Single Port Totally Extraperitoneal Inguinal Hernia Repair a new articulating instrument

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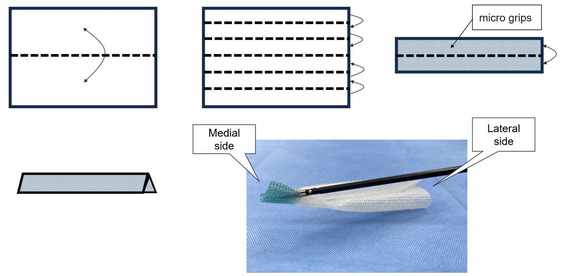
Background

Inguinal hernia repair is the most common surgery in general surgery, with 80% of all hernia repairs in adults being for inguinal hernias. Laparoscopic total extraperitoneal (TEP) inguinal hernia repair is a widely adopted technique known for its minimally invasive nature. Recent systematic reviews of mesh non-fixation showed that the risk of recurrence, complications, and postoperative pain did not differ between fixation and non-fixation; However, these reviews did not assess the certainty of technical feasibility of incarcerated inguinal hernia. This study presents technical tips for the Mesh nonfixation method, specifically addressing its application in cases of incarcerated inguinal hernia.

Purpose

We performed single port laparoscopic TEP hernia repair using an Progrip™ mesh which has a Self-Gripping Property and an articulating laparoscopic instrument.

Figure1. "Hansol-roll" mesh placement method



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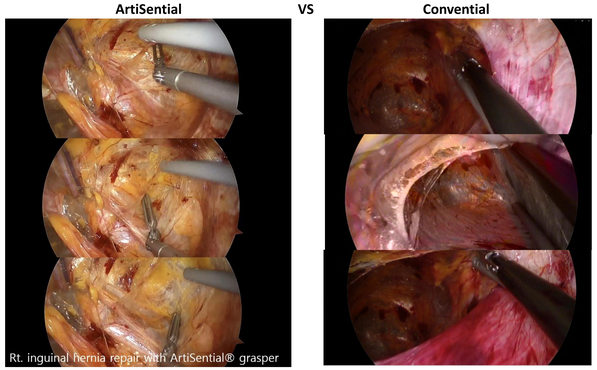
Methods

We introduce the novel "Hansol-roll" placement method for folding the self-gripping mesh. After hydrating the mesh, fold the top and bottom parts along the dotted line into thirds toward the center and fold them twice. Do not roll or press the layers of the mesh together. Fold the top and bottom to the center again along the dotted lines. Grasp the medial edge of the mesh along the two folds with a the grasper (Fig 1).

A case involving incarcerated inguinal hernias treated with the Mesh nonfixation method during single port laparoscopic TEP repair was conducted. Technical nuances, patient outcomes, and complications were systematically reviewed.

Single port surgery is difficult for beginners because the surgery is performed while crossing instruments. However, in surgeries using Artisential, there is no crossover between instruments (Fig 2).

Figure2. comparison between ArtiSential® and conventional single port surgery.



Results

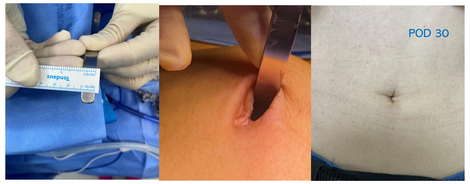
A 35-year-old man visited our outpatient clinic with right inguinal pain and bulging. His symptoms of groin protrusion began 10 years ago.

We performed laparoscopic exploration and reduction of sigmoid colon (Fig 3). The use of multi-joint instruments during lateral dissection is especially convenient when lowering the superior peritoneum. Even when dissecting blood vessels and VAS by unfolding a large indirect sac, using an articulating instrument is convenient because the instruments do not crossover when using a single-incision approach.

Progrip™ mesh is folded into an M-shape and inserted into the extraperitoneal space, positioning the center of the mesh at the desired location. The lower part of the mesh is unfolded to prevent folding, and then the upper part is unfolded.

The total operation time was 75 min, and the patient's symptoms resolved on post-operative day 1 and discharged. Follow-up on post-operative day 30 showed no symptoms (Fig 4).

Figure4. post op wound



Conclusions

Mesh nonfixation method in single port laparoscopic total extraperitoneal(TEP) inguinal hernia repair for incarcerated inguinal hernia is technically feasible and safe with Progrip™ mesh and Artisential. The approach suggests potential benefits in terms of operative efficiency and patient comfort.

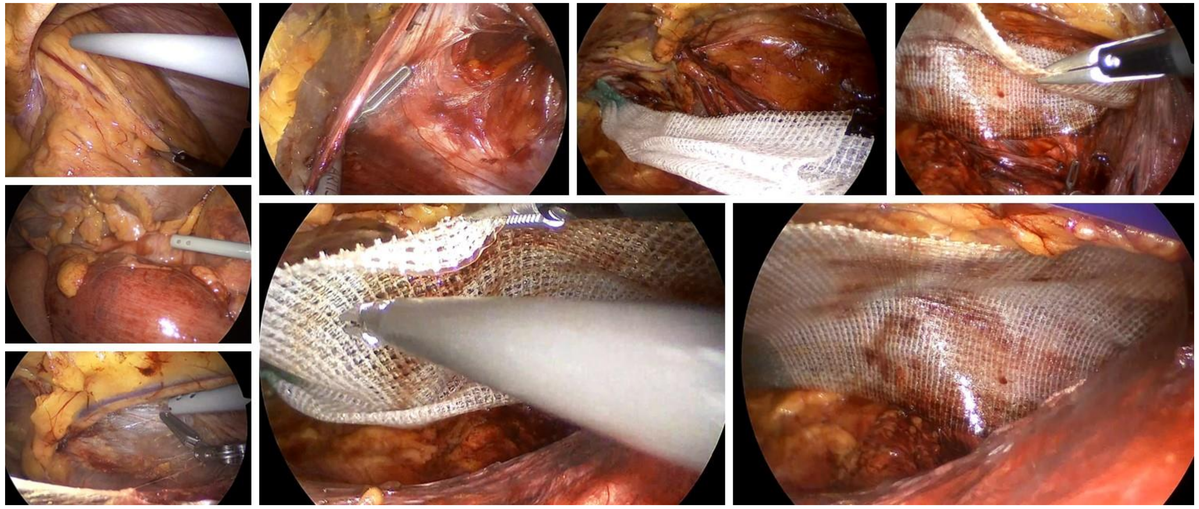


Figure3. Mesh nonfixation method in Single port TEP inguinal hernia repair for Incarcerated inguinal hernia