



## Original article

# Prospective Randomized Trial of Long-Term Results of Inguinal Hernia Repair Using Autoadhesive Mesh Compared to Classic Lichtenstein Technique With Sutures and Polypropylene Mesh<sup>☆</sup>

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## A B S T R A C T

**Introduction:** The use of autoadhesive meshes with hooks that allow fixation without sutures is a therapeutic alternative to decrease recurrence and chronic pain after inguinal hernia repair. The aim of this study was to evaluate if this kind of mesh has any advantage in long term results in comparison with the classic Lichtenstein technique with sutures and polypropylene mesh.

**Materials and methods:** We report a prospective and randomized study of patients who have been operated on for inguinal hernia between March of 2009 to March 2010, divided into 2 groups of 45 patients. In autoadhesive (AA) group, we included patients operated on with an autoadhesive mesh and in classic Lichtenstein (CL) group we included cases with an inguinal hernioplasty with sutured polypropylene mesh. We evaluated time of inactivity, complications, recurrences and grade of pain after 1 year.

**Results:** The mean age was 60 years in AA group and 49 in LC group. There were more men than women and there were no differences in co-morbidities between groups. The mean size of hernia orifice was 3 cm in both groups and 60% of the hernias were indirect.

After 1 year, 77 patients were evaluated, 39 in LC group and 38 in AA group. 86.8% and 87.2% of them were asymptomatic. The mean time of recovery of daily activities was 15 days in both groups. There were neither recurrences nor severe chronic pain in the AA group. The mean of grade of pain was 0 (range: 0–4) in AA group and 0 (range: 0–5) in LC group. In this group, there was one recurrence and one patient was taking analgesics for intense pain. Neither mortality nor other long term complications were found.

**Conclusion:** The use of autoadhesive and parcial reabsorbible meshes in inguinal hernia repair has no effect on recovery of daily activities, postoperative pain and long term complications compared with hernioplasty with polypropylene mesh fixed with monofilament suture.

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## Estudio prospectivo y aleatorizado de los resultados a largo plazo de la hernioplastia inguinal con malla autoadhesiva frente a la técnica convencional con malla de polipropileno y sutura de fijación

### RESUMEN

#### Palabras clave:

Hernioplastia inguinal  
Mallas autoadhesivas  
Dolor crónico  
Recidiva

**Introducción:** Las mallas autoadhesivas se plantean como una alternativa para disminuir el dolor crónico y las recidivas en la hernioplastia inguinal. Pretendemos determinar si el empleo de estas mallas representa algún beneficio en el resultado a largo plazo en comparación con la técnica clásica de Lichtenstein fijando la malla con suturas.

**Material y métodos:** Estudio prospectivo y aleatorizado de pacientes intervenidos de hernia inguinal entre marzo de 2009 y marzo del 2010, incluyendo en el grupo autoadhesivo (AA) 45 individuos en los que se realizó la hernioplastia con malla autoadhesiva y en el grupo Lichtenstein clásico (LC) otros 45 utilizando una malla de polipropileno fijada con sutura monofilar. Se evaluaron tiempo de inactividad, posibles complicaciones, recidivas y grado de dolor al año de la intervención.

**Resultados:** La edad media del grupo AA fue de 60 años frente a los 49 del grupo LC. En ambos, la mayor parte eran varones sin diferencias en las comorbilidades asociadas, siendo el tamaño medio del defecto herniario de 3 cm; en torno al 60% de las hernias eran indirectas. Al año de la intervención, 39 pacientes fueron evaluados en el grupo LC y 38 en el AA. La mediana del tiempo de recuperación de la actividad diaria normal fue de 15 días en ambos grupos. En el grupo AA, el 86,8% estaban asintomáticos, ninguno presentó recidiva herniaria ni precisó tomar analgésicos de forma continua, siendo la mediana del grado de dolor de 0. En el grupo LC, el 87,2% permanecían asintomáticos, un paciente (2,6%) presentó una recidiva y un paciente (2,6%) requería la toma continua de analgésicos por dolor intenso, siendo la mediana de dolor de 0. No hubo mortalidad ni otras complicaciones a largo plazo.

**Conclusión:** El empleo de mallas autoadhesivas y parcialmente reabsorbibles en la reparación de la hernia inguinal no presenta diferencias significativas en recuperación, dolor ni complicaciones postoperatorias a largo plazo frente a la hernioplastia con malla de polipropileno fijada con sutura monofilar.

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## Introduction

Inguinal hernia disease is one of the surgical entities with the greatest incidence at present, representing a large number of surgical interventions and high healthcare costs. Advances made both in prosthetic material as well as different wall reconstruction techniques strive to improve post-operative well-being and diminish the number of long-term recurrences and neuralgias due to the technique. The use of self-adhesive mesh is an example of these advances as they avoid using sutures, which supposedly cause the chronic pain<sup>1</sup> associated with inguinal hernioplasty procedures. In a previous study by our group published in this journal,<sup>2</sup> we presented the short-term results of a technique using this type of mesh with shorter intraoperative placement time of the prosthesis and total surgical time compared with the conventional technique.

As a continuation of that paper, we present this new study, with the aim to determine whether the use of self-adhesive and partially absorbable mesh would be more beneficial in inguinal hernia repair using the Lichtenstein technique compared with traditionally used mesh that are attached with monofilament sutures with regard to the results for inactive time/sick leave, pain and long-term complications.

## Materials and Methods

We have carried out a prospective, randomized and comparative study of patients who underwent inguinal hernia repair performed by our team between March 2009 and March 2010 (Fig. 1).

The patients were randomly divided into 2 groups of 45 individuals each by drawing a paper out of a bag that had either "SA" (self-adhesive) or "CL" (classic Lichtenstein) written on it just moments before surgery.<sup>2</sup> Patients in group SA underwent inguinal hernia repair with a preformed self-adhesive polypropylene and polylactic acid mesh (Parietene Progrid™ Self-Fixating mesh by Covidien®), while patients in group CL underwent Lichtenstein hernioplasty with low-density polypropylene mesh (Microval®) that was attached with non-absorbable monofilament sutures. Excluded from the study were those patients with recurring, bilateral or femoral hernias and those who underwent emergency hernia repair (Fig. 1).

In the preoperative study, we collected different epidemiologic variables and comorbidities, while cataloging the anatomical type of hernia according to the Gilbert classification. In all cases, the same antibiotic prophylaxis was administered: preoperatively, 30 min before the skin incision

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