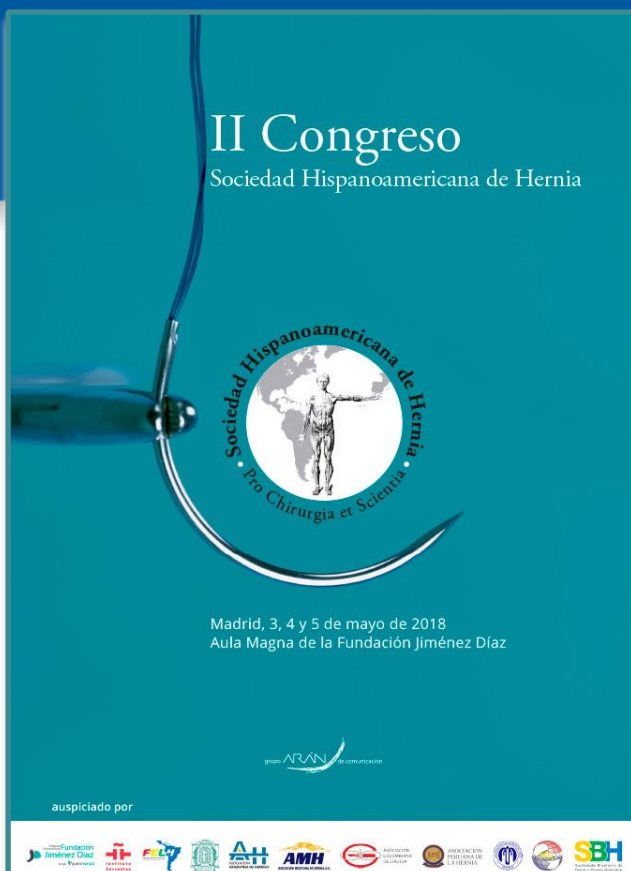


Mesa 4: Innovaciones en la fijación protésica. Sus fundamentos y las mejoras que introducen.

El papel de las mallas autoadhesivas



La Fe
Hospital
Universitari
i Politècnic

Dra. Providencia García Pastor. Madrid, mayo 2018
garciaprov@hotmail.com

... en el tratamiento de la hernia. Indicadores de calidad y eficiencia

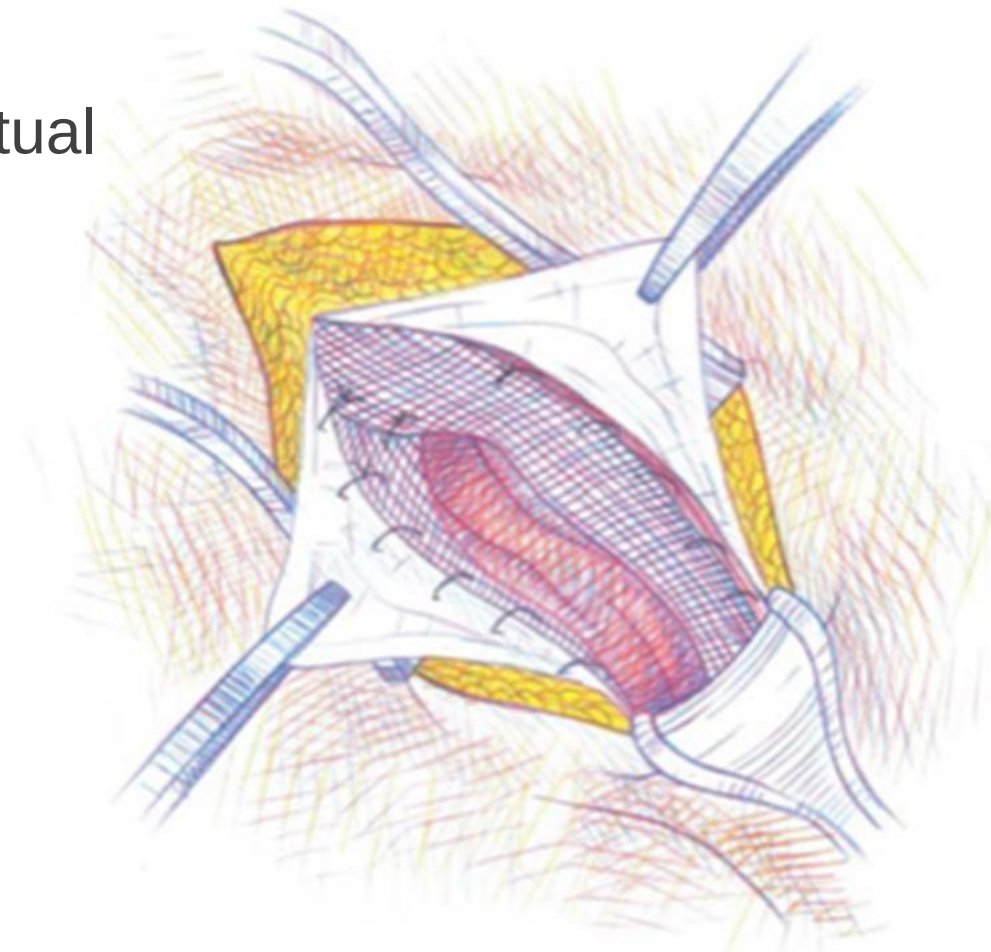
OBJETIVOS

Pv de la gestión sanitaria: EXCELENCIA !!

- ↓↓ tasa de recidiva. Eficacia
- Coste – beneficio del proceso. Eficiencia

Pv de las expectativas del paciente:

- control del dolor postoperatorio
- tiempo de recuperación - reincorporación a la vida habitual
- evitar dolor crónico
- no recidiva



OBJETIVOS

**cirugía funcional
coste-eficiente**

cirugía sencilla – costes procedimiento
→ rápida – CMA – barata

mínima recurrencia – técnica
→ tipo malla, técnica fijación

mínimo dolor agudo / crónico
→ tipo malla (heavy / light)
→ técnica cuidadosa

→ **técnica fijación** (traumática/no trauma)

... causas del dolor

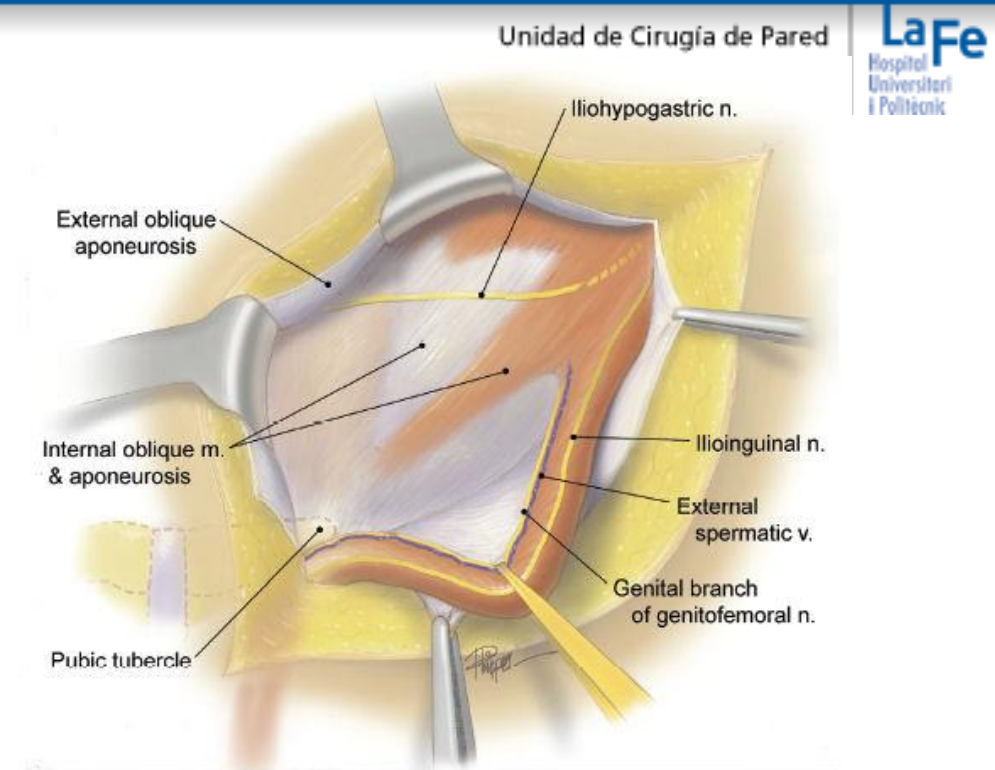
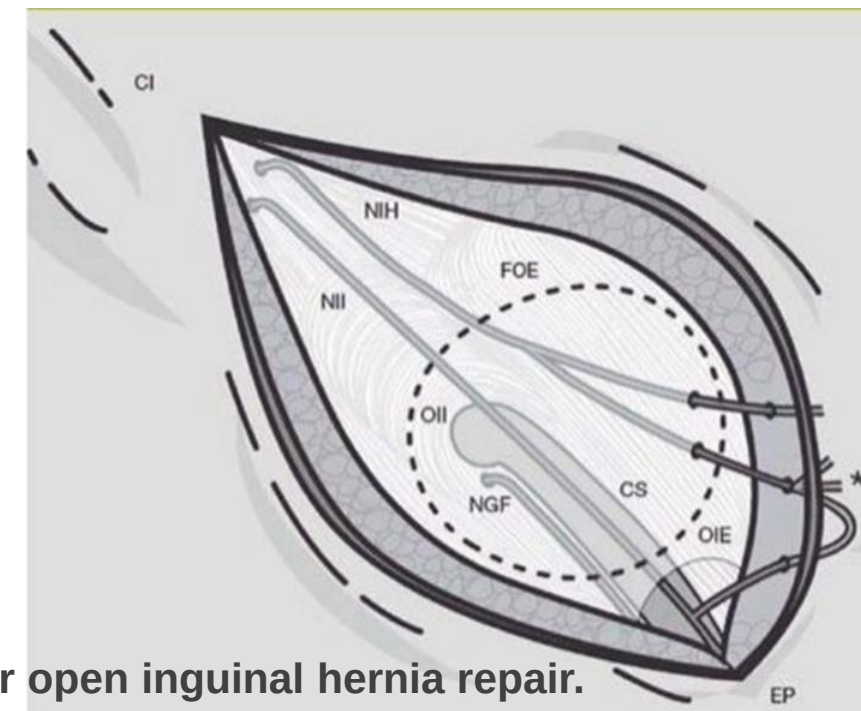
Incisión parietal

Tensión de las fibras (suturas)

Malla →

reacción inflamatoria inducida por la propia malla
reacción periostio (fijación pubis)

lesión nerviosa (ilioinguinal / genito-crural)



... causas del dolor

Incisión parietal

Tensión de las fibras (suturas)

Malla →

reacción inflamatoria inducida por la propia malla
reacción periostio (fijación pubis)

lesión nerviosa (ilioinguinal / genito-crural)

Dolor NO NEUROPÁTICO

Dolor NEUROPÁTICO

- **Lesión nerviosa**
- **Atrapamiento nervioso**
FIJACIÓN DE LA MALLA

... causas del dolor

Incisión parietal

Tensión de las fibras (suturas)

Malla →

reacción inflamatoria inducida por la propia malla
reacción periostio (fijación pubis)

lesión nerviosa (ilioinguinal / genito-crural)

TÉCNICA QUIRÚRGICA

- **Incisión**
- **No tensión**
- **Selección de la malla**
- **Manejo de los tejidos**
- **Analgesia / bloqueo**

FIJACIÓN DE LA MALLA

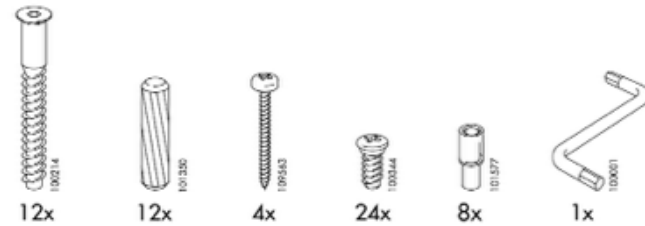
... fijación de la malla

penetrantes

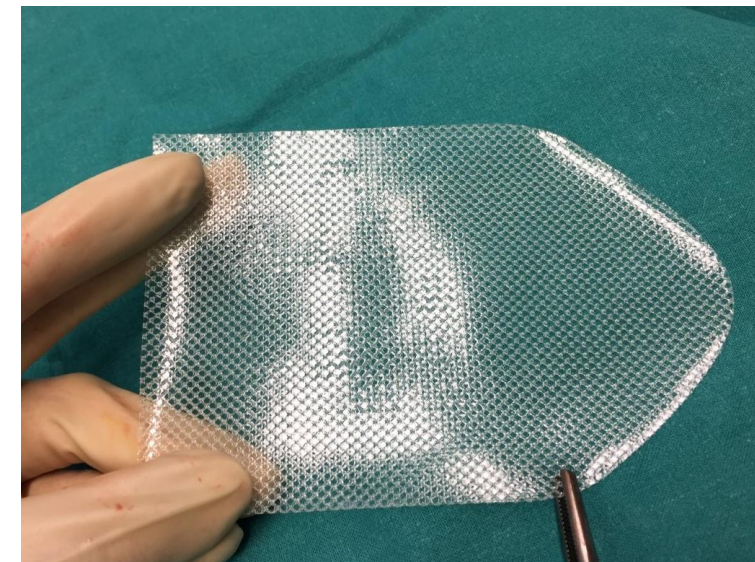
suturas

tacks metálicos / absorbibles

grapas



mallas “self-gripping”
y auto-adhesivas



adhesivos

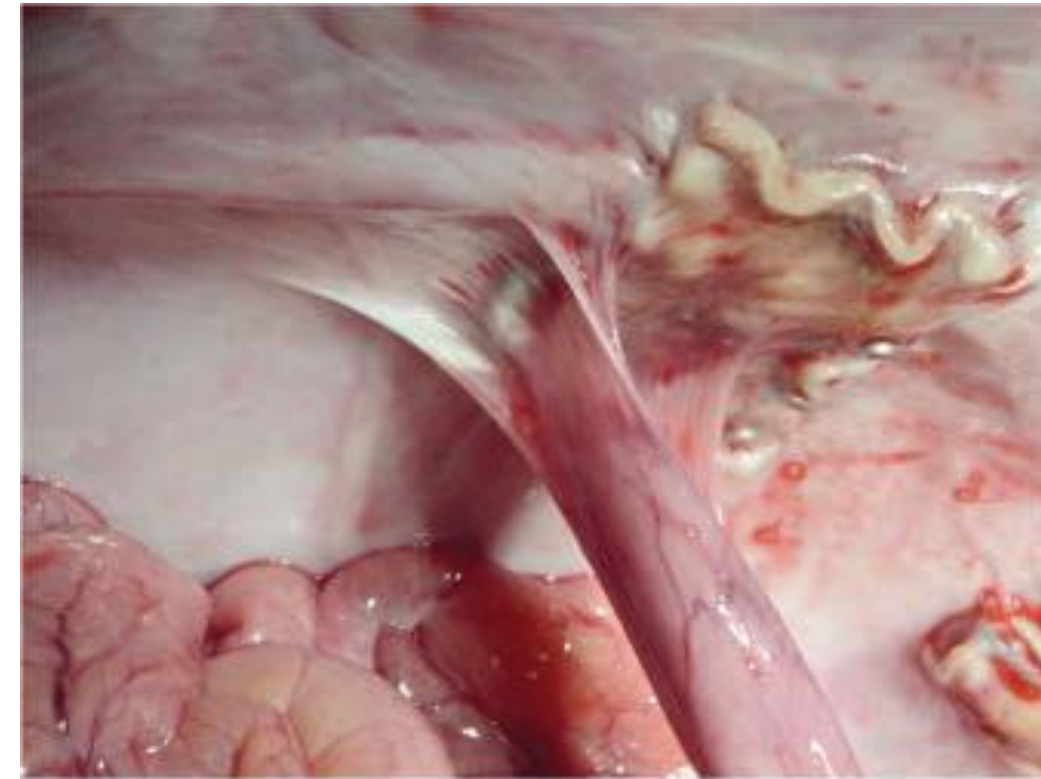
cola fibrina

cola sintética



sin fijación

surgen de una necesidad...



Recuperación funcional

Dolor

Si técn laparoscópica: **Adherencias, oclusión, fístula...**

→tendencia natural de la cirugía de pared abdominal a
sustituir la fijación traumática (grapas, tackers, puntos transmurales, etc.) por una forma
de fijación **reabsorbible y atraumática, segura, eficiente.**

PPL + ác POLILÁCTICO...

Malla bajo peso, semiabsorbible

Reticular.

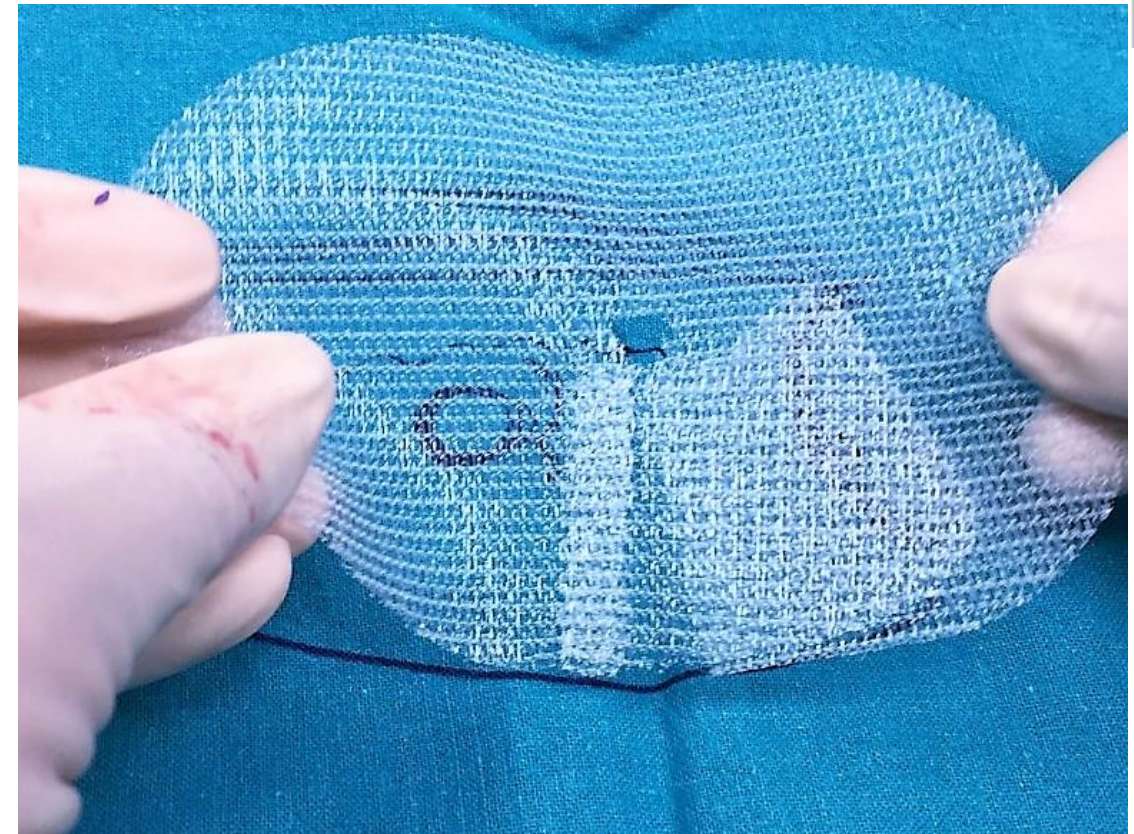
80 gr/m² → 35 gr/m²

Polipropileno (o poliéster) no reabsorbible

+ “velcro” de ác. Poliláctico, absorbible en 12-15 meses.

→ fijación adicional (pubis ?)

No preformada 15x9 / preformada 12x8 – 14x9



Hernia. 2015 Oct;19(5):765-70. doi: 10.1007/s10029-014-1316-7. Epub 2014 Nov 4.

Randomised clinical trial: conventional Lichtenstein vs. hernioplasty with self-adhesive mesh in bilateral inguinal hernia surgery.

Porrero JL¹, Castillo MJ¹, Pérez-Zapata A¹, Alonso MT¹, Cano-Valderrama O², Quirós E¹, Villar S¹, Ramos B¹, Sánchez-Cabezudo C¹, Bonachia O¹, Marcos A¹, Pérez B³.

+ Author information

Abstract

PURPOSE: To compare the results of conventional Lichtenstein hernioplasty with self-adhesive mesh (Parietene Progrid®; Covidien, Dublin, Ireland) (PPG) used

METHODS: Randomised clinical trial with 89 patients with a minimum follow-up of 1 year. All patients had both prostheses implanted randomly, one on each side. Early postoperative pain was evaluated using a visual analogue scale. Also recurrence rate and subjective evaluation of patients were

RESULTS: Pain in the early postoperative period was inferior on the side where PPG mesh was used (2.12 vs. 2.62, p=0.001 during the 1st postoperative day; 0.71 vs. 0.78, p=0.001 during the long-term evaluation (0.71 vs. 0.78, p=0.001). In case of PPG mesh side (24.37 ± 5.1 in case of conventional Lichtenstein hernioplasty side), seven patients (7.8%), six of them (6.1%) had differences were not statistically significant. In case of postoperative pain, this reduction was not significant. In case of recurrence rate when self-adhesive mesh was used, it should be confirmed in later studies. In case of further studies are needed before the

Am J Surg. 2014 May;207(5):773-81. doi: 10.1016/j.amjsurg.2013.08.045. Epub 2014 Jan 4.

Self-gripping mesh versus sutured mesh in open inguinal hernia repair: system review and meta-analysis.

Fang Z¹, Zhou J¹, Ren F², Liu D¹.

+ Author information

Abstract

BACKGROUND: The objective of this article was to compare the outcomes of self-gripping mesh (GM) with sutured mesh (SM) in open inguinal hernia repair.

J Surg Res. 2013 Dec;185(2):653-60. doi: 10.1016/j.jss.2013.07.035. Epub 2013 Aug 11.

Self-gripping versus sutured mesh for inguinal hernia repair: a systematic review and meta-analysis of current literature.

Zhang C¹, Li F, Zhang H, Zhong W, Shi D, Zhao Y.

+ Author information

Abstract

BACKGROUND: Lichtenstein tension-free mesh repair is the most commonly used technique for open inguinal hernia. However, mesh fixation with sutures to avoid dislocation has been considered as a cause of chronic pain and discomfort. A new self-gripping mesh (Parietene Progrid; Covidien) has been developed, which is making the use of sutureless for inguinal hernia repair. The aim of this systematic review was to compare the outcomes of open Lichtenstein inguinal hernia repair using new self-gripping mesh or sutured mesh.

METHODS: PubMed/MEDLINE, CENTRAL, and reference lists were searched for controlled trials of self-gripping mesh versus sutured mesh for open inguinal hernia repair from January 2005 to February 2013.

SM in open inguinal hernia repair. The results were reviewed (666 patients in GM vs. 666 patients in SM) or recurrence (P = .23) or infection (P = .18), seromas. However, this new mesh still needs to

Hernia (2014) 18:165-176
DOI 10.1007/s10029-013-1093-8

REVIEW

A systematic review of randomised control trials assessing mesh fixation in open inguinal hernia repair

D. L. Sanders · S. Waydia

The American Journal of Surgery (2014) 207, 773-781

The American
Journal of Surgery

Review

Self-gripping mesh versus sutured mesh in open inguinal hernia repair: system review and meta-analysis

Zhixue Fang, M.D., Jianping Zhou, M.D., Feng Ren, M.D.*, Dongcai Liu, M.D.



Surgery. 2017 Jul;162(1):18-36. doi: 10.1016/j.surg.2016.12.028. Epub 2017 Feb 27.

Self-gripping versus sutured mesh fixation methods for open inguinal hernia repair: A systematic review of clinical trials and observational studies.

Ismail A¹, Abushouk AI², Elmarazy A¹, Abdelkarim AH³, Shehata M³, Abozaid M⁴, Ahmed H³, Negida A³.

Author information

Abstract

BACKGROUND: We performed this systematic review and meta-analysis to compare the outcomes of Lichtenstein hernia repair using either self-gripping mesh or techniques of sutured mesh fixation.

METHODS: We searched PubMed, Cochrane CENTRAL, Scopus, Embase, and Web of Science for all clinical trials and observational studies that compared self-gripping mesh versus sutured mesh fixation in Lichtenstein hernia repair. Combined outcomes were pooled as odds ratios or mean differences in a fixed-effect model, using Comprehensive Meta-Analysis software for Windows.

RESULTS: Twelve randomized, controlled trials and 5 cohort studies (n = 3,722 patients) were included in the final analysis. The two groups, using self-gripping mesh or sutured mesh fixation, did not differ significantly in terms of recurrence rate (odds ratio = 0.66, 95% confidence interval 0.18-2.44; P = .54) or postoperative chronic groin pain (odds ratio = 0.75, 95% confidence interval 0.54-1.05; P = .09). The operative time was less in the self-gripping mesh group (mean difference = -7.85, 95% confidence interval -9.94 to -5.76; P < .0001). For safety analysis, there were comparable risks between self-gripping mesh and sutured mesh fixation groups in terms of postoperative infection (odds ratio = 0.81, 95% confidence interval 0.53-1.23; P = .32), postoperative hematoma (odds ratio = 0.97, 95% confidence interval 0.7-1.36; P = .9), and urinary retention (odds ratio = 0.66, 95% confidence interval 0.18-2.44; P = .54).

CONCLUSION: Data from our analysis did not favor either of the two fixation techniques over the other in terms of recurrence or postoperative chronic groin pain. Decreased operative time in the self-gripping mesh group cannot justify a recommendation for its routine use. Longer follow-up studies are needed to compare the risk of long-term recurrence for both meshes.

ent study was to evaluate whether usage of inguinal hernia repair, compared with standard sutured mesh, could result in a decreased rate of chronic pain. The aim of the study was to evaluate the rate of foreign body feeling, hernia recurrence, and chronic pain development.

The study was divided into two study groups: the OLP group received standard sutured mesh, and the PPG group received self-gripping Parietex ProGrip mesh. Pain was assessed on a visual analog scale. Foreign body feeling was also assessed as a question.

The OLP group and 70 patients in the PPG group were included in the study. According to the primary endpoint, of the patients, 41.3% in the PPG group experienced pain during different periods (odds ratio = 0.108). The risk ratio for the primary endpoint was 0.91 (CI: 0.91, 2.29 (P = 0.114). Analysis demonstrated an increased rate of chronic pain in patients with severe preoperative pain (odds ratio: 2.47; 95% CI: 1.08, 5.65; P = 0.032) and severe early postoperative pain (odds ratio: 4.29; 95% CI: 1.82, 10.10; P = 0.001). Overall, of the patients, 28% in the OLP group and 21.4% in the PPG group reported foreign body feeling at the operation site at 3-y follow-up (P = 0.360). There were two hernia recurrences in the OLP group and none in the PPG group (P = 0.168).

Conclusions

We failed to demonstrate the advantages of self-gripping mesh in terms of chronic pain and foreign body feeling. However, usage of self-gripping mesh does not increase hernia recurrence rate. Considering the higher price of self-gripping mesh, analysis of cost-effectiveness is needed to prove its advantage and to justify its usage. As severe early postoperative pain is a risk factor for chronic pain development, a very effective postoperative pain control strategy is important after inguinal hernioplasty to reduce the rate of chronic pain.



Journal of Surgical Research

Volume 209, March 2017, Pages 139-144

Gastrointestinal

Three-year results of a randomized study comparing self-gripping mesh with sutured mesh in open inguinal hernia repair

Ceith Nikkolo MD, PhD, Tiit Vaasna MD, Marko Murruste MD, Jaanus Suumann MD, Udo MSc, Helmut Seepter MD, Andres Tein MD, Urmas Lepner MD, PhD

PPL + GEL AUTOADHERENTE

Malla bajo peso, semiabsorbible
Reticular.
200 gr/m² → 32 gr/m², macroporoso
Tamaños, pre-cortadas....



POLIPROPILENO no absorbible

GEL AUTOADHERENTE

- **polivinilpirrolidona (PVP) + polietilen-glycol**
- reabsorbible
- sintético (no origen animal o humano). NO RIESGO biológico
- hidrosoluble → eliminación vía renal (hepática)
- se activa por calor + humedad → gel pegajoso (ambos lados)

LA MALLA PUEDE COLOCARSE SÓLO DURANTE UN TIEMPO LIMITADO !!!

Técnica quirúrgica...



LA MALLA PUEDE COLOCARSE SÓLO DURANTE UN TIEMPO LIMITADO !!!

- campo exangüe
- manos limpias y secas
- posicionamiento con pinzas

Hernia. 2009 Feb;13(1):49-52. doi: 10.1007/s10029-008-0419-4. Epub 2008 Aug 23.

A "self adhering" prosthesis for hernia repair: experimental study.

Champault G¹, Polliand C, Dufour F, Zioli M, Behr L.

⊕ Author information

Abstract

Hernia. 2011 Dec;15(6):635-41. doi: 10.1007/s10029-011-0843-8. Epub 2011 Jul 12.

A self-adhering mesh for inguinal hernia repair: preliminary study.

Champault G¹, Torcivia A, Paolino L, Chaddad W, Lacaine F, Barrat C.

⊕ Author information

Abstract

BACKGROUND: Prosthetic reinforcement is the gold standard to one-third of patients complain of post-surgical pain due to Of these patients, 3-4% will experience severe and disabling self-adhering prosthesis, consisting of a lightweight polypropy early postoperative complications and patient outcomes.

PATIENTS AND METHODS: Between August 2008 and June 20 technique and the self-adhering prosthesis. Primary endpoint at 3-month follow-up. Pain, numbness, and groin discomfort w

Surg Technol Int. 2014 Mar;24:178-82.

Prospective, single center, single surgeon's experience with an atraumatic self-adhering mesh in 100 consecutive patients.

Tollens T¹, Kennes J¹, Vermeiren K¹, Aelvoet C¹.

⊕ Author information

Abstract

The purpose of this study was to show the short- and long-term res February 2011 and April 2013, we prospectively collected data of 1 repair. Mean follow-up time was 23 months (range 7-33 months). M recurrences occurred. Pain was significantly reduced after 1 month well as at the last follow-up visit (1.6 vs 0.48; 95% CI 0.6-1.7; P < 0. good with 86, 84, 86, 84, 83, 88, 92, 87. Only 2 patients developed were observed. Neither mesh nor wound infections occurred. Four while 2 were hospitalized 2 weeks after discharge because of pneu these results, use of the Adhesix mesh seems to be safe, feasible,

Hernia. 2014 Oct;18(5):761-9. doi: 10.1007/s10029-014-1258-0. Epub 2014 May 6.

A comparison of Progrid® and Adhesix® self-adhering hernia meshes in an onlay model in the rat.

Gruber-Blum S¹, Riepl N, Brand J, Keibl C, Redl H, Fortelny RH, Petter-Puchner AH.

⊕ Author information

Abstract

BACKGROUND: Atraumatic fixation is a key element of modern hernia repair. Two different concepts of self-adhering meshes were

Am Surg. 2016 Feb;82(2):112-6.

Inguinal Hernia Repair Using Self-adhering Sutureless Mesh: Adhesix™: A 3-Year Follow-up with Low Chronic Pain and Recurrence Rate.

Tabbara M¹, Genser L, Bossi M, Barat M, Polliand C, Carandina S, Barrat C.

⊕ Author information

Abstract

To review our experience and outcomes after inguinal hernia repair using the lightweight self-adhering sutureless mesh "Adhesix™" and demonstrate the safety and efficacy of this mesh. This is a 3-year retrospective study that included 143 consecutive patients who underwent 149 inguinal hernia repairs at our department of surgery. All hernias were repaired using a modified Lichtenstein technique.

ected. Incidence of chronic pain, postoperative s postoperatively by conducting a telephone survey. We ernia repairs using the Adhesix™ mesh. Ninety-two per ain for more than three years. In our series, neither age

Surg Technol Int. 2016 Dec 16;30:151-154.

Long-Term Outcome After Laparoscopic Repair of Primary, Unilateral Inguinal Hernia Using a Self-Adhering Mesh.

Tollens T¹, Topal H¹, Lucardie A¹, Vermeiren K¹, Aelvoet C¹, Devroe K¹.

⊕ Author information

Abstract

Following our previous study about a lightweight self-adhering mesh (Adhesix®, Cousin Biotech, Wervicq-Sud, France; distributed by Davol Inc., subsidiary of C.R. Bard, Inc.), we report the long-term results with the use of this mesh in patients treated for a primary, unilateral inguinal hernia without any other hernias. Prospectively collected data of 100 patients between February 2011 and February 2014 were analyzed. The mean follow-up time was 2.7 years (range 1-4), and mean length of hospital stay was 0.6 days (range 0.5-1). At the time of the last follow-up visit, two patients (2%) had a recurrent inguinal hernia. Compared to preoperative values, patients reported a significant reduction in their pain sensation (visual analogue scale, VAS) after one month (4.61 vs. 1.32; P<0.001). A difference in VAS scores remained significant at the last follow-up visit (1.31 vs. 0.28; P<0.001). Patients reported high quality of life scores. Only one patient (1%) developed a clinically significant seroma that required an evacuating puncture. Two patients (2%) had superficial wound infections. Neither mesh infections nor mortalities occurred. This study, with a long follow-up, confirms our previous results: use of the Adhesix® mesh is safe, feasible, and efficient in laparoscopic hernia repair.

Hernia (2018) 22:1–165
<https://doi.org/10.1007/s10029-017-1668-x>

ORIGINAL ARTICLE

International guidelines for groin hernia management

The HerniaSurge Group¹

8 revisiones sistemáticas sobre hernia inguinal – sistema de fijación malla
(7 vía anterior / 1 anterior + laparosc)

12 RCT (1992 pac) → metodología mejorable (serie peq, mal “pareado”, FU corto...)

- 4 cianoacrilato-sutura
- 2 self-fixing-sutura
- 4 fibrina-suturas
- 1 tacks-suturas
- 1 sutura reabs-no reabsorbible

... en resumen. Alternativas de fijación

Hernia (2018) 22:1–165
<https://doi.org/10.1007/s10029-017-1668-x>

ORIGINAL ARTICLE

International guidelines for groin hernia management

The HerniaSurge Group¹

Reduce TIEMPO QUIRÚRGICO

No diferencia RECURRENCIA

No diferencia INFECCIÓN

DOLOR CRÓNICO 9 no dif / 3 a favor de cianoacrilato-fibrina

DOLOR AGUDO mejor en NO TRAUMÁTICO (sutil diferencia)

→ NO DIFERENCIAS SI TEP / TAPP

Statement and Recommendation

<i>Statement</i>	In open anterior mesh groin hernia repairs there are no differences in recurrence or surgical site infection rates between different fixation methods. Fixation with glue (fibrin sealant or cyanoacrylate) may reduce early postoperative and chronic pain.	☒ ☐ ☐ ☐	
<i>Recommendation</i>	Atraumatic mesh fixation in open inguinal hernia repair techniques is suggested to reduce early postoperative pain.	☒ ☐ ☐ ☐	Weak

... en resumen. Alternativas de fijación

Hernia (2018) 22:1–165
<https://doi.org/10.1007/s10029-017-1668-x>

ORIGINAL ARTICLE

International guidelines for groin hernia management

The HerniaSurge Group¹

Self-gripping mesh is an acceptable form of treatment for primary IHs, although only medium-term data are available and no specific information on the outcome in larger (direct) hernias. It has no benefits over the Lichtenstein technique other than a somewhat shorter operative time. Here also, the device's additional cost must be considered.

For these reasons, the recommendations to use the Lichtenstein technique with a standard flat mesh vs the use of self-gripping mesh or three-dimensional implants are upgraded to strong by the HerniaSurge Group.

Self-gripping mesh

The first study on the use of the self-gripping Parietene Progrid® mesh (large-pore polypropylene with resorbable polylactic acid micro-grips) found less pain on the first postoperative day when compared with the use of another large-pore non-gripping polypropylene mesh.¹⁶⁸ Subsequently, four other RCTs comparing self-fixating large-pore mesh vs suture fixation in Lichtenstein have been published up to 2013.^{169–172} These studies have been evaluated in five different meta-analyses, all published in 2013 and 2014 in different journals.^{173–177} All confirmed

no difference in acute or chronic pain and recurrence rates. In addition, three additional RCTs were published in 2014,^{178–180} and two more were published with long-term data from 2015 onwards.^{181, 182} All confirmed comparable recurrence rates and acute and chronic pain incidence in the long term. The self-fixation mesh is likely to be more expensive than standard fixation, but the operative time was shorter in the Progrid® group (by a range of 10–20 min).

Based on the only data on medium-term follow-up are available (12–24 months), we advise the authors of the previously mentioned trial data to follow-up their patients at 3–5 years and publish their updated results on chronic pain and recurrence rates.

Statement

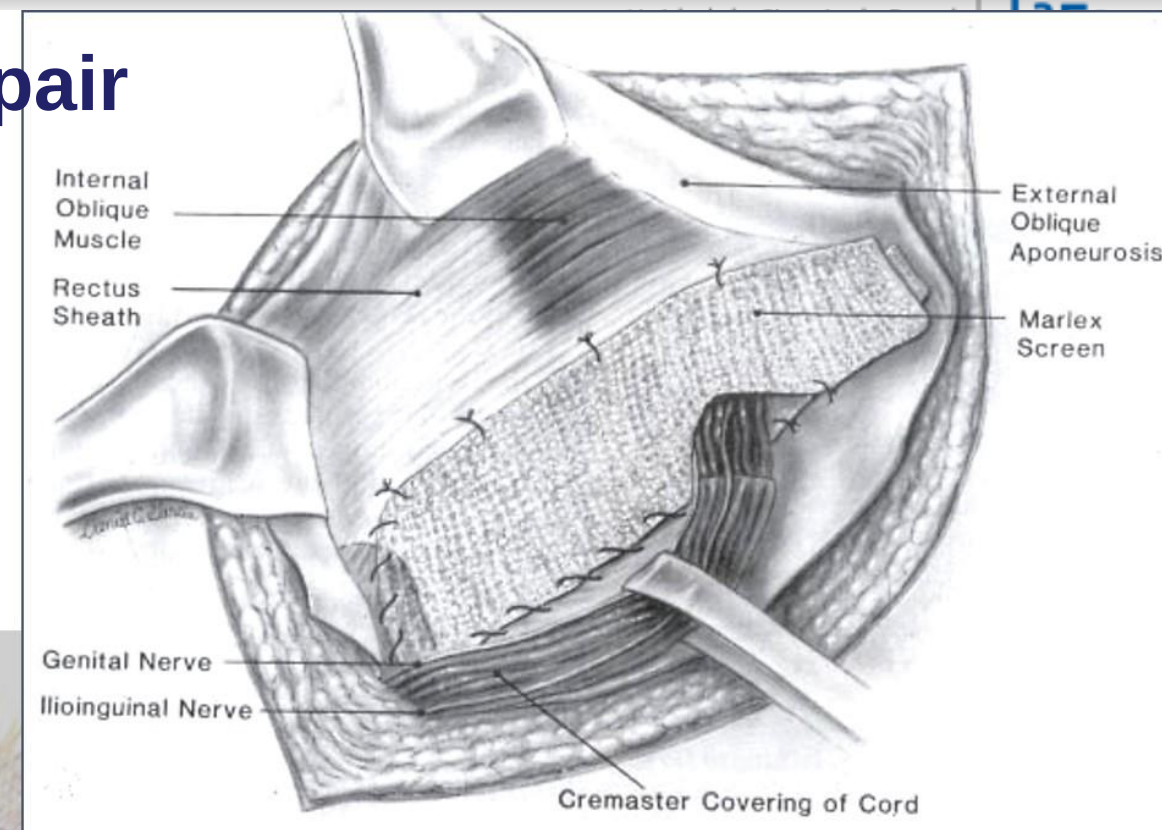
Self-gripping meshes do not provide any benefit in the short- and medium-term versus the Lichtenstein technique except a somewhat decreased operative time.



... en resumen. Alternativas de fijación

		costes	seguridad
sin fijación		nulos	escasa
fijación penetrante sutura, tackers, grapas		sutura barata tackers caros	muy alta
mallas autoadhesivas		caras	correcta
cola fibrina		muy caras	correcta
CIANOACRILATO		barato	correcta

Lichtenstein. Tensionless open hernia repair

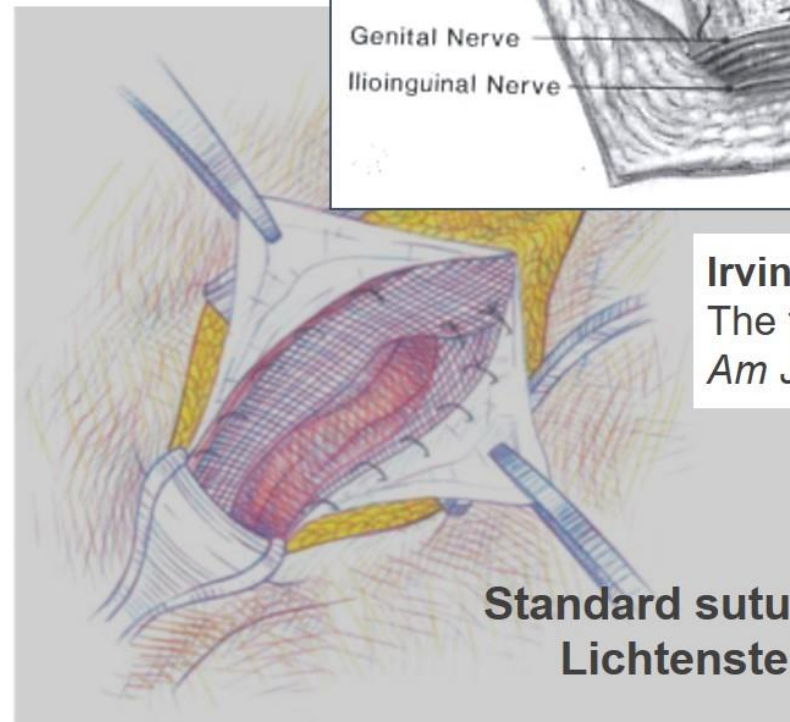


Irving L. Lichtenstein et al
The tension-free hernioplasty
Am J Surg 1989 Volume 157; 2: 188–193

fácil de aprender - curva sencilla
reproducible – extensión
excelentes resultados - recidiva

anestesia local / CMA
↓↓ **dolor postoperatorio** (sin tensión)

recuperación del paciente → reincorporación a su actividad normal
coste – beneficio !!!



Standard suture mesh fixation
Lichtenstein procedure

Lichtenstein. Tensionless open hernia repair

Identificar y proteger los **nervios** ilioinguinal, iliohipogástrico y genital

Reducir el saco - refuerzo fascia transversalis

Refuerzo del suelo con **mall**a **grande** 7x15cm, que debe:

- superar el pubis 2cm.

- 3–4 cm por encima del triángulo de Hesselbach

- superar 4-5 cm lateralmente al orificio inguinal interno

Las “colas” de la mall

a deben **cruzarse** y suturarse juntas

Evitar el desplazamiento o pliegue de la mall

a

- Sutura continua al ligamento inguinal

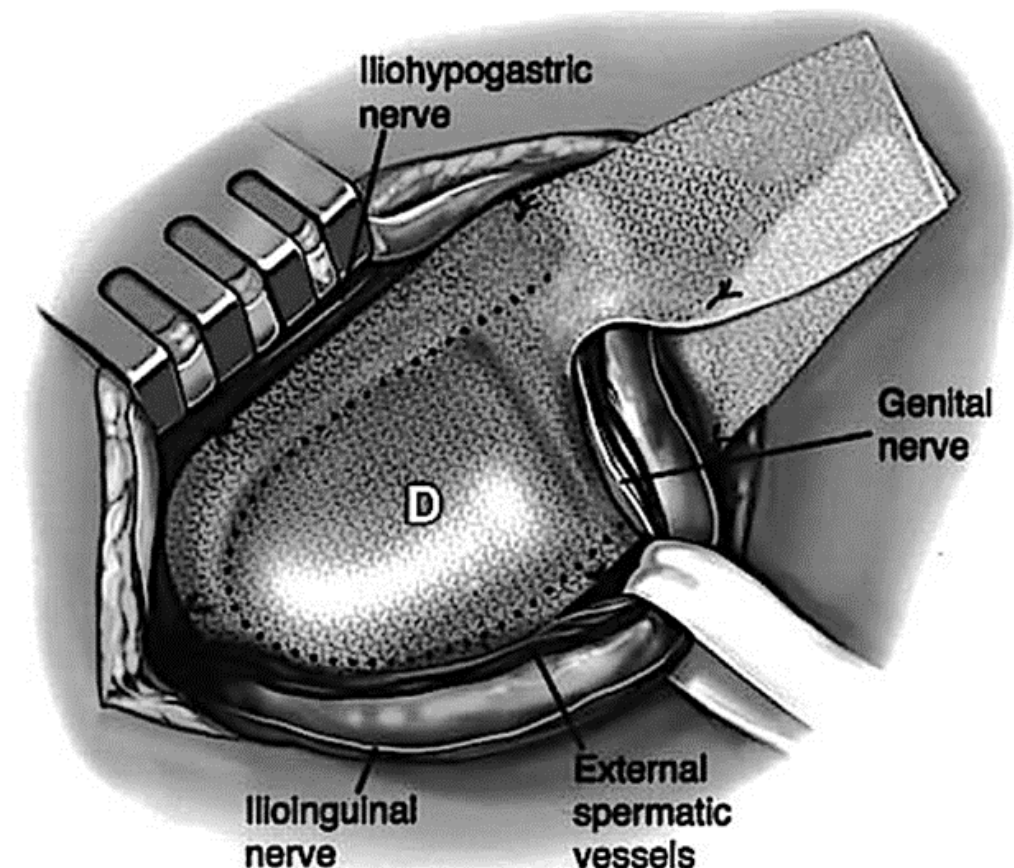
- Dos puntos sueltos en la porción craneal

Mall

a sin tensión: “**dome-shaped**”

- Tanto en decúbito como en bipedestación

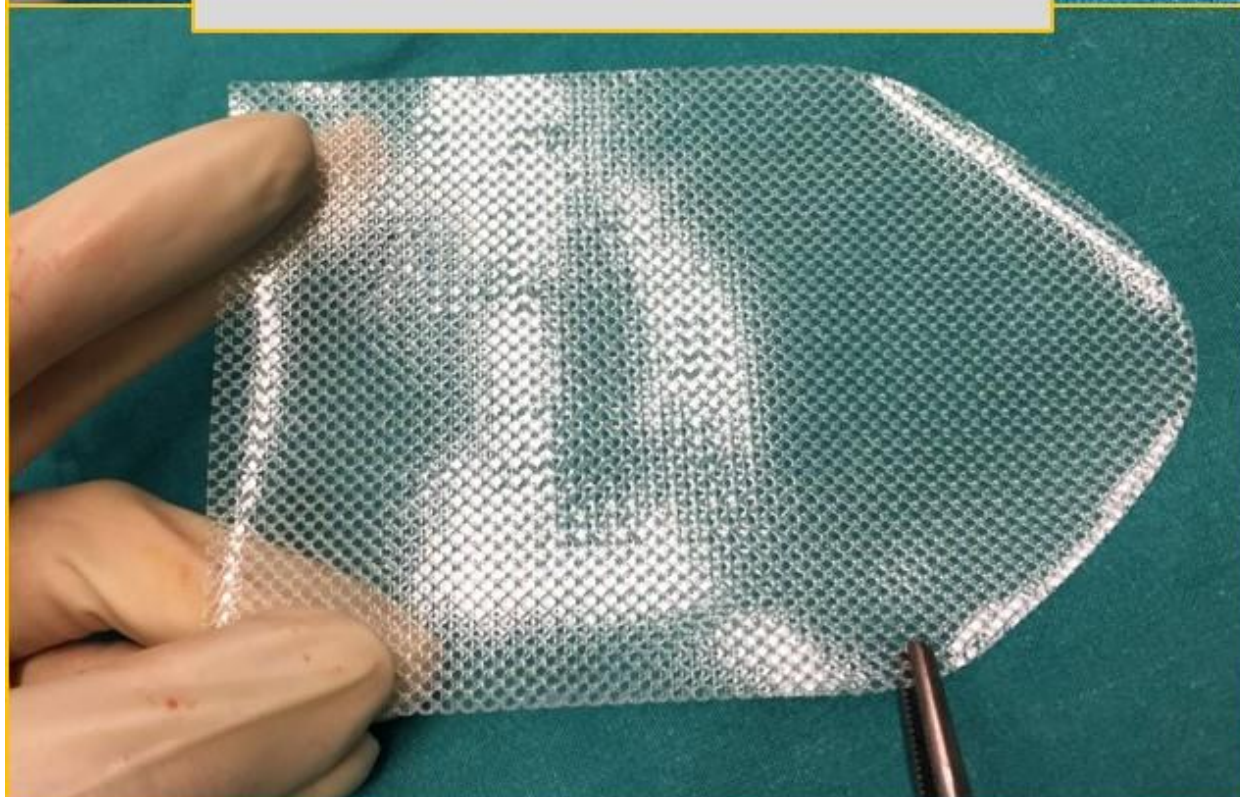
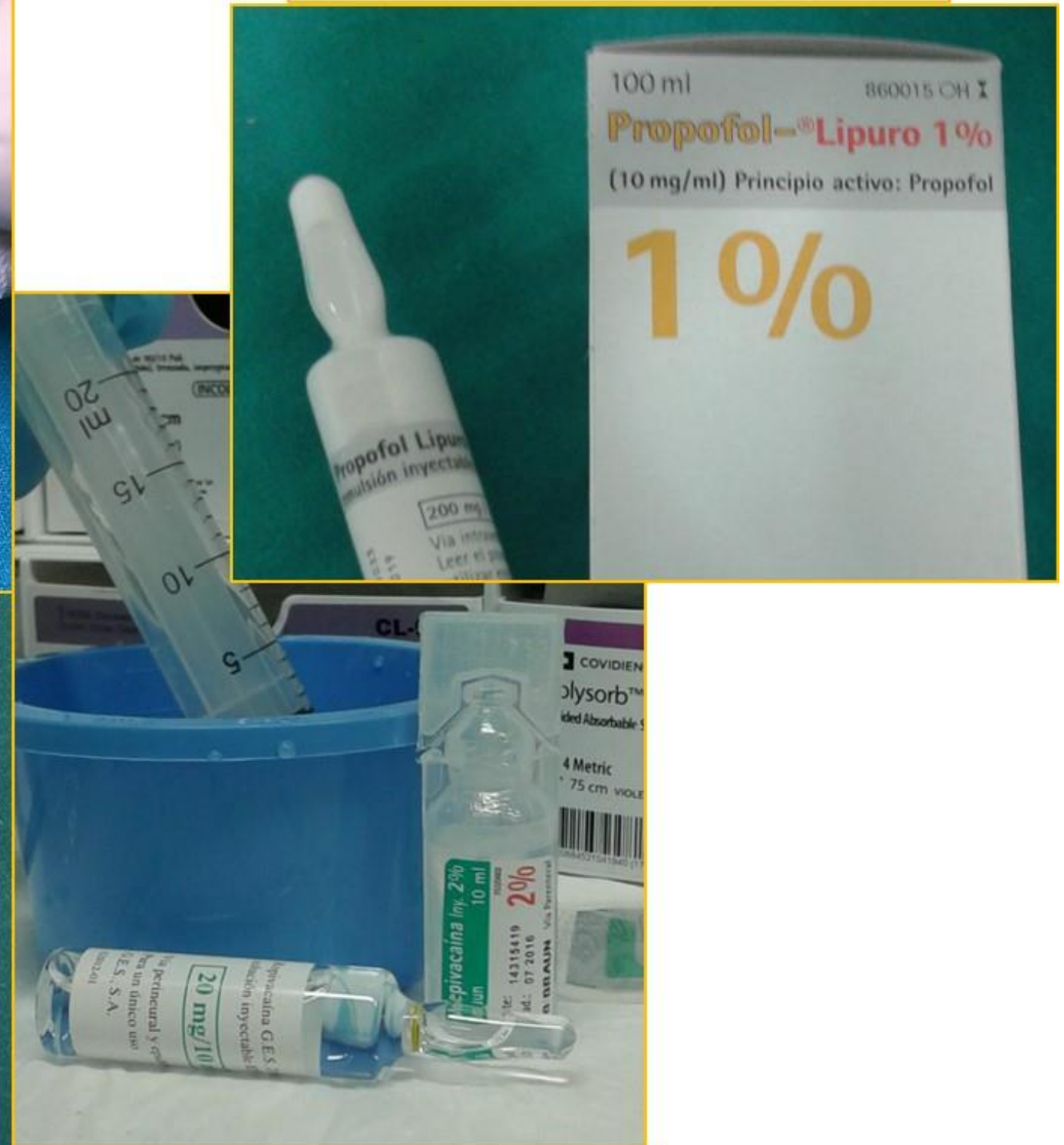
- Se prevé contracción de la malla



**Sedation +
local anesthesia
ilioinguinal blocking**



PPL self-adhesive mesh



Mesa 4: Innovaciones en la fijación protésica. Sus fundamentos y las mejoras que introducen.

El papel de las mallas autoadhesivas



LaFe
Hospital
Universitari
i Politécnic

Dra. Providencia García Pastor. Madrid, mayo 2018
garciaprov@hotmail.com