Hernia –Repair when inguinal ligament is damaged

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Abstract

Patients with groin hernia operated on by conventional "tension" methods (without mesh implantation) are more vulnerable to recurrence. Recurrence is contributed by a cut and incorrect fixation of ligatures applied to comparable tissue structures, as well as anatomical and topographic changes in structures, including segmental damage to the inguinal ligament that occurred after multiple operations for recurrent hernias. Most frequently surgeon cuts or damages inguinal ligament when one has to deal with strangulated hernia or performs femoral hernia – repair from inguinal approach (Parlavechio method). In such circumstances recurrent herniation creates joint inguino – femoral defect. Proposed method of recovery of inguinal ligament using mesh technique is proved to be safe, easy to perform, with no recurrence during 3 years follow up.

Background: Recurrent hernias are one of the most common complication of hernioplasty surgery. When using conventional "tension" methods (without mesh implantation), the development of recurrence is contributed by a cut and incorrect fixation of ligatures applied to comparable tissue structures, as well as anatomical and topographic changes in structures, including segmental damage to the inguinal ligament that occurred after multiple operations for recurrent hernias. Repair for recurrent hernia when inguinal ligament was cut or damaged after the first intervention is quite complex. Most frequently surgeon cuts or damages inguinal ligament when one has to deal with strangulated hernia or performs femoral hernia – repair from inguinal approach (Parlavechio method). In such circumstances recurrent herniation creates joint inguino – femoral defect.

Aim: Surgical treatment of patients operated on multiple times by the conventional "tension" technique with damage to inguinal ligament.

Materials and methods: We have experience of treatment for 17 patients (10 females; 7 males) on whom original hernia repair was performed for strangulated inguinal (12 patients) and femoral (5 patients) hernias. Age varied between 43-78 years. 11 patients had history of hernia recurrence 3 times and the other 6 patients 2 times. In all cases inguinal ligament was completely cut and joint inguino-femoral defect appeared (Fig 1). All previous operations did not include "tension-free" techniques. We performed all hernia repairs in accordance to Lichtenstein method but added some details as the following inferior margin of the mesh was attached on pectineal (cooper's) ligament until medical edge of femoral vessels. After mesh in its course forms the "roof" for femoral vessels and immediately from their fraternal edge its inferior margin in fixed to lateral remnant of inguinal ligament up to superior – anterior iliac spine. Frequently lateral portion of inguinal ligament is drastically changed either and useless for mesh to be attached to. So, for enforcement of mesh fixation we used pubic bone medially end superior-anterior iliac spine- laterally (Fig 2). During preparations femoral sheath should be protected as much as possible for exclusion direct contact between the mesh and vessels.

Results: uneventful postoperative recovery. Follow up – 3 years, no recurrences. **(TCM-GMJ December 2022; 7 (4):P14-P15)**

Introduction

According to the literature data, the incidence of recurrence of inguinal hernias is 15-30% and 1-1.5% after performing tension and non-tension methods of surgery, respectively (1). Surgical treatment of repeatedly recurrent hernias, especially inguinal ones, is always associated with technical difficulties due to damage to the anatomical structures of the inguinal region (2). Pronounced anatomical and morphological changes in the structures of the inguinal region make it impossible to identify them (3), which sometimes leads to damage to the elements of the spermatic cord and inguinal ligament. In case of damage to the segment of the inguinal ligament, the inguinal and femoral canals become united. In such cases, any hernioplasty, even with the use of mesh materials, is fraught with the inevitable development of hernia recurrence (4). After analyzing such cases, we concluded that,

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first of all, it is necessary to restore the integrity of the inguinal ligament for the success of further manipulations. Restoration of the inguinal ligament was made possible by the introduction of mesh materials into hernioplasty practice. When creating an artificial inguinal ligament, we initially attached the mesh to the pubic bone and to the iliac crest, preliminarily twisting the mesh into a "tube". However, this technical method is difficult to implement and requires certain anatomical knowledge, orientation and time. Therefore, in subsequent operations, we simply overlapped the defect of the inguinal ligament by 1.5-2 cm with a mesh, which facilitated the technical side, reduced the time, though the long-term outcomes are to be confirmed. After the restoration of the inguinal ligament, one of the existing methods of hernia repair can be performed. We propose to perform tension-free hernia repair according to Gvenetadze, which considers the prevention of male infertility and recurrence of hernias, since with this plastic surgery the spermatic cord is completely isolated from the mesh and besides the posterior wall of the inguinal canal becomes three-fold represented by the transverse fascia, mesh and aponeurosis(5,6).

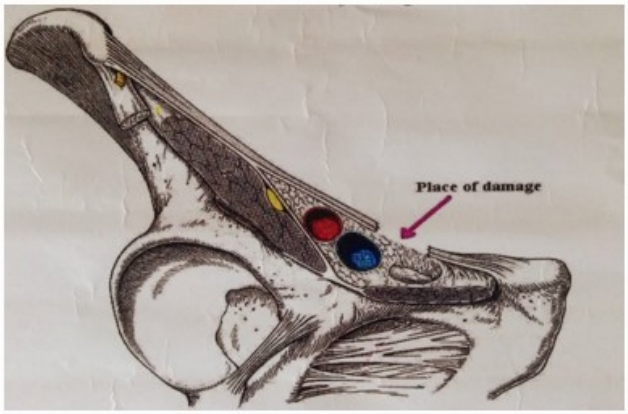

Fig. 1

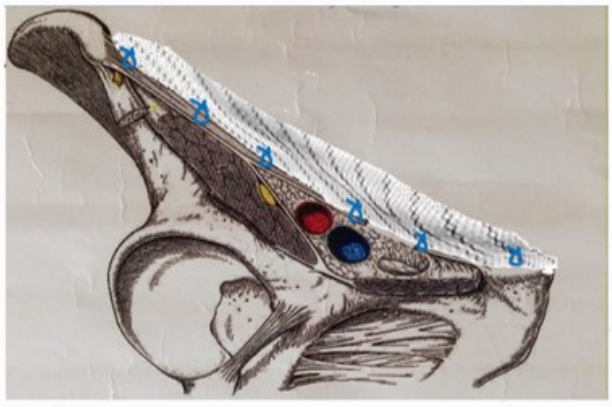

Fig. 2

Conclusion: Mesh attached to Cooper's ligament and using bone structures for enforcement of fixation gives good results in hernia repair for recurrences when inguinal ligament is cut or damaged.

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