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Know-How to Protect Nerve in Avoidance of Post-operative Chronic Neuro-Origin Pain during Groin Hernia Repair Surgery

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Abstract

Background: Groin chronic pain after herniorrhaphy remains unclear partly related to undesired dithermy or missuture of groin nerves. How to prevent that is becoming a pressing issue.

Objective: To analysis potential causes of neuro-origin pain after surgery and to describe an improved technology via hernia-roof/hernia sac top (HST) approach in avoidance of excessive unessential procedures against nerve injury accidentally.

Methods: To describe the detailed procedures, and evaluate value of protection of nerve.

Results: HST approach reduces potential of chronic pain as expected.

Conclusion: HST was proved to be accessible and convenient way to reduce groin chronic neuro-origin pain during surgery.

Keywords: Chronic pain; Hernia sac top; Inguinal hernia; Nerve injury; Pre-peritoneal repair

patients who suffered relentless pain have to be recognized as a potential of nerve-related injury, which is often difficult to be detected with fingers or imaging examinations such as ultrasonography, abdominal wall computed tomography, etc. The effective therapy is to take pain killer or to perform surgery to remove the implant or to address and cut off the injured nerve. It really does matter, but is not the top priority. A wiser choice is to know how to protect the nerves during surgery rather than remedy therapy after surgery. Herein, authors would like to introduce a hernia-roof approach, an effective protection of involved nerves.

To the best of our knowledge, excessive surgical procedures or hot effects of electronic knife add to the potential risk of undesired nerve injury. Loophole-blocking of transversalis fascia is of crucial importance for groin hernia formation and its evolving. Bassini's per se string suture and high ligation of hernia sac neck, to narrow the inner ring, is key to success. Lichtenstein pins a mesh on the inner orifice. Preperitoneal approach aims to block outlet of hernia sac with a mesh or plug. Based on the root principle, authors now describe a convenient, feasible access below.

Materials and Methods

The simple technique named as "The Hernia Sac Top" (HST) pathway by using soft light flat mesh (10 cm × 15 cm in size, made in China) in inguinal hernioplasty may avoid or reduce the potential of nerve-related injury during surgery [1]. HST may also be suitable for various groin hernias. In addition, 3-D hernioplasty [2], which pins hernia sac, mesh, orifice-closing and outside cover of hernia into an irremovable unit, provides a stronger, more supportive and firm groin area with very minor fascia disoperation, by which the incidence of nerve injury is reduced to the maximum possibility accordingly. Authors are pleasure to share their string of successes [3].

The major procedure consists of three steps as below:

Foremost, authors expose hernia sac roof as previous description, and then open the hernia roof with a minor incision, which is enough to directly spread into a finger as a supportable point. Based on this procedure, the distal hernia sac hidden in the scrotum cavity will be easily stripped off in its position if the processing is performed along the right gap

Introduction

Discomfort of groin chronic pain after inguinal hernia repair occurs quite rarely but it is not easy to control its development despite of palliative drugs administrated. The sharp-like pain is unbearable mainly because it occurs irregularly after surgery, which has deeply influenced their routine life and work. As a matter of fact, it is often associated with iatrogenic nerve injury, which pushes both the patients and hernia specialists into a tough dilemma. The pressing issue has aroused broad focus.

The definitive cause of groin pain after surgery is still unclear. Generally, surgery-related pain is a temporary symptom, which is seldom beyond 3 months as the incision has been restructured at that moment for majority. The other

between the deep layer and the superficial layer of the transversalis fascia. Otherwise, the processing more likely leads to bleeding or unexpected nerve injury due to "adhesion" to adjacent tissue. With the same skills, the proximal hernia sac is stripped off until its outlet (the inner orifice) is exposed entirely. Authors usually place a drainage tube in the pelvic cavity as long as there are huge ascites found during surgery. After that, the opened huge hernia sac should be closed with suture. At first glance, it may take too much time, but on a second look, its merit is to keep the integrity of both the transversalis fascia and the sac itself, which also means normal tissue is reserved without any disruption.

Secondly, authors fix a flat mesh on the top of hernia sac. The mesh then was pushed into the peritoneal space in a usual way. The inner orifice was closed with continuous suture. During the period, the leash was also pinned on the thickened edge of the inner ring with suture. After that, the excessive leash and the excessive tissue of outside cover were cut-off. The transversalis fascia reconstruction ultimately ended with a "natural" look.

The last, another negative pressure drainage device was placed in the lowest position to avoid potential complications including scrotum hematoma or seroma or free fluid collection or effusion etc.

Discussion

After years of research, the outcome up, the pain down. The mix of traditional and improved techniques provides an accessible access to ensure the patients safety in avoidance of

chronic pain later. It appears to be nothing new for some hernia specialist, but authors believe that the protection of the nerve and its function during surgery is a crucial key. Authors recommend that their surgery based on the practice will make "hernioplasty" reliable and satisfactory without little discomfort of pain.

Conclusion

Of note, the HST pathway just eases the essential procedures into the preperitoneal space without damage to the natural anatomy. In conclusion, the authors' techniques provide a reliable protection of groin nerves via surgery simplification at the most possibility.

Declaration

All authors declare that they have no conflict of interests concerning the research.

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