

## Laparoscopic transperitoneal approach for vesicovaginal repair : The first experience in Hasan Sadikin Hospital

Jumadi Santoso, Sawkar Vijay Pramod

### Abstract

**Introduction:** *Obstetric fistula is a severe and debilitating condition occurring throughout the developing world. Although there are no accurate data on the incidence and prevalence of the condition, the majority of vesicovaginal fistulas develop after obstetric procedure, with delayed labour accounting for 90% of cases. Several techniques are available for repairing the fistulas. Transperitoneal approaches give good results even for difficult posterior located fistulas, but are associated with increased morbidity compared with the transvaginal approach. We performed a laparoscopic repair and omentum interposition. The objective of this article is to report our first experience in transperitoneal laparoscopic repair of vesicovaginal fistula in Hasan Sadikin Hospital.*

**Method:** *A 31-year-old female presented with vesicovaginal fistula after sectio caesarea because of delayed labour. After a failed trial of conservative treatment with catheter drainage, a transperitoneal laparoscopic repair was performed. Cystoscopy was performed initially to confirm the fistula location and for bilateral ureteric catheterization. A 4-port technique was performed with the patient in the position with her legs in lithotomy position. Without opening the bladder, the fistula tract was excised with separation of the bladder from the anterior vagina wall. Both the bladder and vagina walls were then closed separately using intracorporeal suturing with an interpositional omentum.*

**Results:** *Total operative time was 270 min. Normal diet was resumed on day 1, drain was removed on post operative day 1 and patient was discharged on the second day with an indwelling catheter. Good cosmetic result on wound operation and no leakage under cystogram after 2 weeks. The catheter was removed after 2 weeks.*

**Conclusion:** *Laparoscopic transperitoneal repair of vesicovaginal fistula with omentum interposition is feasible in Hasan Sadikin Hospital with good outcomes, short hospital days, and good cosmetics result. Still need more same cases before a final conclusion (J I Bedah Indones. 2014;43:55–60).*

**Keywords:** *Fistula vesico vaginal, laparoscopic.*

### Abstrak

**Latar Belakang:** *Fistula obstetric adalah suatu kondisi yang sangat mengganggu, yang terjadi pada hampir seluruh negara sedang berkembang, walaupun belum ada data yang akurat tentang insidensi dan prevalensi dari kondisi tersebut, mayoritas fistula vesicovaginal terjadi setelah partus kasep, dimana hampir 90% kasus disebabkan oleh proses persalinan tersebut. Terdapat beberapa teknik yang dapat digunakan untuk terapi pembedahan fistula vesicovagina. Pembedahan secara laparoskopik transperitoneal memberikan hasil yang baik, walaupun pada kasus – kasus fistula dengan lokasi di posterior sangat sulit untuk dilakukan. Kami melakukan operasi pembedahan secara laparoskopik transperitoneal, serta kami melakukan interposisi dengan jaringan omentum.*

Tujuan tulisan ini adalah melaporkan kasus pertama yang juga pengalaman pertama dalam melakukan terapi pembedahan fistula vesicovaginal secara laparoskopik transperitoneal di Indonesia.

**Metode:** *Seorang wanita 31 tahun, dengan diagnosis fistula vesicovaginal setelah operasi seksio sesar karena persalinan pervaginam macet. Keluhan BAK mengompol dirasakan sejak 5 tahun yang lalu, setelah gagal*

*dilakukan terapi konservatif dengan pemasangan kateter, kemudian dilakukan terapi pembedahan laparoskopik transperitoneal. Tahapan pertama dalam terapi pembedahan tersebut adalah tindakan*

Alamat Korespondensi  
dr. Jumadi Santoso  
Email : jumadi82@gmail.com

*sistoskopi* yang dilakukan untuk menentukan lokasi fistula dan untuk insersi kateter ureter pada kedua ureter. *Laparoskopik* dilakukan dengan cara *transperitoneal* dengan menggunakan 4 port, dengan posisi pasien lithotomi dengan sedikit posisi *trendelenburg*. Operasi dilakukan dengan tanpa membuka buli-buli, kemudian jalur fistula dieksisi, dan dipisahkan antara buli-bulidengan dinding anterior vagina. Kemudian lubang fistula pada buli-buli dan vagina masing-masing ditutup dengan jahitan, dan diinterposisi dengan omentum.

**Hasil:** Total waktu selama operasi adalah 270 menit. Pasien sudah dapat makan normal pasca operasi hari pertama, drain dilepas hari pertama pasca operasi dan pasien dipulangkan pada hari kedua dengan terpasang kateter urin. Hasil luka operasi sangat baik secara kosmetik dan tidak ditemukan kebocoran pada pemeriksaan sistografi pada 14 hari pasca operasi. Kateter urin dilepas setelah 2 minggu.

**Kesimpulan:** Terapi pembedahan secara *laparoskopik transperitoneal dan interposisi omentum* pada kasus *fistula vesicovaginal* sepertinya sangat mungkin dilakukan di RS Hasan Sadikin, dengan keluaran yang cukup baik, waktu perawatan yang singkat, dan luka operasi yang baik secara kosmetik. Masih perlu laporan dan analisa dari kasus-kasus selanjutnya (*J I Bedah Indones. 2014;43:55–60*).

**Kata kunci:** *Fistula vesico vaginal, laparoscopic.*

## Introduction

Vesicovaginal fistula (VVF) in developed countries is surgical trauma associated with gynecologic procedures. Transperitoneal hysterectomy has been shown to be the most common cause, with VVF occurring in approximately one of every 1800 hysterectomies.<sup>1</sup> The incidence of fistula caused by surgery procedure was 0,1% and 2%, which is almost 70 % caused by hysterectomy procedure. The others caused by radiation, malignancy and infection.<sup>1–3</sup>

Several techniques exist for repairing the VVF. Vaginal repair offers the least morbidity but can be challenging for the posterior fistulas. From experienced centers in well-selected patients, success rates of 88–100% have been reported.<sup>4</sup> The transperitoneal approach offers excellent results but with increased morbidity.<sup>4–6</sup> We herein report the first our experience in laparoscopic repair of VVF following Caesarean procedure.

## Case Report

A 31-year-old woman with previous caesaran procedure history 5 year ago. She complained of continous urinary leakage from vagina, without micturition sensation. After failure of 6 weeks conservative management, she was offered for surgical procedure. Because of financial reason she refused for surgical therapy for 5 years. Now after performed cystography, we found vesicovaginal fistula (fig1), which is the neck of the fistula is on the posterior wall of the bladder. We performed laparoscopic repair with transperitoneal ap-

porach. The duration of the procedure 270 minutes. Length of stay was 2 days, drain was removed on post operative day 1 and avarage VAS score was 2. Patient was discharge with indwelling urethral catheter inside. Postoperative cystograms was done after 14 days post operative. We found no any contrast leakage and then immediately we removed the urethra catheter. Patient was satisfied with good cosmetically operative wound and no any urinary leakage.



Figure 1. Preoperative cystogram

## Operative Technique

The patient was placed in low lithotomy position. Cystoscopy shows the supratrigonal fistula (fig.2) and the 2 ureters were catheterized using ureteral catheter no.5 Ch. This facilitated ureteral identification and protection during excision and closure of the fistula. A Long forcep was introduce to vaginal opening and under cystoscopy the forcep was entering the fistula from vaginal side. Ureteral catheter was inserted to fistula and pull out to vagina using this forcep. This ureter catheter was used as a marker for fistula site

(fig 3). A moist surgical gauze pad was placed in the vagina to prevent leakage of gas from the abdomen and to pulldown the vagina to give more traction on laparoscopic procedure. The patient then placed in mild Trendelenburg position. After creating pneumoperitoneum, 4 ports were placed (fig 4).

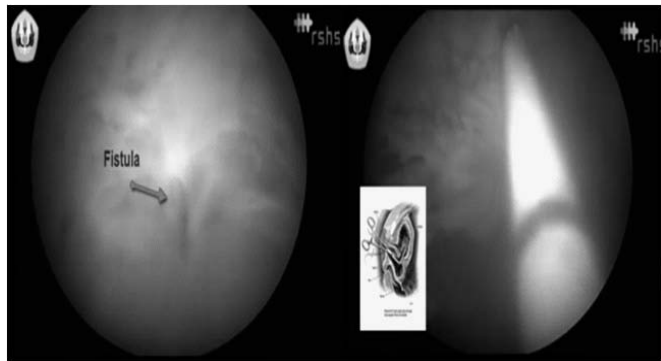


Figure 2. Cystoscopy



Figure 3. Ureteral catheter was inserted into fistula and outdrawn to vagina.



Figure 4. Patient position

We use 4 laparoscopic ports, 10 mm port for laparoscopic 30° camera, three 5 mm ports was used for assistance and operator (fig 5).

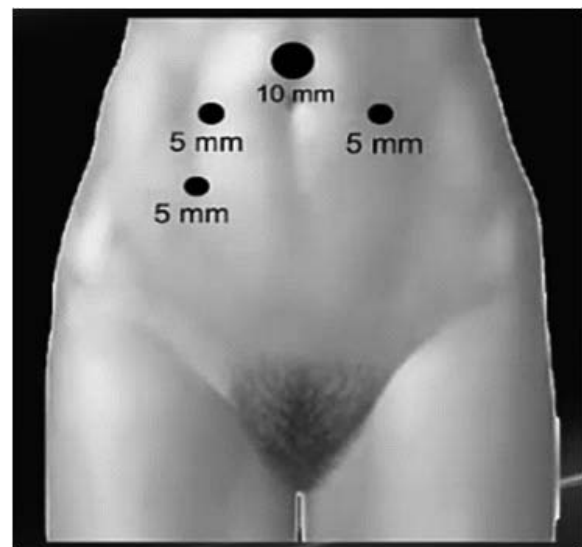


Figure 5. Port position

The first step was dissection of the uterus. We found some mild uterus adhesion to adjacent omentum (fig 6).

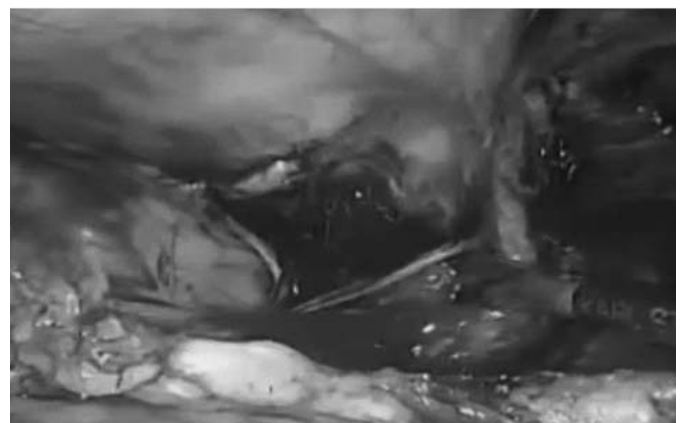


Figure 6. Dissection of uterus

Next step was dissection of the vesicovaginal space. Dissection was made until we found ureteral catheter that previously inserted to the fistula (fig 7 and 8). The fistulous tract was sharply excised, creating a lateral margin of viable tissue wide enough to allow subsequent closure (fig 9). After excision of the tract, meticulous dissection was performed separating the bladder from the vagina using gentle countertraction and laparoscopic scissors. Vaginal closure was done in single layer with interrupted 2-0 long

absorbable sutures (fig 10). The bladder was closed using 2-0 long absorbable suture in two layers in running suture with perpendicular direction with vaginal closure (fig 11).

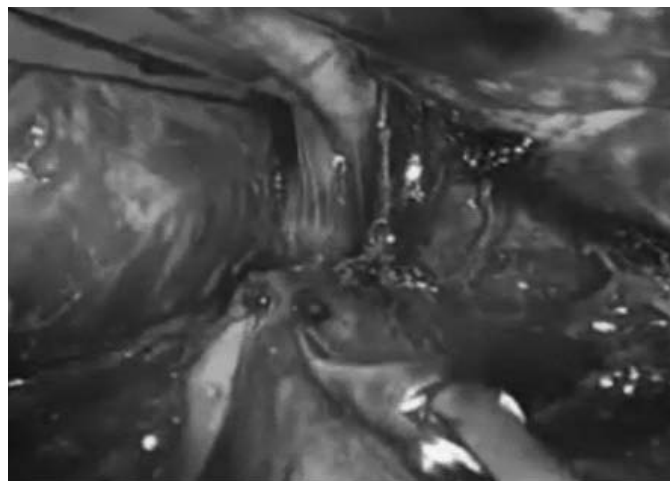


Figure 7. Dissection of vesicovaginal space



Figure 8. Ureteral catheter as a marker site of fistula



Figure 9. Dissection of fistulous tract



Figure 10. Vaginal closure



Figure 11. Bladder closure

The omental interpositional flap was advanced over the vaginal closure and sutured to the anterior vaginal wall, distal to the vaginal closure (fig 12).



Figure 12. Omental interposition

The bladder was irrigated with saline to ensure watertight closure. One small silicone drain no 0,4 was placed. Bladder drainage was accomplished with an 18F indwelling catheter. No suprapubic cystostomy was used.

The total operative time was 270 minutes, with an estimated blood loss of 50 ml. The patient was discharged on the second postoperative day, with average VAS score was 2. The urethral catheter was removed at 2 weeks after there was no any contrast leakage under



cystogram (fig 13). The patient is asymptomatic with normal voiding at 3 months of follow-up with good cosmetically operative wound (fig 14).

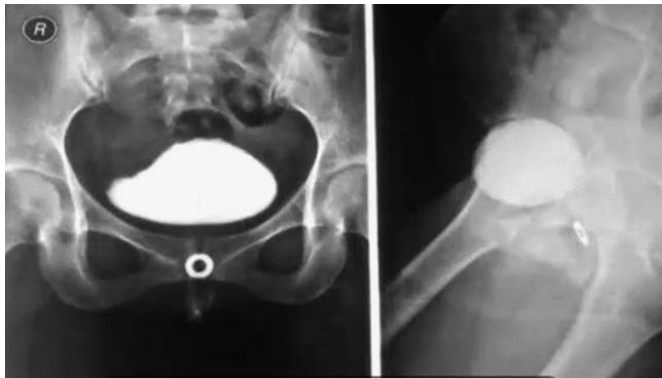


Figure 13. Postoperative cystogram



Figure 14. Surgical Incision

## Discussion

VVF is an uncommon complication with a reported incidence of 0.1–0.2% after hysterectomy. Fistulas may be successfully repaired with an transperitoneal, vaginal or combined approach. The choice of the approach usually depends on the surgeon's preference and experience.<sup>4</sup> The number and complexity of surgical cases performed is ever growing with laparoscopy becoming an alternative to laparotomy for many procedures. The advantages of a minimally invasive procedure are well known, including magnification during the procedure, hemostasis, decreased pain and a shorter hospital stay with a more rapid recovery and an earlier return to work.<sup>1, 4</sup>

On this case, this is our first experience in laparoscopic repair for vesicovaginal fistula. Transperitoneal approach has advantages such as bigger operative field and easier to insertion interpositional flap than vaginal approach. Some literatures also report their experience in laparoscopic procedure for vesicovaginal fistula repair, closure rate was 87.1%, with 15.6% remaining incontinent, others report successful rate was 75% and 92%.<sup>7, 8</sup>

The exposure and magnification afforded by the videolaparoscopy facilitates efficient and direct access to the fistula, meticulous dissection and fistula resection. Tension-free closure of well-vascularized flaps can be done with interposition of the omental flap between the suture lines. Approximation of the bladder under magnification allows the procedure to be completed without suprapubic tube placement.

## Conclusion

Laparoscopic VVF is a feasible and efficacious approach for VVF repair. Based on our first experience, it seems an excellent alternative to the traditional open surgery but it requires experience in laparoscopic pelvic surgery with intracorporeal suturing.

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*This operation was performed by dr Sawkar Vijay Pramod, SpU.*

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