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ENDOSCOPIC CYSTOCELE SURGERY: LATERAL REPAIR WITH POLYPROPYLENE MESH

Synopsis of Video: The method of the lateral repair with mesh inlay is demonstrated in this video sequence. We affirm evidence for the application of that technique.

Hypothesis / aims of study: Paravaginal defects result from a rupture of the arcus tendineus and the adjacent fascia. This type of a cystocele is associated with sustained rugae and elapsed sulci. Lateral repair is an established operative approach for the treatment of paravaginal defects. Only a few clinics perform the laparoscopic approach although some advantages have been described compared to open or vaginal surgery. The use of meshes has not been yet reported for the lateral repair. We here present a video sequence of our modified laparoscopic approach with interposition of a polypropylene-mesh. This approach has been applied successfully in 55 patients during the last three years. With our modifications the lateral repair can be performed within 45 minutes.

Study design, materials and methods: The patient is placed in a dorsal lithotomy position with both arms tucked to her side. A 16 F catheter with a 5 ml balloon tip is inserted into the bladder and attached to a continuous drainage. Operation is done under general anaesthesia.
After routinely position of four access ports (10 mm at the umbilicus, 12 mm superior to the symphysis, two 5 mm ports medial and inferior of the right and left sup. ant. iliac spine) the 12 mm port is retracted outside of the peritoneum. The remaining peritoneal orifice is enlarged to 15 mm and used later as trans-peritoneal entrance for the laparoscope. The 12 mm port is used to detect the pubic ramus. Insufflation with CO2 via the 12 mm port and blunt dissection with the port itself helps to prepare the retropubic space. Both lateral ports are placed under visual control into the space of Retzius. The pubic symphysis and bladder neck are identified in the midline. The Cooper's ligament is prepared to its complete length up to the oblique muscle. Lateral defects are visualized along the pelvic sidewall using a blunt instrument. The surgeon's left hand is inserted into the vagina and elevates the anterior vaginal wall with the adjacent pubocervical fascia to the physiological position. The assistant supports the visualization of the pubocervical fascia laparoscopically from the space of Retzius. A polypropylene mesh of 6 to 4 cm is inserted and placed to cover the defect. A continuous suture is performed using a 2-0 non-resorabable suture of 45 cm length with attached needle starting at the right Cooper's ligament as lateral as possible and ending towards the urethrovesical junction. In order to avoid a displacement of the mesh a fixation with one to two stitches is useful. In general four to six stitches at the ligament and fascia respectively are used for a stable tissue approximation. Suture is completed by the use of an intracorporal knot-tying technique. For the left side the suture procedure is repeated basically, but in general we start medial at the urethrovesical junction and end lateral.

Results: The success rate of our laparoscopic approach is correlating to open or vaginal surgery (>90 % success rate). We had three intra-operative bladder lesions and no postoperative complication (bleeding, ileus, re-prolapse, mesh erosion). Additionally to the magnification advantages of laparoscopy, a high acceptance of the patients is found.

Interpretation of results: The laparoscopic preparation of the Retzius space is associated with an elevated risk of bladder injury. Lesions healed without problems after intraoperative suture. Meshes support the long time stability of lateral repair by providing a matrix for fibrocytes.

Concluding message: Laparoscopic lateral repair is a good alternative to the open or vaginal approach. The use of a polypropylene mesh elevates the long term stability of the repair. Operation time and costs are not influenced negatively. This video intends to simplify the laparoscopic approach in order to make it available to a broader range.

Specify source of funding or grant	**No funding, no grant**
Is this a clinical trial?	**Yes**
Is this study registered in a public clinical trials registry?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**No**
This study did not require eithics committee approval because	**Improvement of an already existing operation method.**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**