



Comparison Between Parietex Polyester Mesh and Optilene Polypropylene Mesh in Laparoscopic Hernia Mesh Repair



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Introduction

Inguinal hernia repair is one of the most commonly performed surgical procedures in the world. Many studies have found laparoscopic repair to have advantages over conventional repair, including reduced postoperative pain, reduced need for narcotics, and earlier return to work. Since August 2016, Taiwanese patients undergoing laparoscopic inguinal hernia repair have the option of paying an additional \$500 for the Covidien Parietex Polyester Mesh, a mesh known for its greater flexibility and decreased foreign body sensation, compared to the Braun Optilene Polypropylene Mesh which is covered by the National Health Insurance (NHI) at no extra charge. To date, no study has examined measures of patient satisfaction and surgical outcomes using these repair meshes in Taiwan.

The goal of this study is to help physicians make evidence-based decisions when counseling patients prior to the procedure.

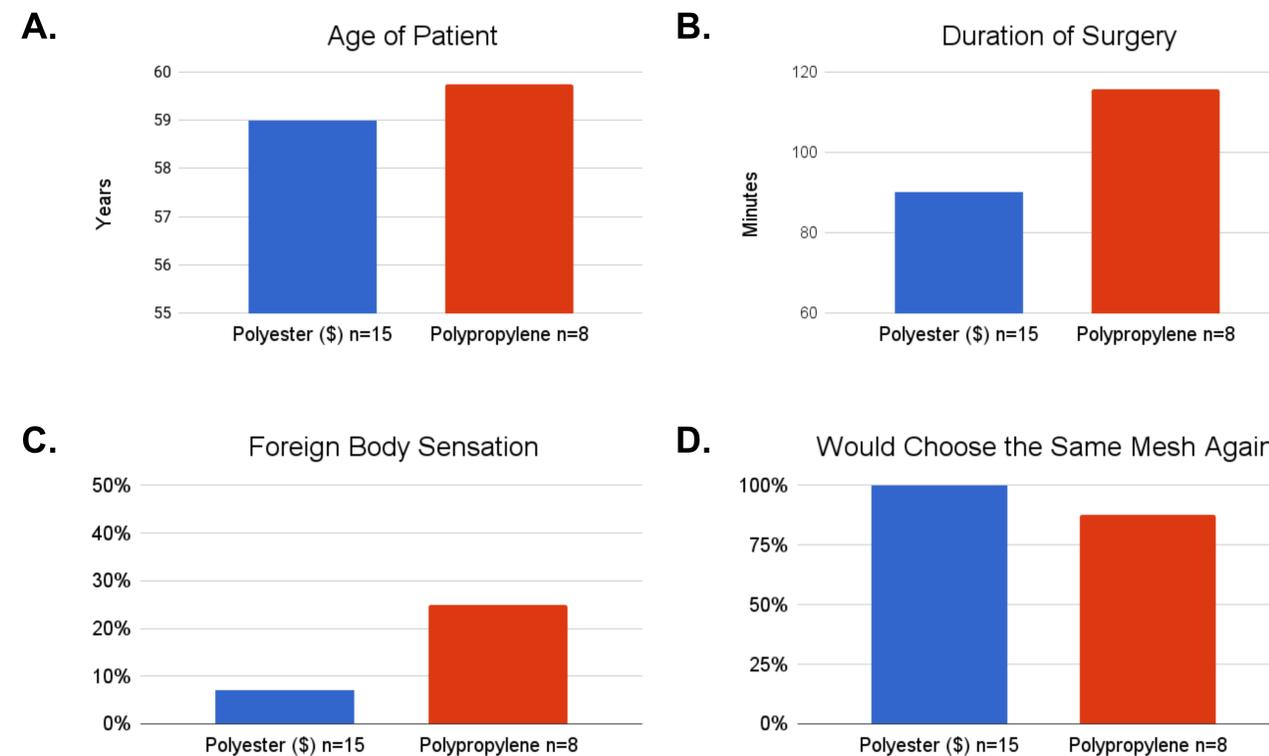


Figure 1: Patients are provided the Polypropylene Mesh at no additional cost but are provided the option of purchasing a higher performing Polyester Mesh for an additional 500\$. All patients, regardless of whether they chose the Polypropylene Mesh or self-paid Polyester Mesh, are charged a flat co-pay of 70\$.

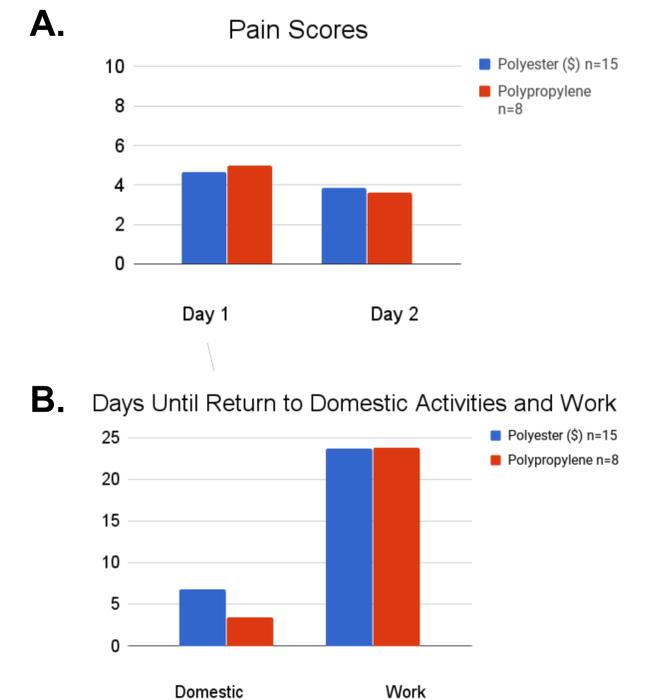
Methods

This is a retrospective cohort study of laparoscopic surgeries from August 17th, 2016, when the Polyester Mesh first became available at Taipei Hospital, to April 28th, 2017. 28 surgeries fit the study criteria of first time laparoscopic, unilateral, non-complicated inguinal hernias in men. 11 out of the 12 patients who received the Polypropylene Mesh and 8 out of the 16 patients who elected for the Polyester Mesh were successfully contacted by phone and consented to participating in the survey. Patients were asked a standardized set of questions to gauge post-surgical outcomes and satisfaction. Demographic and surgical data were retrieved from Taipei Hospital's medical record system. The Student *t* test and Fisher Exact Test were used to determine whether satisfaction and surgical outcomes were significantly different between the two groups.

Results



Figures 2: **A.** Patients who elected for the Polyester Mesh and who received the Polypropylene Mesh were of similar age (avg. age 59.8 ± 16.0 compared to 59.0 ± 11.1). **B.** Patients who received the Polyester Mesh had a significantly shorter surgery time (90 ± 22 compared to 116 ± 30 minutes, $p=0.039$). **C.** Patients received the Polyester Mesh also had a lower prevalence of foreign body sensation ($7\% \pm 26\%$ compared to $25\% \pm 46\%$, $p=0.27$). **D.** Patients received the Polyester Mesh were more pleased with their choice of mesh ($100\% \pm 0\%$ compared to $88\% \pm 35\%$, $p=0.35$).



Figures 3: **A.** Patients who received the Polyester Mesh reported a higher average pain score 48 hours after surgery (3.9 ± 2.5 compared to 3.6 ± 2.3 , $p=0.82$), and, **B.** slower return to normal domestic activities (6.7 ± 7.0 compared to 3.4 ± 1.8 , $p=0.094$).

Discussion

An important part of a physician's pre-operative consultation includes educating patients regarding benefits and associated costs. While the survey results favored the Polyester Mesh, the only statistically significant finding was the decreased surgery time of the Polyester Mesh, which could be beneficial in lessening patient exposure to anesthesia. A larger scale future study would help generate evidence for physicians to use when guiding their patients in making surgical decisions most congruent with their values.