



# Laparoscopic inguinal bilateral hernia repair: a cost-effective procedure?

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Twenty million surgical interventions of inguinal hernia are performed annually in the world (1). There are different surgical techniques for the treatment of inguinal hernia, including the laparoscopic approach with two different techniques (TAPP and TEP) (1). Laparoscopic inguinal hernia surgery in adults is considered a feasible, safe and cost-effective technique that achieves less postoperative and chronic pain and a faster recovery (1,2). However, it continues to be performed in a variable but small percentage of patients by laparoscopic approach, if we compare with the number of non-laparoscopic inguinal hernioplasties that are performed. The rate of laparoscopic surgery in inguinal hernia varies according to countries between 0 to 55%, being 25% in the USA (1,2).

The clinical scenarios where laparoscopic inguinal hernioplasty could be more efficient are: patients with recurrent inguinal hernia, bilateral inguinal hernia and in obese patients (2,3). The problem is that these situations are technically more complex than the unilateral laparoscopic inguinal hernioplasty and one must have a previous training and have performed a number of simpler cases before performing these more complex patients.

The reasons that are usually argued to continue performing traditional inguinal hernioplasty are the direct costs (trocars and laparoscopic material), the longer operating time, the need for general anesthesia and a long learning curve of at least 100 patients. Moreover, not all surgeons have the devices and training to perform a laparoscopic inguinal hernioplasty. In any case, based on direct cost criteria, it is difficult to compete with such an efficient procedure as non-laparoscopic hernioplasty (1), especially in countries where health is public and universal,

and expenses is a key factor in the making strategic health decisions.

All these arguments can be refuted since the direct costs are adjustable but probably always higher in the laparoscopic technique although in centers experienced with a significant reduction of the disposable material they could only be slightly higher (1). The operating time decreases as the surgeon performs a greater number of cases, and the times used in open and laparoscopic techniques are approaching (1). The rate of recurrence and conversion also decrease with the experience of the surgeon (1). But it is the cost-efficiency measures adjusted to the quality of life, the most accurate tool to compare two techniques.

Several studies have shown that the indirect/social costs of laparoscopic hernioplasty are lower (faster recovery, shorter time off work, better psychometric results, fewer complications and recurrence in experienced centers). Therefore, the adding direct and indirect costs, the laparoscopic technique seems to be more efficient (1).

Ielpo *et al.* have published recently in *Annals of Surgery* an RCT study on cost-effectiveness in 165 bilateral inguinal hernias comparing the laparoscopic technique TAPP and open hernioplasty (4). The conclusions of the study are that the laparoscopic technique provides less postoperative pain, less stay and fewer complications, but a higher direct cost (4). These data are similar to those obtained in previous studies. But the most important part of the study are two key points: the QALY are superior in the laparoscopic technique (0.81 vs. 0.68), and the ICER calculation shows that the TAPP is less expensive and more effective than the open technique (4).

So, the strengthness and most important data of this



study are: it is a prospective randomized study that provides the highest level of scientific evidence, its originality since studies of quality of life and cost-effectiveness on inguinal hernia are still scarce, the determination not only of direct costs but also indirect costs, and the study was performed in a short period of study and made by a group with extensive experience in both techniques (4). The authors themselves highlight as a minor limitation that the anesthesia performed in both techniques is different since it is general anesthesia in the laparoscopic and epidural in open surgery group (4).

After the reading of this interesting manuscript we could state that in patients with bilateral inguinal hernia, the laparoscopic technique provides excellent clinical and also economic results, if we consider direct and indirect costs, and it is more cost-effectiveness than open approach. But, the learning curve is not short and extensive training is required before obtaining the results published by Ielpo *et al.* (4) Training programs are required especially for resident doctors and younger staff that would allow a complete consolidation of the laparoscopic bilateral inguinal hernioplasty as gold standard technique in next years.

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