



Rouhier's colpocleisis with concomitant vaginal hysterectomy: an instructive video for female pelvic surgeons

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Abstract

Introduction and hypothesis The treatment of pelvic organ prolapse (POP) in elderly women can be challenging. The vaginal operation known as colpocleisis, the total occlusion of the urogenital hiatus, with concomitant hysterectomy was described by Rouhier and represents a safe, time-saving, and reproducible procedure in the case of POP associated with uterine pathological conditions. It is suitable for elderly women who do not require preservation of coital function. The objective of this video is to provide anatomical illustrations and a precise description of the surgical steps.

Methods We present the case of a 62-year-old woman who was referred for hysterectomy in the context of metastatic endometrial cancer. She complained about vaginal bulge and was diagnosed with a POP-Q stage 4 genital prolapse on physical examination. Due to important comorbidities such as arterial hypertension, obesity, and three-site metastatic disease, we suggested a colpocleisis with concomitant vaginal hysterectomy. This approach was intended to treat the prolapse and perform a palliative surgery to alleviate abnormal uterine bleeding.

Results This video illustrates the different surgical steps of a colpohysterectomy according to Rouhier. No intraoperative complications occurred and the postoperative follow-up was uneventful. The patient was fully satisfied and POP has not recurred after a 17-month follow-up.

Conclusions Colpocleisis should remain an exceptional approach, but could be offered to sexually inactive women of advanced age after thorough discussion and patient consent. If a hysterectomy is necessary, Rouhier's operation offers a time-saving, reproducible, and efficient option for women with symptomatic POP who do not desire future vaginal intercourse.

Keywords Colpocleisis · Vaginal hysterectomy · Pelvic organ prolapse · Rouhier

Introduction

Pelvic organ prolapse (POP), the herniation of the pelvic organs to the vaginal walls and sometimes beyond the introitus, is a common condition and is diagnosed in over

40% of women older than 50 years [1]. The lifetime risk of surgery for pelvic organ prolapse (POP) is 12.6% [2, 3] and as the population of women over 65 years is expected to double by 2050, it is predicted that surgery rates for POP are to increase by 48% [4, 5]. Colpocleisis is an umbrella term designating a set of operations for the treatment of pelvic organ prolapse (POP) that totally occlude the urogenital hiatus. As a consequence of this intervention, the patient will be incapable of a coitus which makes patient selection and informed consent particularly important. There are several advantages associated with the procedure and recent series have shown that colpocleisis for POP is apparently successful in nearly 100% of patients [6]. Compared to other pelvic reconstructive surgery techniques associated with hysterectomy, it is less invasive, easier to tolerate and carries a lower risk of complications. Second, shorter operative time reduces the risk associated with potential anesthesiology related complications.

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Third, the procedure is technically straightforward, easy to perform and less complex compared to other time-consuming site-specific surgical repairs commonly used to treat POP.

Materials and methods

We present the case of a 62-year-old woman who was referred for a hysterectomy in a context of metastatic endometrial cancer (pulmonary, bones and liver metastasis). She presented with heavy postmenopausal bleeding and complained about a vaginal bulge. On physical examination, we found a POP-Q stage-4 genital prolapse. The estimated weight of the uterus was 250 g at clinical examination. She has not been sexually active for more than 10 years. Due to important comorbidities, we suggested a colpocleisis with concomitant vaginal hysterectomy to treat both uterine bleeding and genital prolapse. After thorough patient information and discussion, explaining the advantages and anatomic consequences with an emphasis on impossible definitive coital function, she gave informed consent. The video illustrates the different surgical steps of the vaginal colpoproctectomy according to Rouhier.

Surgical steps

1. Removal of the anterior and posterior epithelium of the vagina: the intervention starts with a circumscribing colpotomy just below the bladder reflection [7]. The vagina is divided by two lateral incisions and the vaginal epithelium is removed by using the avascular dissection plane between the vaginal epithelium and the new deep endopelvic fascia created artificially by dissection, which consists mainly of connective tissue.
2. Dissection of the utero-vesical space: the cervix is then retracted downward and tissues, including the supravaginal septum and the bladder, are elevated using forceps in the midline [7]. The supravaginal septum is identified and incised with the tips of curved scissors. This incision exposes the utero-vesical space, the proper avascular cleavage plane to gain access to the anterior peritoneum. A Breisky retractor can be placed into the vesico-uterine space to elevate the bladder and expose the anterior peritoneal fold.
3. Opening of the rectouterine pouch: the posterior colpotomy is made at the level where the sacro-uterine ligaments join the cervix and by stretching the subvaginal tissue and the peritoneum, these tissues will bulge outward toward the surgeon. The posterior peritoneum is opened with curved scissors to admit an examining finger, and subsequently a long-bladed weighted speculum.
4. Treatment of the sacro-uterine ligaments and the paracervical tissue: for the next step, we chose to use a thermofusion clamp (vessel sealer) to treat the paracervical tissue. The hemostasis of the cervico-vaginal pedicles should be performed below and medial to the loop of the uterine artery to avoid ureteral damage. Each successive hemostatic step should be performed in direct contact with the cervix [8].
5. Hemostasis of the uterine arteries: at this point in the procedure, only in a non-oncological setting can cervical amputation be performed to facilitate the mobilization of the uterus. A gauze for vaginal packing is placed in the abdominal cavity to protect the loops of the bowel. The anterior peritoneal fold is now opened with curved scissors and the Breisky retractor is replaced into the peritoneal opening with the aim of avoiding any injuries to the bladder or the ureter. The curve of the thermofusion clamp is applied to the curve of the uterine wall in a side-to-side way, following the anatomy line. Slight medial rotation on the isthmus is applied, whereas the subvesical retractor is tented laterally to keep the ureter at a safe distance. The clamp is applied to the uterine pedicle in the middle of the vaginal canal to avoid vaginal burns [8].
6. Bilateral adnexectomy: initially, the thermofusion clamp is applied in a single or in multiple steps at the level of the utero-ovarian ligament insertion with the convex side conforming to the uterine anatomy. The adnexectomy is carried out using a ligature device (e.g., EndoLoop®) or using a vessel sealer, depending on the upper vaginal access to the infundibulopelvic pedicles. The key element of this step is to allow hemostasis of the pedicle without traction. For the security of the procedure, the surgeon should be able to see the tip of the instruments and be sure that the intestine is at a safe distance [8]. Peritoneal closure of the cul-de-sac and peritoneal cavity is performed using a small caliber, absorbable running suture.
7. Obliterating the rectovesical space: the suture lines may be continuous or interrupted. Absorbable sutures are placed from the pubovesical fascia anteriorly to the prerectal fascia posteriorly over the portion of the vaginal vault. After several rows of sutures have been completed, the vaginal vault is totally inverted, and the pubovesical fascia in addition to the prerectal fascia are plicated. A final row of 0 caliber absorbable sutures is placed between the remaining vaginal mucosa anteriorly and posteriorly.
8. Posterior colpoproctorrhaphy (optional): an additional introital occlusion can be performed to further bolster the operation. A high colpoproctorrhaphy may

satisfy this recommendation, which includes removal of an inverted triangle of perineal and vestibular skin. This technique is particularly useful when a dilated introitus is present.

Conclusion

If a hysterectomy is necessary, Rouhier's operation offers a simple, fast, and efficient option for the treatment of POP. We believe that colpocleisis with hysterectomy is a suitable alternative for women with specific needs and that pelvic surgeons should be aware of its existence and principles and include it in the repertoire of surgical POP treatment techniques.

Compliance with ethical standards

Conflicts of interest None.

Consent Written informed consent was obtained from the patient for publication of this video article and any accompanying images.

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