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PeTEP Technique in Primary Ventral Hernia Repair Associated with Diastasis Recti (with video)

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Rezumat

Tehnica robotică total extraperitoneală în repararea herniei ventrale primare asociate cu distazis al drepților abdominali

În această prezentare de caz, se detaliază o abordare inovatoare în repararea herniei ventrale primare asociate cu distazis al drepților abdominali prin tehnica robotică total extraperitoneală (PeTEP), aşa cum a fost publicată recent de Dr. Hector Valenzuela printr-o intervenție laparoscopică. Avantajele abordului robotic includ precizia disecției, menținerea integrității peritoneului în condiții de fragilitate crescută, confort sporit pe parcursul operației, şi, ca urmare, o reproducibilitate îmbunătățită. Tehnica de restaurare a liniei albe şi plasarea protezei parietale în afara cavității peritoneale fără secționarea structurilor fasciale este un progres semnificativ în chirurgia minim invazivă a herniilor ventrale.

Cuvinte cheie: PeTEP, repararea herniei preperitoneale, repararea herniei ventrale preperitoneale, repararea distazisului al drepților abdominali prin chirurgia minim invazivă

Abstract

We present a new approach in the repair of primary ventral hernia associated with diastasis recti. This involves the totally extraperitoneal robotic approach, recently published by Dr. Hector Valenzuela, performing a laparoscopic surgery. The advantages of robot-assisted surgery include the precision of dissection and preservation of the peritoneum's integrity, even under conditions of high fragility, enhanced intraoperative comfort, and as a result, increased reproducibility. We believe that restoring the linea alba and placing the parietal prosthesis outside the peritoneal cavity, in addition to eTEP, without cutting any fascial structures, represents a step forward in the evolution of minimally invasive surgery for ventral hernias.

Keywords: PeTEP, preperitoneal hernia repair, preperitoneal ventral hernia repair, MIS diastasis recti repair

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Introduction

The laparoscopic or robotic surgical treatment of umbilical hernias, whether associated with diastasis recti or not, has often been criticized as being excessive relative to the lesion itself. The most modern minimally invasive procedures in the surgical treatment of umbilical hernias, with or without associated diastasis recti, are the retromuscular techniques: TARUP and eTEP, which are also criticized as being "overkill." The TAPP approach, even though it meets the requirement of placing the parietal prosthesis outside the peritoneal cavity in the preperitoneal space, is not easily reproducible, especially because the parietal peritoneum is very thin and fragile in the upper half of the abdominal wall, making it easily torn during paramedian dissection.

We consider that the total extraperitoneal procedure (robotic-assisted pre-peritoneal eTEP – PeTEP) allows for the preservation of the retromuscular space (Rives-Stoppa), ensuring efficiency in the reconstruction of the linea alba with preperitoneal parietal prosthesis, while also providing comfort to the operator and increasing the reproducibility of the surgery.

Case Report

A 48-year-old overweight male with a BMI of 29.5, presenting with a primary umbilical hernia measuring 6 cm in diameter (W3) (1), against the backdrop of significant diastasis, measured ultrasonographically at 6 cm supraumbilical (W3) (reference EHS diastasis classification).

The surgical plan is to reconstruct the linea alba by closing the hernia defect and performing a plication of the widened linea alba, and reinforcing the abdominal wall with a polypropylene mesh placed preperitoneally. For this, we present the robotic PeTEP surgery, which was published in its laparoscopic form by Dr. Hector Valenzuela (2,3). The uniqueness lies in the direct trocar-entry approach, while the surgical robot ensures fine preperitoneal dissection while preserving the integrity of the parietal peritoneum.

Surgical Technique

Patient Positioning

The operating table is flexed, positioning the patient in hyper-extension of the trunk. This avoids conflict between the patient's thighs and the robot's arms.

Time 1. Trocar Insertion.

The Retzius space is accessed with an optical trocar placed on the midline just above the pubic area. Connecting the insufflator, set to 15 mmHg with maximum insufflation flow, assists in dissecting this loose space.

This is followed by blunt dissection of the preperitoneal space, gently, with the camera, in both the right and left inguinal regions, and placement of the working trocars just lateral to the inferior epigastric vessels. The robot is then docked.

Time 2. Ascending preperitoneal dissection along the midline, anterior to the umbilical ligament fat (in the lower level) and the round ligament of the liver (in the upper level).

Through extensive preperitoneal dissection, even if there is an accidental opening of the peritoneum, the working space will be maintained without collapsing.

The hernia will be reduced. The preperitoneal dissection is extended laterally, left-right, with the dissector making its way into the space anterior to the transversalis fascia, cutting the fine adhesions that connect the fascia to the posterior sheath of the rectus abdominis muscle. The goal is to obtain a dissected surface of about 4-5 cm posterior to each rectus abdominis muscle.

Time 3. Measurement of the defect (hernia and diastasis).

Time 4. Suturing of peritoneal defects (if they exist) with absorbable sutures, and reconstruction of the linea alba with non-absorbable self-locking sutures.

Time 5. Placement of the prosthesis, positioned on the muscle ceiling. The mesh can be fixed at a few points with acrylic adhesive. (optional)

Time 6. Slow exsufflation. Suture of the skin.

Conclusion

The robotic PeTEP approach offers the possibility for an effective and robust repair of midline hernias, with or without associated diastasis recti. The precision of dissection afforded by the surgical robot with a thin peritoneum allows for the

placement of the prosthesis outside the peritoneal cavity, while also preserving the retro-muscular space, thus avoiding an overzealous approach.

Conflicts of Interest

The authors declared no potential conflicts of interest.

Informed Consent

The patient included in this study has provided informed consent.

References

1. Muysoms FE, Miserez M, Berrevoet F, Campanelli G, Champault GG, Chelala E, et al. Classification of primary and incisional abdominal wall hernias. Hernia. 2009;13(4):407-414.
2. Arias-Espinosa L, Claus CM, Malcher F, Valenzuela Alpuche HA. Robotic preperitoneal extended totally extraperitoneal (R-PeTEP) technique description for ventral hernia repair: preliminary results. Updates Surg. 2024;76(7):2715-2722.
3. Valenzuela Alpuche HA, Torres FR, Saucedo González JP. Early results of eTEP access surgery with preperitoneal repair of primary midline ventral hernias and diastasis recti. A 33 patient case series of "PeTEP." Surg Endosc. 2024;38(6): 3204-3211.