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Laparoscopic inguinal hernia repair: Clinical features

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Abstract

Background: Since the early 1990s, laparoscopic techniques have share the scene on general surgery; the initial operations with laparoscopic inguinal herniorrhaphy were reported in 1992. Trans-abdominal preperitoneal (TAPP) inguinal herniorrhaphy starts with detailed laparoscopic exploration of both inguinal region and intraperitoneal area. Afterwards a second incision perform to the peritoneal layer to minimise the extent of hernia sac and maintain a shield for prosthetic mesh to lay on the other side of inguinal wall on preperitoneal space. The aim of this study was to demonstrate the rates of recurrence and postoperative complications of TAPP procedure.

Methods: In this retrospective study 21 cases of inguinal hernia that underwent TAPP procedure included. All cases operated by the same surgical team and with the same surgical technique.

Results: Within 4 weeks, 71.4% of the patients reportedly had completely recovered from surgery. By 8weeks, 100% reportedly had complete resolution of postoperative symptoms. No serious intraoperative complications occurred. No cases required conversion to open surgery. In 1 patient (%4.7) urinary retention has occurred as the only early postoperative complication. Two patients (%9.5) described numbness without pain in the distribution of the lateral femoral cutaneous nerve. One patient (%4.7) had mild testicular tenderness. None of these patients required pain medication or other interventions. On the follow-up time no recurrence has occurred.

Conclusion: In this study we demonstrate the very low rates of TAPP in respect of intra/postoperative complication—especially low rates of inguinal pain-, recurrence and improved time to return daily activities.

Keywords: TAPP, anatomically shaped mesh, groin pain

Introduction

Since the early 1990s, laparoscopic techniques have share the scene on general surgery; the initial operations with laparoscopic inguinal herniorrhaphy were reported in 1992. Trans-abdominal preperitoneal (TAPP) inguinal herniorrhaphy starts with detailed laparoscopic exploration of both inguinal region and intraperitoneal area. Afterwards a second incision perform to the peritoneal layer to minimise the extent of hernia sac and maintain a shield for prosthetic mesh to lay on the other side of inguinal wall on preperitoneal space ^[1, 2]. Laparoscopic inguinal herniorrhaphy often performed with placement of a special polypropylene mesh. Mechanical fixation of the mesh can be connected with postoperative chronic pain and on the contrary incidence of mesh migration may rise without fixation of prolene prostheses. The aim of this study was to demonstrate the rates of recurrence and postoperative complications of TAPP procedure.

Patients and Methods

In this retrospective study were included 21 cases of inguinal hernia that underwent for laparoscopic approach of inguinal hernia repair. All cases operated by the same surgical team and with the same surgical technique.

Surgical Procedure

An umbilical incision has made, a 10-mm trocar has located, and the peritoneal cavity has insufflated. A 5-mm 30° scope has set via the trocar, to maintain the abdominal area could be observed properly. Two lateral 5-mm trocars have set on the the umbilicus plane laterally towards rectus abdominis muscle on the level of midclavicular line. After the exploration of abdominal cavity, on the medical umbilical ligament notch, an incision has made to peritoneum and enlarged laterally to detract peritoneum from abdominal wall. During hernial sac dissection all vascular structures in addition to vas deferens and gonadal artery and veins secured.

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The spermatic cord has after skeletonized with a delicate dissection. After dissection and reduction of hernial content, the prosthetic mesh has applied on the extraperitoneal space (Polymesh 3D, Betatech Medical/Istanbul/Turkey) which fits the potential space. The mesh has folded down and addressed the abdominal cavity through 10 mm trocar. Then the mesh has unfolded above the peritoneal cavity and tacked on the abdominal. All skin incisions are then closed with 3-0 polypropylene sutures and appropriate wound dressing has applied.

Assesment of outcomes

The primary aim of the study was to assess the recurrence rate of hernias during a two year follow-up period; the secondary aims included assessment of short and long-term complications: hematoma and seroma formation, inflammation of the testis, chronic inguinal pain, numbness, reoperation, 30 days mortality and postoperative recovery time.

Results

All 21 patients (all of male) with median age of 44+/- 1.6 underwent Laparoscopic TAPP repair under general anesthesia. The median follow-up time was 6+/-1.1 months.

Within 1 week of surgery 76.1% of the patients had returned to nonstrenuous daily activities. By 4 weeks after surgery, 95.2% of the patients reported that they had returned to normal activity and 28.5% had returned to sports. By 6 weeks postoperatively, 85.7% had returned to strenuous daily activities. Within 4 weeks, 71.4% of the patients reportedly had completely recovered from surgery. By 8 weeks, 100% reportedly had complete resolution of postoperative symptoms.

No serious intraoperative complications occurred. No cases required conversion to open surgery. In 1 patient (% 4.7) urinary retention has occurred as the only early postoperative complication.

Two patients (% 9.5) described numbness without pain in the distribution of the lateral femoral cutaneous nerve. One patient (% 4.7) had mild testicular tenderness. None of these patients required pain medication or other interventions.

On the follow-up time no recurrence has occurred.

Discussion

Polypropylene meshes has extensive usage on repairing inguinal hernias and very beneficial on preventing recurrent disease when compared high-tensioned techniques of previous years ^[1, 4]. Even though the incidence of recurrent disease remains to be the most valued outcome parameter; postoperative complications like postoperative chronic pain which alters the quality of life after operation ^[1, 2, 4]. By this matter, lately, the focus on herniorrhaphy studies has changed and evaluated the extent of exploring postoperative complications such as postoperative chronic pain which effects the quality of life adversely ^[1, 4].

Laparoscopic surgical techniques of herniorrhaphy has shown a rapid and very distinct progression over last decade ^[5]. Especially outpatient cases of laparoscopic herniorrhaphy have increased vividly among selected cases on hernia centers globally (5). Longdrawn hospitalisation and increased rates of postoperative complications led the extensive usage of minimally invasive techniques on hernia surgery. Laparoscopic herniorrhaphy technique has advocated by the matters of decreased postoperative -especially on dimmer effect of open techniques on quality of life-complications which may suggest minimally invasive techniques' superiority on herniorrhaphy ^[5-7].

Laparoscopic inguinal hernia repair has several virtues as regards conventional open herniorrhaphy techniques. As, laparoscopic transabdominal preperitoneal (TAPP) and totally extraperitoneal (TEPP) techniques are often opted ^[8]; when it comes to comparison TAPP is simpler to learn and might be led a quicker process of learning curve. This is the main reason of the larger use of TAPP among general surgeons ^[8].

In this study we demonstrate the very low rates of TAPP in respect of intra/postoperative complication -especially low rates of inguinal pain-, recurrence and improved time to return daily activities.

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