The Impact of Double Fixation with Titanium Tack and N-Butyl Cyanoacrylate Glue (NBCG) Mesh Fixation versus NBCG Fixation in Totally Extra-Peritoneal Hernioplasty with 3-Dimensional Configured Polyester Mesh: A Comparative Study

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Total extraperitoneal hernioplasty serves as a good surgical option for unilateral primary inguinoscrotal hernia patients in terms of early recovery and lower postoperative complications.¹ Fixation methods in laparoscopic hernioplasty are important because they help reduce recurrence.² However, there have been many reports of postoperative pain and discomfort after fixation with not only titanium tacks, but also bioabsorbable tacking systems.³ The authors suggest that patients receiving TEP with 3-dimensional configured polyester mesh and n-butyl cyanoacrylate glue (NBCG) fixation only had surgical outcomes comparable to those receiving NBCG plus titanium tack fixation. They also showed that fixation with tacks may cause more postoperative pain and increase hospital costs. I have some comments regarding these findings.

First, as shown in Table 1, although there is no difference in the baseline characteristics between groups, it is regrettable that there is no explanation of the criteria dividing them. This may be a limitation of the study.

Second, randomized trials and meta-analyses have shown that fixation of mesh (especially using tacking systems) has the potential to generate painful sequelae or severe compli-

cations such as chronic pain and nerve injuries. In addition, there have already been attempts not to fix mesh during laparoscopic hernioplasty.⁴ Therefore, I wonder if the authors should have compared double fixation with titanium tacks and NBCG mesh fixation versus NBCG fixation alone.

However, this study has some very valuable implications. Hernia surgery is the most commonly performed operation in the world and has a low complication rate. Globally, the number of herniated patients is increasing because of the increase in the elderly population, and the number of hernia operations is also rapidly increasing. Therefore, the problem of quality of life after hernia surgery should be treated very seriously. This study described the results of postoperative pain on day 1 to day 5. In addition, one year later, they showed their sincerity to observe the pain score through follow-up.

This study makes an important point regarding medical costs. Specifically, the study revealed significant differences in total hospital cost, with USD \$3035 being required for the combined group versus USD \$2022 for the NBCG group. There are different medical payment systems in each country, but all attempt to reduce costs. This is especially true in the

case of diseases such as hernia surgery, where properly reducing costs per operation contributes significantly to reducing total national healthcare costs. In Korea, the disease-related group (DRG) system has been adopted for hernia surgery, and efforts are being made to reduce medical expenses. In this study, the NBCG fixation only group had a comparative surgical outcome to the NBCG plus titanium tack group. To improve the results, more studies of tailored mesh fixations according to hernia types and sizes should be conducted. I hope that many other surgeons will be inspired by this study and make an effort to investigate mesh fixation methods during laparoscopic hernia surgery.

REFERENCES

- 1) Zhu X, Cao H, Ma Y, et al. Totally extraperitoneal laparoscopic hernioplasty versus open extraperitoneal approach for inguinal hernia repair: a meta-analysis of outcomes of our current knowledge. *Surgeon* 2014;12:94-105.
- 2) Shan NS, Fullwood C, Siriwardena AK, Sheen AJ. Mesh fixation at laparoscopic inguinal hernia repair: a meta-analysis comparing tissue glue and tack fixation. *World J Surg* 2014;38:2558-70.
- 3) Horisberger K, Jung MK, Zingg U, Schöb O. Influence of type of mesh fixation in endoscopic totally extraperitoneal hernia repair (TEP) on long-term quality of life. *World J Surg* 2013;37:1249-57.
- 4) Dehal A, Woodward B, Johna S, Yamanishi F. Bilateral laparoscopic totally extraperitoneal repair without mesh fixation. *JSLs* 2014;18:e2014.00297.