

# Vesicovaginal fistula repair after a failed Lehoczky's island flap procedure

Noemi Bordás, Endre Holman, Csaba Maróti, Janos Vancsura, S. Molnár, E. Francisco Martins<sup>1</sup>, Sándor Molnár

Department of Urology, Semmelweis Hospital, Kiskunhalas, Hungary, <sup>1</sup>Department of Urology, School of Medicine, Santa Maria Hospital, University of Lisbon, Lisbon, Portugal

## Abstract

Vesicovaginal fistula (VVF) is the most common genitourinary fistula associated with significant, detrimental impact on the quality of life. Surgical repair of VVF may be complex requiring tissue interposition techniques to bring fresh blood supply, minimize recurrence, and improve functional outcomes. The international literature is scarce regarding complications related to interposition tissue. However, caution is particularly recommended in selecting the tissue interposition technique to avoid unexpected and frustrating problems. We present a 57-year-old woman following multiple failed transvaginal and transabdominal VVF repairs involving a labium majus skin island flap (Lehoczky flap) after radical hysterectomy for cervical cancer.

**Keywords:** Complex, fistula, flap, genitourinary, interposition tissue, vesicovaginal

**Address for correspondence:** Dr. Noemi Bordas, Department of Urology, Semmelweis Hospital, Kiskunhalas, Hungary. E-mail: bordas.noemi@gmail.com  
**Received:** 19.03.2021, **Accepted:** 20.06.2021, **Published:** 20.01.2022.

## INTRODUCTION

Vesicovaginal fistula (VVF) is defined as an abnormal, extra-anatomic communication between the vagina and the urinary bladder negatively affecting the quality of life (QOL) in physical, sexual, and psychosocial domains. In Western countries, VVF is a common complication of pelvic surgery such as hysterectomy.<sup>[1]</sup>

Lehoczky island flap was first described in 1963 as a skin island flap harvested from the labium majus including underlying adipose tissue.<sup>[2]</sup> It is easily rotated and transferred through a tunnel under the bulbocavernosus muscle to the vaginal defect. According to the literature, it can be a viable method for fistula closure in specific settings, including large anterior vaginal defects, difficult vaginal access requiring a relaxing incision, and recurrent or irradiation-induced fistula requiring vaginal coverage

with well-vascularized tissue providing fibroadipose tissue and skin with good blood supply based on the external pudendal artery.<sup>[3-5]</sup> However, this flap is not hairless, a significant drawback negatively affecting the healing process and subsequent QOL.

## CASE REPORT

A 57-year-old woman presented at our institution with a single, nonirradiated recurrent fistula at the vaginal cuff following multiple ( $n = 3$ ) failed transvaginal and transabdominal VVF attempts at repair elsewhere after radical hysterectomy for cervical cancer. A Lehoczky island flap had been used for the initial VVF reconstruction. The patient complained of persistent urinary leakage and other bothering problems such as a nest of hair growth in the vagina, stone formation on the hairy flap and recurrent

Access this article online	
Quick Response Code:	Website: www.urologyannals.com
	DOI: 10.4103/ua.ua_56_21

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

**For reprints contact:** WKHLRPMedknow\_reprints@wolterskluwer.com

**How to cite this article:** Bordás N, Holman E, Maróti C, Vancsura J, Molnár S, Martins EF, *et al.* Vesicovaginal fistula repair after a failed Lehoczky's island flap procedure. *Urol Ann* 2022;14:102-4.

vaginal and urinary infections, as well as mental and psychosocial distress associated with urine smell and poor cosmesis of the external genitalia, leading to significant poor QOL, sexual dysfunction, and divorce. Sexual Satisfaction Scale for Woman, Female Sexual Function Index, and General Health Questionnaire-28 showed profound mental and sexual health dysfunction and dissatisfaction with the VVF repair. During vaginal examination, the hairy Lehoczky flap with stones was easily visible and the fistula site was found with surrounding tissue defects [Figure 1a]. Neither medical comorbidities (e. g., diabetes, smoking, malnutrition, and immunosuppression) nor specific fistula-related risk factors (e. g., history of cesarean section, endometriosis, pelvic inflammatory disease, mesh/sling implantation, prior unrelated pelvic or vaginal surgery, or irradiation) were present. The patient was considered oncologically cured. Before surgery, the patient underwent a detailed physical examination, ultrasonography scan, urine analysis and culture, and cystoscopy with the placement of bilateral ureteral stents, followed by successful redo repair of her complex VVF in our hospital.

A combined abdominovaginal approach was elected. The vaginal route was used to remove the entire hairy Lehoczky island flap [Figure 1b and c]. Hair follicles and stones were found intraoperatively protruding into the bladder and along the fistula tract, hampering the healthy wound healing process. Since the fistula was located close to the right ureteral orifice [Figure 1d], the abdominal approach was used for the reimplantation of the right ureter and closure of the vesical layer of the fistula with interposition of a well-vascularized peritoneal flap. A 14-day antibiotic course was instituted. An abdominal drain was left in place for 2 days and a urethral catheter for 4 weeks. Sexual abstinence was advised for 3 months. No postoperative complications occurred. At 6- and 12-month follow-up visits, the patient was continent with the restoration of normal voiding dynamics.

## DISCUSSION

In industrialized countries, hysterectomy accounts for 91% of the gynecologic surgeries that result in VVF.<sup>[6]</sup> The

incidence of VVF after hysterectomy for benign disease is reported to be 0.1%–0.4% and 1%–4% after radical hysterectomy,<sup>[7]</sup> fistula formation eventually caused by inadvertent and unrecognized technical error.<sup>[8]</sup>

In the case of ureteric involvement, a combined abdominovaginal approach with preoperatively placed ureteral stents can facilitate successful reconstruction. The use of interpositional tissue is advised in specific settings such as large, complex irradiated fistulae, or after previous failed repairs, where tissue closure is suboptimal. The main benefit of tissue interposition is the separation of potentially overlapping suture lines and eventually filling dead space. Preoperative sexual activity should be investigated to choose the best individual surgical option to prevent vaginal shrinkage and restore comfortable sexual life. Several options for interposition are reported in the literature but no clear and definitive indications are recommended.<sup>[6]</sup> Although flap interposition is mainly used as a technique to prevent fistula recurrence, we do not recommend, nor find necessary, its proactive use in simple, small fistulae caused by surgery alone and without the risk factors that are known to potentially compromise tissue health and quality of blood supply, such as irradiation. In case of very complex or irradiation fistula repairs, the use of tissue interposition as part of the reconstruction is highly recommended. If substantial tissue loss occurs resulting in significant vaginal or perineal epithelial defects (predominantly seen in oncologic patients), the overlying skin can be included in a musculocutaneous flap and used to replace the acquired defects. However, this skin should be hairless, which was not the case in this report. A skin island flap of the labium majus was reported by Lehoczky in 1963 and is considered a modification of the Martius flap, the latter not including the skin layer.<sup>[2]</sup> To the best of our knowledge, this is the first report of multiple VVF recurrences due to recurrent hair growth following a full-thickness skin island flap from the labium majus. Therefore, great caution should be taken when assessing the potential need for flap interposition because both the selection of a particular



**Figure 1:** (a) Cosmetic result after a Lehoczky island flap fistula repair. (b) Huge hairy skin flap in the vagina. (c) Intraoperative cystoscopy: between the left and right ureteral stents the orifice of the fistula can be seen. (d) Vaginally removed Lehoczky island flap

surgical approach and the tissues available for flapping will significantly impact morbidity, functional outcomes, and QOL. Regardless of the approach, basic principles of fistula repair should be followed. Moreover, definitive and successful reconstruction requires familiarity with different techniques involving flaps or grafts.

## CONCLUSION

The Lehoczky island flap technique can be an option in a very select patient group with large vaginal defects but surgeons should be aware that serious distressing complications can occur with this procedure, prompting discussion with the patient before surgery. Sexually active patients may not be good candidates for this flap due to its likelihood of intravaginal hair growth and fistula recurrence.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient (s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## REFERENCES

1. De Ridder D. An update on surgery for vesicovaginal and urethrovaginal fistulae. *Curr Opin Urol* 2011;21:297-300.
2. Lehoczky G. Neue Fisteloperation. *Wiss Z Humboldt-Univ Berl* 1963;12:171-2.
3. Kelemen Z, Lehoczky G. Closure of severe vesico-vagino-rectal fistulas using Lehoczky's island flap. *Br J Urol* 1987;59:153-5.
4. Kelemen Z, Pajor L. Repair of traumatic urethral fistula and huge tissue defect with Lehoczky's island flap. *Ann Urol (Paris)* 2000;34:274-7.
5. Bajory Z, Fekete Z, Kiraly I, Szalay I, Pajor L. Consecutive vesicovaginal fistula for transobturator sling perforations and successful repairs with skin flap. *Neurourol Urodyn* 2011;30:1530-2.
6. Eilber KS, Kavalier E, Rodriguez LV, Rosenblum N, Raz S. Ten-year experience with transvaginal vesicovaginal fistula repair using tissue interposition. *J Urol* 2003;169:1033-6.
7. Forsgren C, Altman D. Risk of pelvic organ fistula in patients undergoing hysterectomy. *Curr Opin Obstet Gynecol* 2010;22:404-7.
8. Evans DH, Madjar S, Politano VA, Bejany DE, Lynne CM, Gousse AE. Interposition flaps in transabdominal vesicovaginal fistula repairs: Are they really necessary? *Urology* 2001;57:670-4.