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VAGINAL HYSTERECTOMY: INDICATIONS AND SURGICAL TECHNIQUES

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Abstract: Vaginal hysterectomy (VH) is considered the preferred surgical approach for the treatment of benign gynecological conditions due to its association with lower morbidity, shorter operating time, rapid recovery, and good cosmetic results. Despite these advantages, its use has declined in clinical practice, being replaced by laparoscopic approaches, partly due to the lack of specific training in vaginal surgery. This narrative review analyzes the main indications, contraindications, fundamental and adjuvant surgical techniques, as well as the innovations that have expanded its possibilities of application. It is concluded that VCS is safe and effective, even in cases considered challenging, provided it is performed by experienced surgeons and with appropriate patient selection. It is essential to revitalize the teaching of VCS in medical residency programs in order to preserve this minimally invasive and clinically advantageous option for the management of benign uterine diseases.
Keywords: Vaginal hysterectomy; Gynecological surgery; Surgical techniques; Uterine prolapse; Uterine myoma; Minimally invasive procedure.

INTRODUCTION

Hysterectomy, defined as the surgical removal of the uterus, is one of the most common gynecological procedures performed worldwide (Pickett et al., 2024). There are three main approaches for performing this procedure: abdominal, laparoscopic, and vaginal (Lenfant et al., 2021). The choice of surgical approach depends on multiple factors, including the patient's clinical condition, the size and mobility of the uterus, the surgeon's experience, and associated comorbidities (Köhler et al., 2019; Pickett et al., 2024).

Several gynecological societies recommend vaginal hysterectomy (VH) as the preferred approach for treating benign conditions, whenever technically feasible (Len-

fant et al., 2021). This preference is based on consistent evidence demonstrating the advantages of VV compared to abdominal and laparoscopic approaches, including shorter operating time, less blood loss, reduced postoperative pain, faster recovery, and better cosmetic results (Lenfant et al., 2021; Köhler et al., 2019). Despite its proven benefits, VCS has been underutilized, partly due to the growing popularity of laparoscopic techniques and decreased training in vaginal surgery (Lenfant et al., 2021; Pickett et al., 2024).

This review aims to consolidate current evidence on the indications for vaginal hysterectomy, describe fundamental and adjuvant surgical techniques, and discuss the challenges and strategies for optimizing patient selection and surgical outcomes.

METHODOLOGY

This article is a narrative review designed to summarize and analyze the scientific literature on the indications, techniques, and outcomes of vaginal hysterectomy. A bibliographic search was conducted in the PubMed database using the Medical Subject Headings (MeSH) descriptors: "Hysterectomy, Vaginal," "Surgery," and "Techniques." The search strategy included combining these terms with the Boolean operators AND and OR. The selection criteria focused on systematic reviews, cohort studies, and technical review articles that addressed the indications and procedures for vaginal hysterectomy. Studies focusing exclusively on hysterectomy by other routes or on malignant pathologies were excluded. The selection of articles was performed in two stages: analysis of titles and abstracts, followed by full reading of the relevant texts for the extraction and descriptive consolidation of information.

RESULTS

The results of the literature reviewed detail the main indications for VH, contraindications, stages of the surgical technique, and associated innovations.

INDICATIONS FOR VAGINAL HYSTERECTOMY

VVH is primarily indicated for the treatment of benign gynecological diseases (Pickett et al., 2024). The most common indication is pelvic organ prolapse, especially uterine prolapse (Köhler et al., 2019; Lenfant et al., 2021). Other frequent indications include uterine leiomyomas (fibroids), abnormal uterine bleeding, adenomyosis, and chronic pelvic pain (Pickett et al., 2024; Lenfant et al., 2021). The decision to use the vaginal route depends on a careful assessment of factors such as uterine size (usually less than 12-16 weeks of gestation or 280 grams), uterine mobility, vaginal accessibility, and the absence of previous complex pelvic surgeries (Lenfant et al., 2021; Pickett et al., 2024).

CONTRAINDICATIONS AND DIFFICULTY FACTORS

Contraindications for HV are mostly relative. An absolute contraindication is suspected or confirmed gynecological malignancy, which requires specific surgical staging (Pickett et al., 2024). Factors that may increase technical difficulty and lead to the choice of another route include: large uterus, dense pelvic adhesions (due to severe endometriosis or previous surgeries), narrow pelvis, and history of multiple cesarean sections (Köhler et al., 2019; Pickett et al., 2024).

FUNDAMENTAL SURGICAL TECHNIQUE

The standard HV procedure follows a well--established sequence of steps (Pickett et al., 2024):

1. **Positioning and Preparation:** The patient is placed in the dorsal lithotomy position.
2. **Surgical Access:** A circumferential incision is made around the cervix (cervical circumcision).
3. **Dissection and Entry into the Cavities:** The bladder is dissected and moved cranially to allow entry into the vesicouterine pouch (anterior). Subsequently, the Douglas pouch (posterior) is accessed.
4. **Ligation of Vascular Pedicles:** The ligaments and vessels that support the uterus are sequentially clamped, sectioned, and ligated. This sequence usually includes the uterosacral and cardinal ligaments, followed by the uterine vessels, and finally the superior pedicles (round ligaments, fallopian tubes, and utero-ovarian ligaments).
5. **Removal of the Uterus:** After releasing all of its attachments, the uterus is removed through the vagina.
6. **Closure and Support of the Vaginal Dome:** The vaginal dome is closed with sutures. Suspension of the dome to the uterosacral ligaments is a crucial step in preventing future vaginal dome prolapse (Pickett et al., 2024).

ADJUVANT TECHNIQUES AND INNOVATIONS

To overcome the limitations of HV in more challenging cases, several techniques have been developed. For large-volume uteri, morcellation techniques such as bisection or coring can be used to reduce the size of the specimen and facilitate its removal (Pickett et al., 2024). Regarding suture materials, barbed sutures have been proposed as an alternative to conventional sutures for closing the vaginal vault; however, a Cochrane systematic review concluded that there is insufficient evidence to determine whether they are superior in terms of pain, surgical time, or complications (Aarts and Nieboer, 2021). More recently, a hybrid technique has been described that uses laparoscopy to section the vesicouterine ligaments as an initial step, facilitating anterior dissection and completion of the HV, especially in patients with a history of cesarean section (Oliva et al., 2024).

DISCUSSION

Vaginal hysterectomy is consistently cited as the preferred approach for treating benign conditions due to its proven advantages in terms of morbidity and recovery (Lenfant et al., 2021; Köhler et al., 2019). However, its application in clinical practice is often limited by factors that go beyond technical indications and contraindications. The decline in the training of residents in vaginal surgery and the growing familiarity of surgeons with the laparoscopic approach have contributed to the underuse of VV (Pickett et al., 2024; Lenfant et al., 2021).

Factors such as a large uterus or the absence of uterine prolapse are often cited as barriers to HV, but experienced surgeons can overcome these challenges with the use of morcellation techniques and appropriate maneuvers (Pickett et al., 2024; Lenfant et al., 2021). Similarly, a history of cesarean section can create adhesions in the vesicouterine fold, making anterior dissection difficult; however, the adjuvant laparoscopic approach, such as sectioning the vesicouterine ligaments, demonstrates how innovation can expand the indications for HV to more complex cases (Oliva et al., 2024).

The safety profile of HV is excellent. In a large cohort study involving 1,111 patients, the intraoperative complication rate was 2.2%, with bladder injury being the most common (Köhler et al., 2019). The rate of postoperative complications was 9.6%, including urinary

tract infections and vaginal vault hematomas (Köhler et al., 2019). These data reinforce that, in experienced hands, HV is a safe and effective procedure.

The choice of surgical approach should be an individualized decision based on a thorough assessment of the patient and the surgeon's experience, rather than strict adherence to relative contraindications (Lenfant et al., 2021). Revitalizing training in vaginal surgery is essential to ensure that patients have access to the minimally invasive approach most appropriate for their condition, avoiding more invasive procedures when HV would be the best option.

CONCLUSION

Vaginal hysterectomy remains the preferred approach for treating benign gynecological conditions, as evidenced by its effectiveness, lower morbidity, shorter hospital stay, and faster recovery when compared to abdominal and laparoscopic approaches. However, its clinical use is still limited, largely due to surgeons' lack of familiarity with the technique and reduced specific training in vaginal surgery.

Despite relative contraindications, such as a large uterus or history of cesarean section, adjuvant techniques, such as morcellation and initial laparoscopic dissection of the vesicouterine ligaments, demonstrate that such barriers can be overcome with experience and innovation. Careful selection of patients, based on anatomical and clinical factors and the surgeon's technical skill, is essential to ensure positive results and minimize complications.

It is imperative that vaginal hysterectomy be reevaluated in medical residency programs, encouraging its practice whenever possible to ensure that patients receive the least invasive approach that is most appropriate for their clinical condition. With technical improvements and the individualization of surgical procedures, vaginal hysterectomy can and should play a central role in the management of benign uterine diseases.

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