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ABSTRACT

The aim of this study is to present a case of laparoscopic treatment of perineal hernia in a patient after abdominoperineal resection of the rectum. We present the case of a 63-year-old woman who was operated on laparoscopically with a mesh sewn in at the level of the sacrum, iliac vessels and pubic symphysis and covered with a peritoneal flap above the urinary bladder. A 63-year-old woman 4 years earlier underwent neoadjuvant treatment and laparoscopic abdominoperineal resection. The postoperative period was uncomplicated. Histological examination after operation was: adenocarcinoma ypT3N1aM0. The perineal wound healed without complication. 2 years after the above-mentioned surgery, the patient began to experience abdominal pain, especially when sitting down, and symptoms related to „sitting on a pillow”. Physical examination revealed a palpable bulge in the perineal wound. The tomographic examination revealed intestinal loops in the perineum and the presence of fatty tissue without any signs of cancer recurrence. 10 cm in diameter mesh was sewn at the level of the sacrum, iliac vessels and pubic symphysis. The abdominal symptoms disappeared completely, the so-called perineum cushion was entirely reduced. Laparoscopic treatment of perineal hernia may be a beneficial method for patients, but a demanding method for surgeons mainly due to the proximity of the iliac vessels.

KEY WORDS: perineal hernia, laparoscopy, abdominoperineal resectionWiad Lek. 2024;77(12):2554-2558. doi: 10.36740/WLek/196307 **ABBREVIATIONS**

APR: abdominoperineal resection of the rectum

PK: perineal hernia

INTRODUCTION

A perineal hernia is defined as the result of damage to the pelvic diaphragm resulting in the contents of the abdominal cavity bulging through the perineum. Yeoman described perineal hernia for the first time in 1939 [1]. One of the reasons for the formation of such a hernia is APR surgery due to diagnosed rectal cancer. Most often, loops of the small intestine move into the smaller pelvis, causing recurrent difficulties with the proper passage of food content, including full-blown obstruction, but also perineal pain, urination disorders and cosmetic defects. In rare cases, the hernia is completely asymptomatic. Predisposing factors include: previous APR surgery, pelvic exenteration surgery, perineal wound infection, previous hysterectomy, female gender, smoking, immunosuppression and previous radiochemotherapy [2, 3] The incidence of hernias is estimated at less than 1 percent after standard APR surgeries, while after ELAPE (extra-levator abdominal perineal resection) it is 2.6-26% [4]. Perhaps this is due to the greater tissue loss of the levator ani muscles compared to standard APR and higher frequency of perineal wound healing

disorders. The hernia appears 0.5 to 5 years after the primary surgery. The most frequently used diagnostic method is a physical examination confirmed by computed tomography or a contrast examination such as gastrointestinal passage.

It seems that surgical treatment is absolutely justified, especially in cases complicated by intestinal transit disorders. The number of treated cases in the world remains a problem [5]. There are so few of them that there are currently no established treatment priorities. Both the most commonly used perineal approach and the recently used laparoscopic approach have no prospective studies and, as in the case of surgical treatment of parastomal hernias after APR, there are no uniform guidelines.

AIM

The aim of this study is to present a case of laparoscopic treatment of perineal hernia in a patient after abdominoperineal resection of the rectum.

CASE REPORT

A 63-year-old woman was admitted to our Department for surgical treatment of perineal hernia 4 years after laparoscopic APR performed by author who now

performed perineal hernia repair. She underwent neoadjuvant treatment in Oncology Center. Laparoscopic APR surgery was performed in a standard manner. The postoperative period was uncomplicated. Histological examination was: adenocarcinoma ypT3N1aM0. The perineal wound healed by root growth. 2 years after the above-mentioned surgery, the patient began to experience abdominal pain, especially when sitting down, and symptoms related to "sitting on a pillow". Physical examination revealed a palpable bulge in the perineal wound. The patient did not present any symptoms of intestinal transit disorders. The tomographic examination revealed intestinal loops in the perineum and the presence of fatty tissue without any signs of cancer recurrence. Possibility of cancer metastasis in the left lung is now during observation at the Oncology Center. She has been through in the past hysterectomy due to cervical cancer. The operation began with the insertion of three trocars, including a camera and two working tools. The surgeon stood on the patient's right side, and the assistant held the camera from the patient's head. The abdominal cavity was inflated using a Hasson trocar. Two 5 mm working trocars were inserted in the right iliac fossa and right midabdomen. The intra-abdominal pressure was set at 12 mmHg. After placing the patient in the Trendelenburg position and rotating to the right side, the following items were found in the abdominal cavity: a few adhesions after surgery, including one of the loops of the small intestine and the greater omentum attached (diving) to the area of the perineal scar. There was no local recurrence of the cancer. The place after the removed uterus also showed no signs of cancer recurrence. Both adhesions were released with ligasure. In this way, the entire perineal wound was visualized from the abdominal cavity and the levator muscles, which were very distant from each other (approx. 9 cm). It was considered that suturing the pelvic muscles and sewing the mesh to the perineal scar would be extremely difficult due to the distance (depth) of the operating field. It was decided to close the entrance to the small pelvis using a macroporous mesh (decisions were made because macropore meshes only cause small seromas). A circle with a diameter of approximately 10 cm (Fig. 1) was cut out and sewn with several layers of sutures from the front to the scar of the removed uterus, to the side in the immediate vicinity of the iliac arteries and backward to the sacrum below the promontorium. The mesh was attached with 10 single non-absorbable sutures, then with a continuous non-absorbable V-lock zero suture (a barbed suture is a type of knotless surgical suture that has barbs on its surface) and was additionally attached to the uterine scar with single tackers. Then, due to the fact that it was

a single-layer mesh, i.e. adhesive, a peritoneal flap was removed from the suprapvesical area and covered with the mesh, securing it with single absorbable sutures. During the dissection of the peritoneal flap in the place after hysterectomy, the bladder wall was damaged. The lesion was treated with absorbable V-lock 2 zero suture. A Redon drain was left in the abdominal cavity and its end was placed over the mesh. It was removed on the 3rd day after surgery. A physical examination of the perineum revealed a small seroma. It was not punctured. It was left to resorb spontaneously. The patient was left in the hospital for 10 days. After 14 days, the catheter was removed from the urinary bladder. During the stay, an X-ray of the gastrointestinal tract with contrast was performed, which revealed the lowest loops of the small intestine, slightly below the promontorium. The patient returned home without any symptoms. 5 weeks later, the patient was called for a check-up and a contrast examination was performed, as before (Fig. 2). The intestines remained at the same level (pubic bone). The abdominal symptoms disappeared completely, the so-called perineum cushion was entirely reduced (the seroma was also absorbed).

DISCUSSION

Perineal hernias after abdomen perineal resection are very rare, but they constitute a serious challenge for surgeons, especially when treatment standards have not been developed. It seems that decisions about the type of surgery should be made based on one's own experience in general and laparoscopic surgery. Methods from the perineum are much more difficult because the muscles should be approached without tension, which seems to be the most important stage of the operation, and only then should the mesh be sewn on. Failure to follow this rule increases the possibility of hernia recurrence. In addition, there is a very weakened blood supply to the perineal area due to neoadjuvant radiotherapy [6]. Moreover, laparoscopic or open methods make it possible to release interloop adhesions, and this element of the operation is an advantage over the perineal approach especially in patients with symptoms of transit disorders.

Each of the currently used methods, whether open (laparotomy), from the perineum, or laparoscopically from the abdominal cavity, are currently recognized treatment methods [6-9]. The frequency of using lap vs perineal methods is comparable [10]. Various types of meshes are used for perineal hernia repair. The frequency of using meshes made of artificial material to biomeses is similar [10]. Unfortunately, postoperative recurrence is quite high. The recurrence rate was high-

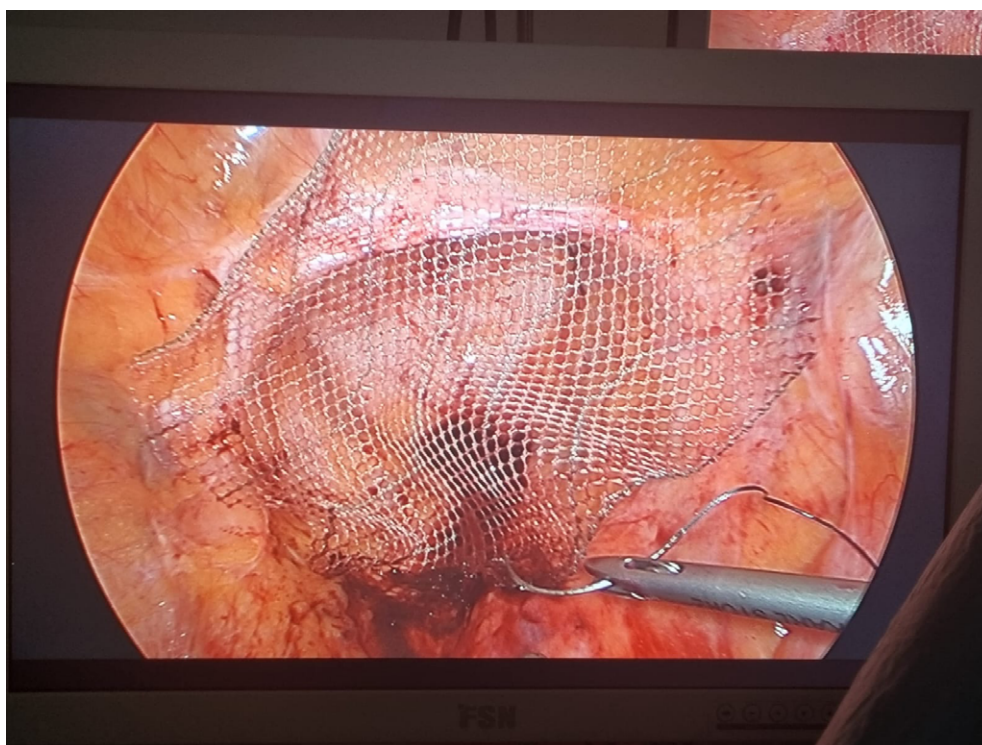


Fig. 1. Mesh in small pelvis.



Fig. 2. Contrast examination after 5 weeks

est with the use of biological mesh (40.4%) and the perineal approach (35.6%). The recurrence rate was lowest in the combined abdominal & perineal approach (0%), followed by the abdominal approach (8.8%) and the laparoscopic approach (11.8%) [10]. Surgeons place the mesh either directly in the perineal scar, or use the IPOM (double layer mesh) at the level of the coccyx and pubic bone, or, as in my patient's case, at the level of the sacrum and pubic bone. There are no statistical

studies in the literature comparing treatment results in terms of both the use of single- and double-layer meshes and their position in the small pelvis. This is probably due to the too small number of operated cases [11]. A similar situation occurs with the use of a peritoneal flap from the supravescical area covering a unilateral mesh. Some centers use this method, others do not. Centers that do not use the bladder flap in the case of single-layer (adhesive) meshes claim that they

do not observe complications such as mesh infection and/or intestinal fistulas [12]. Surgeons who operated using the flap did not observe any recurrences [13]. If the surgical field is infected, some surgeons use only a flap over the bladder without a mesh [14].

Laparoscopic methods as mini-invasive methods provide better visualization, less surgical trauma, faster recovery, less postoperative pain and lower risk of infections, especially if we have to remove a part of the intestine. In mini-invasive procedures, the robot certainly has an advantage due to the difficult conditions of attaching the mesh with sutures [8]. This significantly speeds up and facilitates the operation, especially in the immediate vicinity of large arteries and veins. Access from the perineum if it is impossible to pull the muscle

edges together would require assistance from a plastic surgeon and vascularized muscle grafts.

This is probably the first description of laparoscopic treatment of perineal hernia in our country.

CONCLUSIONS

APR is a commonly used treatment for colorectal cancer. Unfortunately, perineal trauma caused first by radiochemotherapy and then by extensive surgery may result in the development of a perineal hernia. The only form of treatment is surgery. It depends only on our experience which method we will use. Laparoscopic treatment of perineal hernia may be a beneficial method for patients, but a demanding method for surgeons.

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CONFLICT OF INTEREST

The Authors declare no conflict of interest

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