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VIDEO FORUM

Laparoscopic sacrocolpopexy plus ventral rectopexy for multicompartment pelvic organ prolapse

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Introduction

Treatment of pelvic floor disorders plays an important role in the improvement of women's quality of life, since 25% of female population over 20 suffers from at least one pelvic floor defect [1]. The presence of two or more disorders can be found in 10–55% of patients with pelvic organ prolapse (POP). Management of POP with concomitant obstructed defecation syndrome is still a challenge since this condition can often be found associated with rectal prolapse [2].

Abdominal sacrocolpopexy has been considered for many years the gold standard technique to treat female anterior and apical prolapse, notwithstanding all the different surgical options; since it is compared to a wide range of vaginal approaches, it makes possible superior outcomes in terms of objective success and recurrence rates [3]. On the other hand, a large variety of surgical procedures to correct rectal prolapse have been developed. Laparoscopic ventral mesh rectopexy has gained increasing acceptance as an effective technique to correct rectal prolapse, with reduced risk of nerve damage and consequent post-operative constipation and is now considered the procedure of choice in Europe [4]. Despite the evidence of multi-organ involvement in POP, nowadays each organ prolapse is treated by a single specialist, resulting in the lack of acknowledgement of important symptoms and findings and lack of awareness of treatments available, often leading to suboptimal outcomes.

For these reasons, in recent years, several authors have underlined that a multidisciplinary approach to POP may improve surgical outcomes and patient symptoms. As a result, few studies describing sacrocolpopexy with ventral rectopexy as an effective combination of procedures for multicompartment POP, carried out by open, laparoscopic or robotic approach, have been published [5, 6].

One of the possible ways of combining ventral rectopexy with sacrocolpopexy is demonstrated in the attached video.

The patient was a 75-year-old post-menopausal woman, with multicompartment POP. She had previously had a total abdominal hysterectomy and complained since of vaginal bulge and obstructed defecation syndrome. Urogynaecological examination showed a pelvic organ prolapse quantification system (POP-Q-) III degree of prolapse (POP-Q Aa 0 Ba + 1 Ap-1 Bp -2 tvl 9 D -3 gh 4 pb 2).

Female sexual distress scale (FSDS), Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ-12) and Wexner questionnaires were recorded before and after surgery. An improvement of the three scores was recorded as shown in Table 1.

She also had a pre-operative urodynamic investigation reporting normal values of filling cystometry and pressure-flow study. Subsequent pelvic and gynaecological ultrasound and defecography showed the presence of rectocele and an internal rectal prolapse.

Therefore, a total correction of multicompartment POP, by laparoscopic sacrocolpopexy plus ventral rectopexy, was performed.

Surgical technique

Access to peritoneum is by induction of pneumoperitoneum by transumbilical open entry followed by the placement of a 10-mm trocar; then three 5-mm ancillary ports were set. Once pneumoperitoneum achieved (12 mmHg), a careful

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Table 1 Pre and post-operative questionnarie score

Questionnaires	Pre-operative score	Post-operative score
FSDS	37.0	15.0
PISQ-12	32.0	17.0
Wexner constipation	14.0	2.0

inspection of the entire abdominal cavity performed as the first surgical step.

The longitudinal vertebral ligament, covering the sacral promontory, exposed, proceeding parallel to the right common iliac artery. Special care is taken not to damage the right hypogastric nerve at the pelvic inlet. Then the peritoneal incision is extended along the right pelvic wall up to the pouch of Douglas which is then incised between the left and right uterosacral ligaments, and the rectovaginal space is dissected along the posterior vaginal wall. The limits of this dissection are the perineal body inferiorly and rectovaginal ligaments laterally. An adequately shaped large-pore, monofilament, titanized polypropylene (Titanized mesh implants Timesh® PFM medical) is placed and fixed with 3–0 non-absorbable sutures (Ethibond Excel® Polyester Suture) to the anterior side of the rectum on its sero-muscular layer. The first stitch has to be placed in the most distal part of the anterior aspect of the rectum, close to the perineal body. Further sutures fix the mesh to the lateral seromuscular border of the rectum, proximal and distal to the incised pouch of Douglas (Fig. 1).

The vesicovaginal space is now completely prepared. The dissection of this space creates a triangular-shaped vesicovaginal space with the apex at the dorsal end of the bladder trigone and the lateral limits are represented by the superficial layer of the vesicouterine ligaments formed by the descending branch of the uterine artery, the superficial vesical vein (branch of the superficial uterine vein), and the cervicovesical vessels. A second synthetic titanized mesh fitted to cover the entire dissection area is inserted and fixed to the anterior vaginal wall with five no. 3–0 non-absorbable sutures. The first suture is placed centrally on the most ventral point of the dissected space, while two sutures per side are placed on the most lateral edges of the same space. Three more sutures are located centrally, in vaginal apex. (Fig. 2).

The first mesh (the rectal one) is now threaded upwards to the promontory to carry out the ventral rectopexy, and it is fixed to the longitudinal vertebral ligament previously exposed with one no. 0 non-absorbable suture. This procedure is done under visual and palpation control by the surgeon, by checking the degree of tension of the mesh which can be deduced by the morphology of the mesh and its resistance against pressure applied by a laparoscopic instrument.

The anterior mesh is then threaded up towards the promontory to fashion the sacrocolpopexy, with the lowest amount of tension necessary to form a linear connection between the most caudal mesh fixation point over the anterior vaginal wall and the promontory; another no.0 non-absorbable suture is used for sacral promontory fixation of the cervicovaginal mesh. (Fig. 3).

The operation is completed by reperitonealization of the pouch of Douglas, using adsorbable sutures, over the mesh.

The patient was discharged 3 days after surgery. Twelve-month follow-up showed optimal anatomical results with a normal vaginal profile and improved scores on the FSDS, PISQ-12 and Wexner questionnaires.

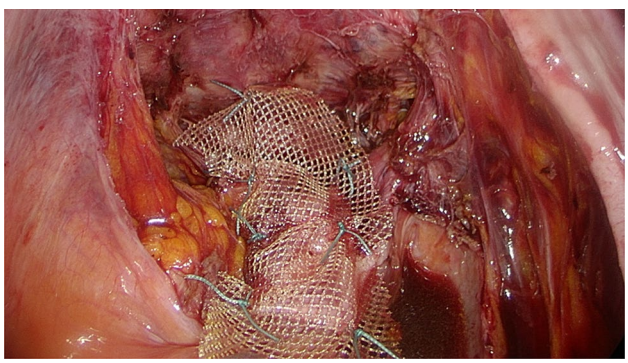

Fig. 1 Ventral rectal mesh

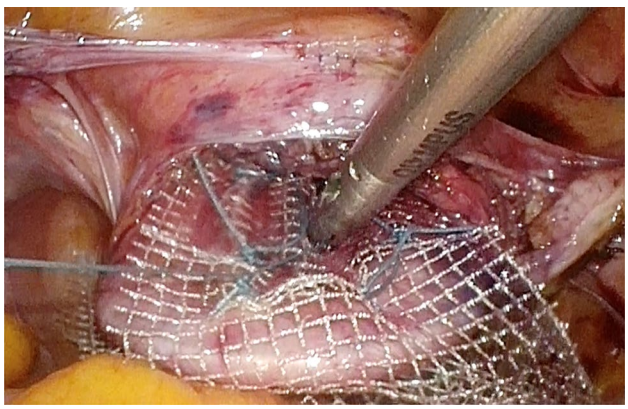

Fig. 2 Anterior vaginal mesh

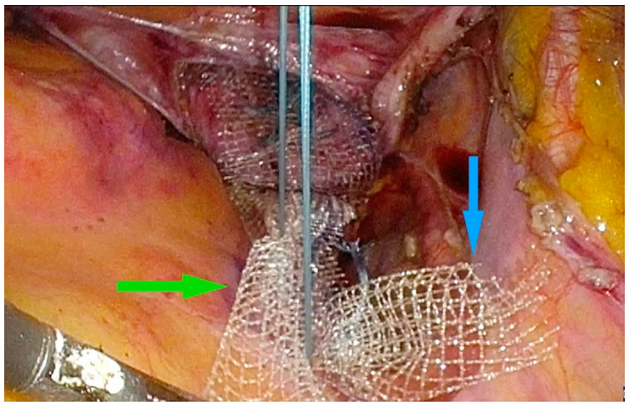

Fig. 3 Meshes fixation: The green arrow shows the vaginal mesh; the blue arrow points the rectal mesh

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval All procedures performed in studies involving humans were in accordance with ethical standards of the institutional research committee. Informed consent was obtained from the patient.

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