FEASIBILITY OF TAPP REPAIR FOR EPIGASTRIC AND SUBCOSTAL HERNIAS

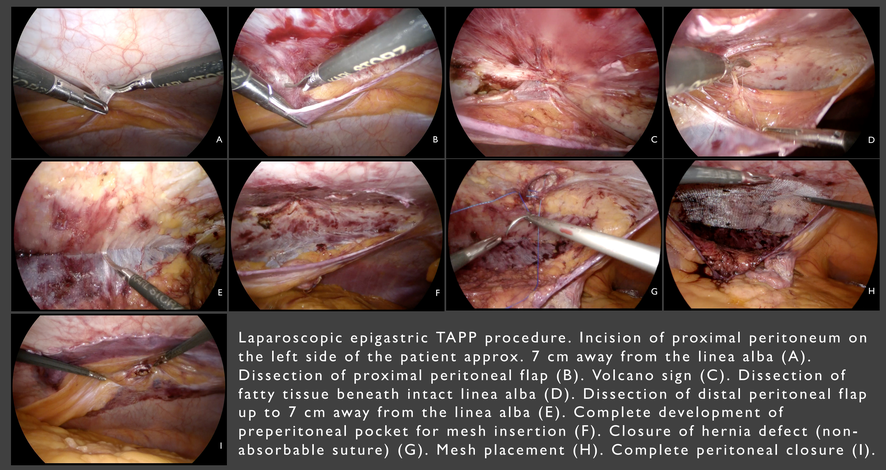
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INTRODUCTION

The prevalence of midline epigastric hernias in the adult population of Western countries is as high as 2%. Still the most frequently performed technique is the open anterior approach, mainly due to the possibility of making only a small incision of the skin and the relatively short time of the surgical procedure. However, a higher risk of hernia recurrence may be related to a lack of reinforcement of a defect with a synthetic material. In the case of the smallest umbilical hernias (1-2 cm) this risk is three times higher compared to techniques involving mesh implantation. Currently, most popular technique is still a laparoscopic intraperitoneal onlay mesh placement (IPOM), but this procedure has some limitations. The main drawback of the use of IPOM is a possible development of intraperitoneal adhesions, poor integration of some meshes into the abdominal wall, and pain associated with mesh fixation. An alternative solution is a laparoendoscopic mesh placement in the retromuscular space (enhanced totally extraperitoneal Rives Stoppa repair; eTEP-RS). It is a recently developed technique of ventral and incisional hernia repairs, gaining recognition and interest among surgeons worldwide. However, in this method, it is necessary to sacrifice the posterior lamina of the rectus abdominis sheath, which must be transected on both sides to obtain a large retromuscular space. This concomitant collateral damage may have some impact on the future stability of the trunk, so in the case of small and medium-sized umbilical hernias, the use of eTEP-RS may be controversial. According to the European Hernia Society (EHS) classification of abdominal hernias, a defect between 2 and 4 cm is defined as a medium-size hernia. The transfer of the transabdominal preperitoneal repair (TAPP) concept from the inguinal region to the midline epigastric area allowed for the development of a laparoscopic umbilical TAPP technique. This technique benefits from laparoscopic minimally invasive access, the benefits of hernia orifice closure as in the IPOM plus method, and posterior enhancement of the abdominal wall defect, but without the use of the retromuscular or intraperitoneal space, and easy placement of a large mesh despite relatively narrow hernia orifice. However, the lack of popularization of this technique so far may be related to the poor ergonomics of this procedure, the need to suture both the defect of abdominal wall and the peritoneum "on the ceiling", and an extended operation time, especially compared to other available open techniques.

PATIENTS & METHODS

- An analysis included 14 adult patients undergoing an elective surgery for the incisional subcostal or lateral epigastrium hernia between September 2019 and August 2021. Ninety days and one year after discharge, all operated patients provided information on the results of treatment via a telephone questionnaire. The primary outcome of a treatment was the presence of a recurrence. Patients who suspected a recurrence or felt a thickening/bulging in the wound were additionally subjected to physical examination by a doctor and sonographic examination. Additionally, the presence of pain was assessed as secondary treatment outcome, using a numerical scale.



Laparoscopic epigastric TAPP procedure. Incision of proximal peritoneum on the left side of the patient approx. 7 cm away from the linea alba (A). Dissection of proximal peritoneal flap (B). Volcano sign (C). Dissection of fatty tissue beneath intact linea alba (D). Dissection of distal peritoneal flap up to 7 cm away from the linea alba (E). Complete development of preperitoneal pocket for mesh insertion (F). Closure of hernia defect (non-absorbable suture) (G). Mesh placement (H). Complete peritoneal closure (I).

RESULTS

- The mean width of defect was 46.5±14 mm and length 64.2±23 mm. The operation time was 123.1±21.6 min. It was possible to place a large area of synthetic mesh 164.2 cm2. After 3- and 12-months follow-up, there was no recurrence nor bulging at the defect site. There was no chronic pain in the analyzed group of patients.

AIM

• Complications of open mesh repair for epigastric and subcostal hernias may lead to significant re-admissions and follow-up costs. Although laparoscopic intraperitoneal onlay mesh repair reduces infection rates, especially in overweight patients, it's controversial in these hernias, mainly due to potential adhesions' formation. Laparoscopic transabdominal preperitoneal technique (lap-TAPP) may address these issues, as it combines advantages of both open and laparoscopic approaches. The aim of this study is to present the initial results of lap-TAPP for epigastric and subcostal hernias in regard to its feasibility and complication rates.

CONCLUSIONS

TAPP technique in subcostal hernia repair allows for placement of a much larger mesh than an anterior approach surgery, and is closer to current recommendations, especially for patients with additional risk factors, i.e. obesity. TAPP allows a mesh to be introduced into preperitoneal space, allowing to avoid direct contact between mesh and intestines, providing wide mesh overlap above costal margin in subdiaphragmatic plane. Laparoscopic subcostal TAPP is feasible and safe, and may be considered as an alternative for open approach

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