TECHNIQUES TO ELIMINATE COMPLICATIONS OF LAPAROSCOPIC INGUINAL HERNIA REPAIR

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Introduction

TEP is an excellent method for repairing hernias outside the abdominal cavity without exposing the sutures in the abdominal cavity. However, we present some ideas to reduce complications further and make the procedure less invasive.

Method

Addition of a 3mm intraperitoneal port above the umbilicus: Intraperitoneal observation allows for the identification of the type of hernia, distribution of fat deposits, and small blood vessels. It can also be used to plan the dissection of the preperitoneal cavity, degas the abdominal cavity during surgery, and confirm and correct the mesh position (Fig. 1, 2, 7, 10) . In cases of sliding hernia, adding one more port allows for traction of the prolapsed portion.

Dissection based on fascial anatomy: Under monitor observation, enter the anterior surface of the posterior rectus sheath (PRS) and expose the PRS toward the pubic bone, then recognize it as being divided into the tendon, attenuated tendon and membranous portion (MP). The MP is incised on the medial side of the inferior epigastric vessels (IEV) to enter the preperitoneal space, and the peritoneum is further pushed down toward the dorsal side, cutting up toward the semilunar line to find the peritoneal edge on the lateral side. During this process, a part of the MP is left to cover and protect the IEV (Fig 1-7).

From the outside, dissection of the fatty tissue attached to the hernia sac is started, and parietalization is continued. From the inside, dissection is performed between the sling of the preperitoneal fascia and the hernia sac, the VAS is identified, and dissection is performed up to the umbilical artery, and the vesicohypogastric fascia is cut so as not to interfere with the mesh prosthesis IEV (Fig 4-6).

Dissection and hemostasis with bipolar forceps(Fig.11): Small blood vessels are individually hemostated using LAP BiSect to prevent postoperative bleeding. This is particularly useful for hemostasis during parietalization while considering chronic postoperative pain.

Lymphangiography using ICG: Identifying and protecting the lymphatic vessels prevents scrotal edema and helps preserve the spermatic cord components during complex dissection of scrotal and sliding hernias(Fig. 4, 6, 8, 9, 10).

Inguinal canal closure by ligation and resection at the internal inguinal ring of the hernia sac. This eliminates unnecessary dissection within the inguinal canal, prevents mesh displacement during a period when early fixation is unstable, and further simplifies difficult cases of scrotal hernia(Fig5, 10c-d).

Conclusion

By using the above techniques, TEP can be performed without complications.

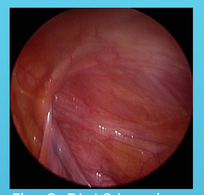


Fig. 2 Rt. L2 hernia

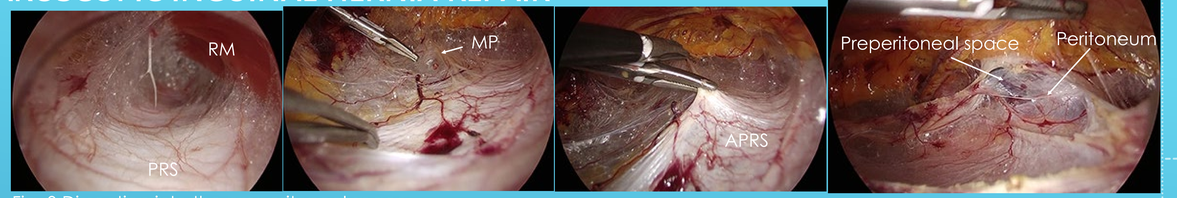


Fig. 3 Dissection into the preperitoneal space

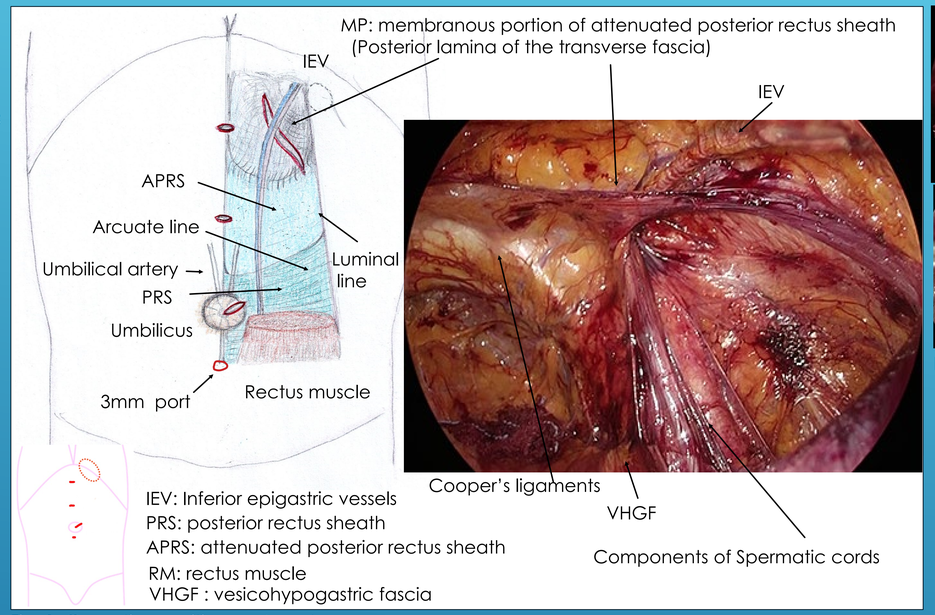


Fig. 1 Operative position and anatomy

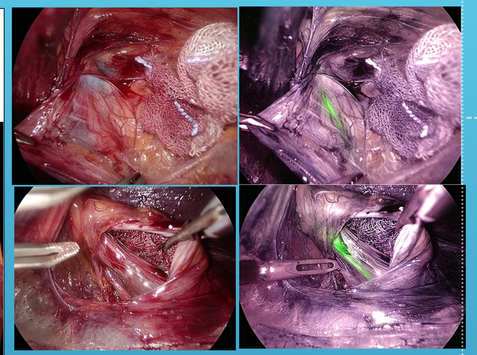


Fig. 4 Lymphangiography-guided parietalization

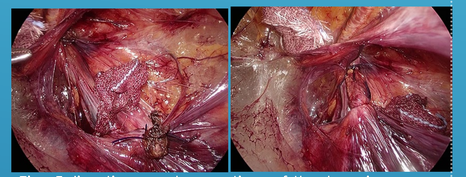


Fig. 5 ligation and resection of the hernia sac at the level of the 2nd. internal inguinal ring.

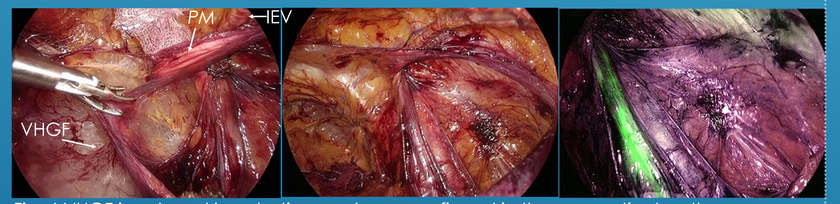


Fig. 6 VHGF is cut, and lymphatic vessels are confirmed in the spermatic sheath.

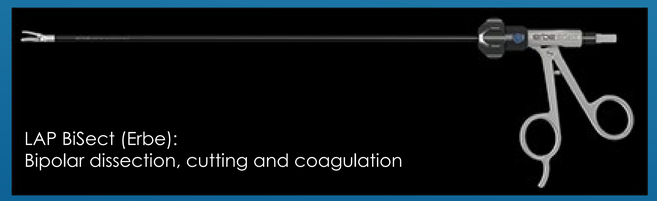


Fig. 11 LAP BiSect (Erbe)

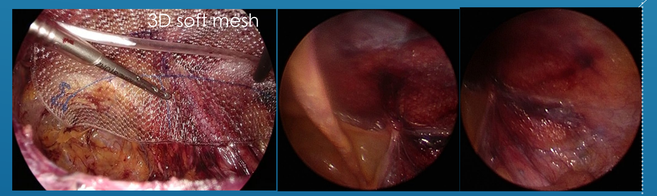


Fig. 7 The mesh is placed and its position is confirmed from the abdominal cavity side.

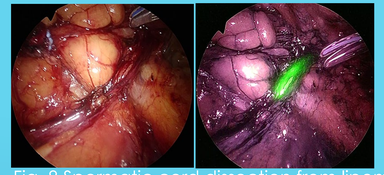


Fig. 8 Spermatic cord dissection from lipoma.

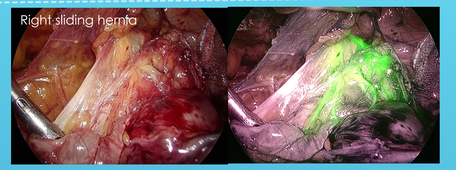


Fig. 9 Multiple lymphatic vessels in the spermatic cord



Fig. 10a Right combined type hernia

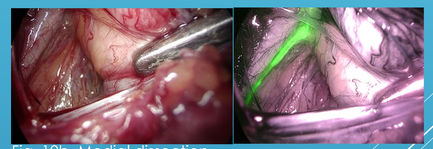


Fig. 10b Medial dissection

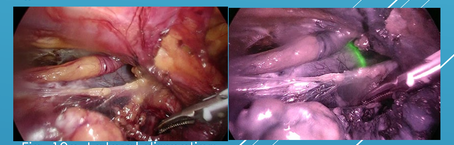


Fig. 10c Lateral dissection

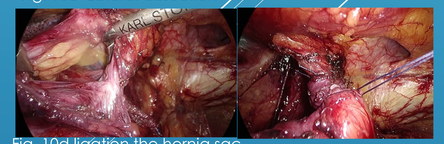


Fig. 10d ligation the hernia sac

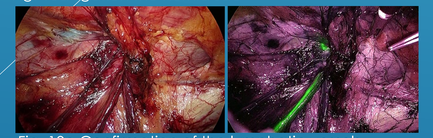


Fig. 10e Confirmation of the lymphatic vessels

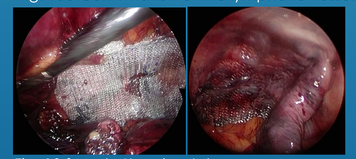


Fig. 10 f Mesh: Kugel patch