Revista Colombiana de Obstetricia y Ginecología Vol. 69 No. 4 • Octubre-Diciembre 2018 • (311-319)

CASE REPORT

DOI: http://dx.doi.org/10.18597/rcog.3113

LAPAROSCOPIC HYSTERECTOMY IN A TRANSSEXUAL MALE PATIENT: CASE REPORT AND REVIEW OF THE LITERATURE

Histerectomía por laparoscopia en un transexual masculino: reporte de caso y revisión de la literatura

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Received: December 15/17 – Accepted: November 29/18

ABSTRACT

Objective: To report a case of conventional laparoscopic hysterectomy in female-to-male sex reassignment in a patient diagnosed as transsexual in Colombia, and to conduct a review of the literature on the different hysterectomy options in the context of this condition.

Materials and methods: A 35-year-old transsexual patient under hormonal treatment with testosterone undecanoate undergoing laparoscopic hysterectomy for sex reassignment in a Level III complexity institution, with favorable postoperative course. A search was conducted in Medline vía PubMed, Embase and Lilacs databases, using the MESH terms "hysterectomy," "laparoscopy," "transsexualism," in English, Spanish and Czech, with no time limitation.

Results: Overall, 11 studies were included in the research: 3 case series, 6 cohort studies, 1 controlled clinical trial, and 1 case report. Laparoscopic hysterectomy is the most widely used sex reassignment surgery in male transsexuals. Vaginal hysterectomy is an option considering that abdominal muscles may be required for future penile reconstruction.

Conclusions: Laparoscopic hysterectomy emerges as an alternative to vaginal hysterectomy in male transsexuals undergoing sex reassignment surgery. Randomized controlled trials are needed for a better comparative assessment of the surgical options available.

Key words: Hysterectomy, laparoscopy, transsexualism.

RESUMEN

Objetivo: reportar un caso de histerectomía por laparoscopia convencional en cambio de sexo *female-to-male* en Colombia, en un paciente diagnosticado como transexual, y realizar una revisión de la literatura respecto a las distintas alternativas de histerectomía en el contexto de esta condición.

Materiales y métodos: paciente de 35 años, transexual, en tratamiento hormonal con undecanoato

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de testosterona, sometido a histerectomía laparoscópica como parte de reasignación de sexo, en una institución de III nivel de complejidad, con evolución posoperatoria favorable. Se realizó búsqueda en las bases de datos de Medline vía PubMed, Embase y Lilacs, con los términos MESH: "hysterectomy", "laparoscopy", "transsexualism", en inglés, español y checo, sin limitación de tiempo.

Resultados: la investigación incluyó 11 estudios: 3 estudios de serie de casos, 6 cohortes, 1 ensayo clínico controlado y 1 reporte de caso. La histerectomía laparoscópica es la más utilizada para la reasignación de sexo en transexuales masculinos. La histerectomía vaginal es una alternativa por considerar si se requiere musculatura abdominal para futura faloplastia.

Conclusiones: la histerectomía por laparoscopia surge como una alternativa a la histerectomía vaginal en pacientes transexuales masculinos sometidos a cirugía de reasignación de sexo. Se requieren ensayos controlados aleatorizados para una mejor evaluación comparativa de las alternativas quirúrgicas disponibles.

Palabras clave: histerectomía, laparoscopia, transexualismo.

INTRODUCTION

From the clinical stand point, a transsexual individual is defined as someone who wishes to live permanently as a member of the opposite biological sex because of an incongruence between sex at birth and the gender they feel they actually belong to (1). In this regard, psychiatric criteria have also been defined in order to categorize a patient as transsexual, including a strong desire to achieve permanent transition to the sex with which they identify, which marks the difference with the transgender individual who does not want sex reassignment, or wants it only in part (2). It is important at this point to be clear about the definition of gender identity, which is understood as the way in which the individual feels a sense of belonging to the male or female gender, regardless of the external genital appearance (3). Moreover, gender dysphoria is the term used in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) to encompass the discomfort caused by the discrepancy between gender identity and sex at birth, making no distinction between transgender and transsexual (4). Treatment is aimed at helping individuals feel comfortable with their sexual being in order to maximize overall psychological wellbeing and the feeling of self-realization. It starts with referral to a mental health professional for a timely diagnosis in accordance with the DSM-5. A one-year period follows during which the severity of the dysphoria is determined and a series of transitional processes are initiated if they are considered of benefit. Concomitant psychological assessment is required together with treatment of any stigma-derived psychiatric comorbities (5). During this twelve-month period, the patient is advised to go through a real-life test, engaging in the role of the desired sex in order to reaffirm the decision to change. This is followed by hormonal therapy, which in the case of a female-to-male transsexual is based on testosterone enantate or undecanoate either parenteral, transdermal or oral. Usually, the preferred option is the intramuscular form because of the lower number of doses required and the high success rate in stopping menstruation (6) with the goal of inducing virilization. The patient is followed every 2-3 months in order to determine virilization, check hormonal levels and identify any adverse reactions (7).

Patients may feel comfortable when they reach this stage, but a certain percentage will want to advance to sex reassignment surgery to achieve a complete change. There are different surgical alternatives such as bilateral mastectomy, hysterectomy and bilateral salpingo-oophorectomy, although not all patients ask for complete surgery. There is also the option of undergoing phalloplasty and metoidioplasty which offers the benefit of preserving sexual sensitivity (7).

It is important to bear in mind that hormonal therapy with testosterone induces vaginal atrophy, making vaginal hysterectomy more challenging (8). However, in a cohort study, Obedin-Maliver *et al.* showed that vaginal hysterectomy is both feasible and safe in transgender individuals (9). Likewise, constant testosterone use increases the risk of endometrial carcinoma, endowing hysterectomy with a preventive benefit in this context (2, 10).

Laparoscopic hysterectomy was performed for the first time in the late 1980s and is now being applied to other uses, as is the case of sex reassignment. Laparoscopic hysterectomy has gained popularity because of several advantages, including smaller access, better visualization of the anatomy, faster recovery and shorter hospital stay, less postoperative pain and no significant scarring (11, 12). Reports with the largest number of cases on sex reassignment are found in female transgender individuals (male-to-female), including a retrospective study by Raigosa *et al.* in 60 individuals at Hospital Clinic of Barcelona (13).

On the other hand, Perrone *et al.,* were the first to publish a case report in 2010 showing the usefulness of laparoscopic hysterectomy in female-to-male sex reassignment in a 27-year-old patient who reported complete satisfaction after the surgery (14). However, the significant advantage of laparoscopic hysterectomy over other surgical techniques, like the vaginal technique, is not yet clear; hence the relevance of conducting a review of the literature on the different surgical alternatives for hysterectomy in transsexual patients.

In Colombia, indications for laparoscopic surgery do not include a component for sex reassignment surgery, and analytical retrospective and prospective studies are needed in order to arrive at an optimal description of the use of laparoscopy in this scenario. This may result in future adoption in this country of certain protocols for gynecological components in female-to-male transsexual patients, as has been already done in countries like Belgium, where laparoscopic hysterectomy is recommended (15). There is also the intention of promoting the use of this technique among colleagues who treat patients with gender dysphoria, although it is important to state that not all individuals with these characteristics wish to undergo sex reassignment surgery (2, 15).

To date, there are no reports in Colombia on laparoscopic hysterectomy for female-to-male sex reassignment surgery. The objective of this report is to introduce laparoscopic hysterectomy as a surgical alternative in male transsexual individuals, as well as to conduct a review of the literature on the various surgical options for hysterectomy in this group of patients.

CASE REPORT

A 35-year-old patient, agribusiness engineer, who considers himself as transsexual, reports a diagnosis of transsexualism on the basis of a psychiatric assessment. Important medical history includes bipolar mood disorder under treatment by a mental health practitioner; family history of hypertension, diabetes and breast cancer (maternal grandmother); nulligravida, with a history of bilateral mastectomy in late 2014; under hormonal therapy with testosterone undecanoate for three years starting at 250 mg/month and followed by a 1000 mg dose every other month; weight, 69 kg and height 1.66 m. The patient underwent laparoscopic hysterectomy and salpingo-oophorectomy in March 2016 performed by an obstetrician and gynecologist specialized in laparoscopic surgery. The procedure was performed in a Level III referral center for the metropolitan area of the city of Bucaramanga (Colombia), which serves patients belonging to the contributive and subsidized social security regimes.

In the vaginal stage, a V-Care manipulator was used; a closed technique was used to enter the cavity with a Veress needle introduced through a 10 mm infraumbilical port. Three 5 mm ports were used: 1 right pararectal and 2 left pararectal ports. Total laparoscopic hysterectomy was performed with the conventional bipolar energy technique, two-plane

vault closure with polyglactin 2-0 endosuture and uterosacral vaginal vault suspension. The procedure lasted 120 minutes and the pathology report of the removed structures was normal.

The patient was discharged twelve hours after the surgery with minor vaginal tears that did not require sutures, and had a satisfactory postoperative course. The patient presented on postoperative day twelve with mild bleeding due to vaginal laceration and remained under surveillance by endocrinology and gynecology for two months after the procedure, with no reported complications or complaints.

Ethical considerations. Authorization for publication of the case was obtained through the patient's informed consent. The required precautions were taken to ensure that no personal information was disclosed and that confidentiality of the information will be preserved, respecting the patient's right to privacy and data confidentiality.

MATERIALS AND METHODS

A search was conducted in the literature published in English, Spanish and Czech until June 2017 in Medline via PubMed, Lilacs and Embase, using the MESH terms "hysterectomy", "laparoscopy", "transsexualism". Human studies of surgical interventions for female-to-male sex reassignment in male transgender population were included. The search included randomized controlled clinical trials, cohort studies (prospective or retrospective), reviews of the literature, case series and case reports. Studies pertaining to the use of hysterectomy for therapeutic purposes were excluded. Studies concerning male transgender individuals or men, or female-to-male, with abdominal, vaginal or laparoscopic hysterectomy, either alone or laparoscopically-assisted vaginal or robotic hysterectomy, were included. The assessment included study design, site, number of subjects included, surgical technique studied, blood loss, surgical time, hospital length of stay and other technique-related observations (Table 1).

RESULTS

Overall, 38 titles were found, 27 of which were unrelated to the topic. Of these, 11 studies were selected based on their relevance for this case in terms of the performance of hysterectomy in male transsexual individuals using different techniques, emphasizing the laparoscopic technique (Figure 1). The studies included 1 controlled clinical trial (16), 4 retrospective cohorts (8, 9, 17, 18), 2 prospective cohorts (19, 20), 1 case report (14), and 3 case series (20-22). The studies were conducted in the United States (8, 9) Czech Republic (15-17), Italy (14, 19), France (18), The Netherlands (23), Germany (20), and Belgium (21).

Surgical treatment options. Below is a description of the screened studies by surgical technique, including comparative studies.

Abdominal hysterectomy: No studies using only abdominal laparotomy in male transsexual individuals were found.

Vaginal hysterectomy: In a retrospective cohort of 106 male transsexual patients, Kaiser *et al.* report that vaginal hysterectomy is very useful in transsexuals, not only because of reduced scarring, but also because it avoids injuries to the rectus muscle, an important prerequisite for penile reconstruction, which is usually what patients desire (18).

Laparoscopic hysterectomy: In a prospective study of 10 male transsexual patients, Lazard *et al.* (19) report that single point access offers advantages over conventional laparoscopic technique because of reduced postoperative pain, faster return to normal activity and better cosmetic results. On the other hand, Bogliolo *et al.* (23) performed robotic laparoscopic hysterectomy in a case series that included 10 patients. It is considered to be safe and to be associated with good prognosis in terms of quality of life. Groenman *et al.*, in a prospective cohort study that included 36 female-to-male transsexual subjects report on laparoscopic robot-assisted hysterectomy plus bilateral salpingo-oopherectomy and

Table 1.
Characteristics of the studies found

Authors (reference)	Epidemiological design and n	Techniques assessed	Blood loss	Surgical time	Complications	Patient satisaction	Postoperative length of stay
O´Hanlan (8)	Retrospective cohort n = 593 (41 female-to-male) vs. female	TLH	27 mL (FtM) vs. 107 mL	74 minutes (FtM) vs. 120 min	12,2 % (FtM) vs. 8,3 %	NR	NR
Obedin-Maliver (9)	Retrospecti-ve cohort 33 female-to-male	VH , ALH, TLH		AH 225 mL, TLH, 175 mL, 250 mL.	Transgender 205 min, cisgender 210	12 % (trans-gender) vs. 18 % (cisgender)	NR
Perrone (14)	Case report	HL single point	20 mL	90 min	0	Satisfactory	2 days
Sehnal (16)	Randomized clinical trial n = 61	AH, ALH, TLH	TLH 136 mL vs. 217 mL for AH vs. 226 mL-for ALH	TLH (110 minutes), ALH (54 minutes), AH (55 minutes)	0% significant	NR	TLH 4.7 days vs. 6.4 days for AH, vs. 6.7 days for ALH
Filová (17)	Retrospective cohort n = 163	AH, ALH, TLH, LAVH	121 mL for TLH, 200 mL for LAVH, 226 mL for ALH and 240 mL for AH	(91 minutes TLH, vs. 73 minutes LAVH, vs. 60 minutes HA, vs. 54 minutes ALH	ALH, LAVH > not recognized; 7 cases for TLH, 4 cases for HA	NR	4.4 days for TLH, 5 days for LAVH, 6.1 days for AH, 6.7 days for ALH
Kaiser (18)	Retrospective cohort n = 106	VH	NR	52 min	5.40 %	NR	NR
Lazard (19)	Prospective cohort n = 10	LH single point	150 mL	150 min	0 %	NR	3 days
Groenman (20)	Prospective cohort n = 36	Robotic LH	75 mL	230 min	1 significant complication	NR	3 days
Dressler (21)	Case series n = 21	TLH	255 ± 180 ml	157 +/- 19 min	23.80%	NR	7,9 ± 2,7 days

Continuación Tabla 1

Table 1.
Characteristics of the studies found

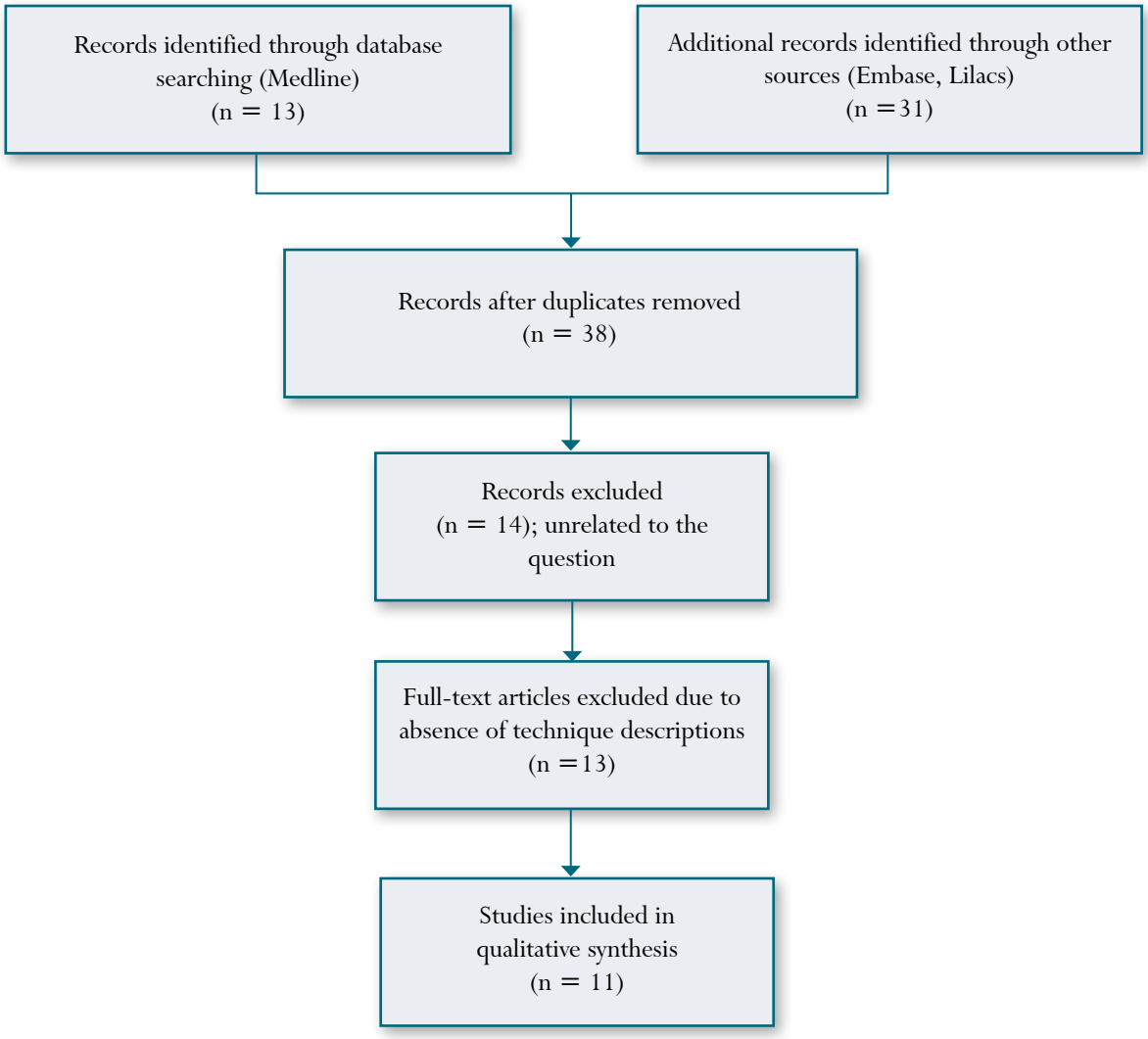
Authors (reference)	Epidemiological design and n	Techniques assessed	Blood loss	Surgical time	Complications	Patient satisaction	Postoperative length of stay
Cabenda (22)	Case series n = 7	TLH	100 mL	81 min	0%	NR	NR
Bogliolo (23)	Case series n = 10	Robotic LH	30 mL	137 min	1 non significant case	5 patients with VAS score > 8	NR

NR: not reported; ALH: Abdominal midline laparotomy hysterectomy; AH: abdominal hysterectomy through low horizontal incision; TLH: total laparoscopic hysterectomy; LAVH: laparoscopically-assisted vaginal hysterectomy; VH: vaginal hysterectomy; LH: laparoscopic hysterectomy (to distinguish from conventional technique); FtM: Female-to-Male transsexuals.

robot-assisted laparoscopic colpectomy, and present it as a viable alternative to the vaginal approach (20). However, current evidence on this approach is limited. Recently, in two posters in the European Journal of Gynecological Surgery with case series of total laparoscopic hysterectomy plus vaginal colpectomy or partial vaginectomy in transsexual patients, the authors show the benefit of the latter in individuals considering penile reconstruction, despite a higher frequency of complications (21, 22). On the other hand, O'Hanlan *et al*., in a historical cohort study conducted in California, United States, compare the results of conventional laparoscopic hysterectomy in 41 female-to-male transsexuals, with the results in non-transsexual women, and conclude that laparoscopy resulted in appropriate surgical outcomes, even in very young patients, and do not recommend vaginal or laparoscopically-assisted vaginal hysterectomy given that the majority of patients are nulliparous, or have a small atrophic vagina as a result of testosterone treatment (8). Compared to procedures performed in non-transsexual females, mean surgical time was shorter, blood loss was lower and complication rates were similar.

In a retrospective cohort of 33 subjects, Obedin-Maliver *et al*. compared abdominal hysterectomy through midline laparotomy (ALH), vaginal hysterectomy (VH) and total laparoscopic hysterectomy (TLH). VH was successfully performed in 8 individuals, showing that this technique is feasible and safe in this population. TLH was attempted in 16 subjects, but 2 were converted to abdominal laparotomy, which was the technique used in 11 subjects. Blood loss was lower in TLH, with a 4% proportion of postoperative complications, which was similar for all three groups (9). In a prospective controlled clinical trial by Sehnal *et al.* in 2008 (16), three techniques were compared in 61 subjects who requested female-to-male sex reassignment surgery. They were randomly assigned to ALH, abdominal hysterectomy through a low horizontal incision (AH), and TLH. In the study, TLH was associated with lower blood loss and shorter length of stay when compared to the other techniques, with no significant postoperative complications; however, it was the longest of all the procedures. Filova *et al.*, in a retrospective cohort of male transsexuals, compared four techniques:

Figure 1.
PRISMA article selection flow diagram



ALH, AH, laparoscopically-assisted vaginal hysterectomy (LAVH) and TLH. ALH was associated with the lowest blood loss and fastest return to normal activity, but had the disadvantage of longer surgical time (17).

CONCLUSIONS

Laparoscopic hysterectomy is an alternative to vaginal hysterectomy in male transsexual patients undergoing sex reassignment surgery. In view of the various approaches to sex reassignment surgery, further studies and randomized clinical trials are needed in order to determine the efficacy and safety of the different techniques available.

ACKNOWLEDGMENT

Our deep-felt gratitude to the patient for allowing us to publish the case after giving informed consent.

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Conflict of interest: None declared.