoneal space through the hernia orifice without the need to enter the peritoneal cavity [4]. This technique is associated with a shorter operation time and less post-operative pain than Lichtenstein repair [5], but it is more difficult to learn.

In laparoscopic surgery, small incisions are made for the laparoscope and operating instruments, and a surgical mesh is used to close the hernia defect. The main approaches to

# 2013

A. Lourenço  
Faculty of Healthcare Sciences,  
Beira Interior University, Covilhã, Portugal

A. Lourenço (✉)  
General Surgery Department, Local Healthcare Unit,  
Corporate Public Entity, Sousa Martins Hospital,  
Av. Rainha D. Amélia, 6300 Guarda, Portugal  
e-mail: augustolourenco@gmail.com

R. S. da Costa  
Ambulatory Surgery Unit, S. João Hospital Centre,  
Medicine College of Porto, Porto, Portugal

No evidence

## Sistematic comparative reviews

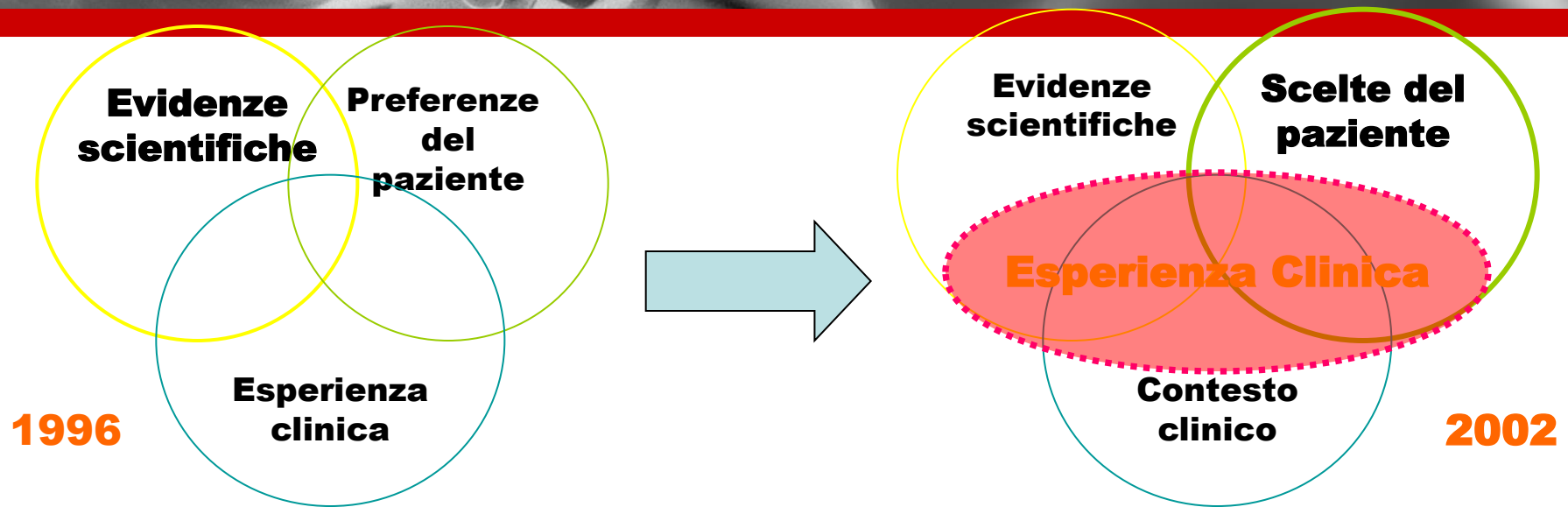
RCTs/  
meta-A

- **TAPP or TEP vs Lichtenstein open repair (less chronic pain, shorter time to return to work, higher recurrence rate when follow-up time is > 3y)**  
**Bobo Z J Surg Res 2014**
- **TEP vs Stoppa open extraperitoneal approach (lower incidence of total PO complication, shorter hospital stay)**  
**Zhu X Surgeon 2014**
- **Transinguinal preperitoneal open repair TIPP vs Lichtenstein open repair (significant reduction in chronic pain)**  
**Sajid MS Gastroenterol Rep 2013**
- **TIPP vs TAPP/ TEP vs Lichtenstein (?)**  
**Danish RCT next spring**



# Un nuovo modello di Evidence Based Medicine

Modello prescrittivo piuttosto che descrittivo



**Ruolo centrale dell'esperienza clinica** nell'integrare il contesto clinico, le migliori evidenze disponibili e le scelte dei pazienti.

**Enfasi sulle scelte, non più solo preferenze, del paziente rispetto alle evidenze scientifiche**



## CONCLUSIONI

- Necessità in ogni Ospedale di una task force in grado di approcciare in sicurezza la via posteriore laparoscopica quando mandatoria
- Proporre la riparazione VLS dell'**ernia inguinale primitiva monolaterale** nella donna, nel maschio ad alto rischio di dolore cronico o quando il paziente lo richiede
- Un occhio di riguardo per la TIPP
- Uscire serenamente dal vecchio modello EBM a favore del nuovo (v. anche sentenze recenti di cassazione)