LAPAROSCOPIC TRANSPERITONEAL APPROACH FOR VESICOVAGINAL REPAIR

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ABSTRACT

Objective: *To report our first experience in transperitoneal laparoscopic repair of vesicovaginal fistula in Hasan Sadikin General Hospital.* ***Material & Method:*** *A 31-year-old female presented with vesicovaginal fistula after caesarean section. After a failed trial of conservative treatment with catheter drainage, 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 lithotomy position. Without opening the bladder, the fistula tract was excised with separation of the bladder from the anterior vaginal wall. Both the bladder and vaginal walls were then closed separately using intracorporeal suturing with omental interposition.* ***Result:*** *Total operative time was 270 min. Normal diet 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 omental interposition is feasible in Hasan Sadikin General Hospital with good outcomes, short hospital stay, and good cosmetic result.*

Keywords: *Vesico vaginal fistula, laparoscopy.*

ABSTRAK

Tujuan: *Melaporkan kasus pertama terapi pembedahan fistula vesikovagina secara laparoskopik transperitoneal di RS Hasan Sadikin (RSHS) Bandung.* ***Bahan & Cara:*** *Seorang wanita 31 tahun, dengan diagnosis fistula veiskovagina setelah operasi seksio sesar. 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 sistoskopi yang dilakukan untuk menentukan lokasi fistula dan untuk insersi kateter ureter pada kedua ureter. Laparoskopi dilakukan dengan cara transperitoneal dengan menggunakan 4 port, dengan posisi pasien litotomi dengan sedikit posisi trendelenburg. Operasi dilakukan tanpa membuka buli-buli, kemudian jalur fistula dieksisi, dan dipisahkan antara buli-buli dengan 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.* ***Simpulan:*** *Terapi pembedahan secara laparoskopik transperitoneal dan interposisi omentum pada kasus fistula vesikovagina sepertinya sangat mungkin dilakukan di RSHS Bandung, dengan keluaran yang cukup baik, waktu perawatan yang singkat, dan luka operasi yang baik secara kosmetik.*

Kata kunci: *Fistula vesiko vagina, laparoskopik.*

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INTRODUCTION

Vesicovaginal fistula (VVF) in developed countries is caused by 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.[1] The incidence of fistula caused by surgery procedure was 0,1% and 2%, which is almost 70% caused by

histerectomy procedure. The others caused by radiation, malignancy, and infection.[1-3]

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.[4] The transperitoneal approach offers excellent results but with increased morbidity.[4-6]

OBJECTIVE

To report our first experience in transperitoneal laparoscopic repair of vesicovaginal fistula in Hasan Sadikin General Hospital.

MATERIAL & METHOD

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 repair. Because of financial reason she refused surgical therapy for 5 years. Now after performed cystography, we found vesicovaginal fistula (fig1), with the neck of the fistula on the posterior wall of the bladder. We performed laparoscopic repair with transperitoneal apporach. 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 discharged with indwelling urethral catheter. Postoperative cystograms was done on post operative day 14. We found no contrast leakage and immediately removed the urethral catheter. Patient was satisfied with good operative wound cosmesis and no urinary leakage.

RESULT

The patient was placed in low lithotomy position. Cystoscopy showed the supratrigonal fistula (figure 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 forceps was introduce to the vaginal opening and under cystoscopy the forceps entered the fistula from vaginal side. Ureter catheter was inserted to fistula and pulled out to vagina using this forceps. This ureter catheter was used as a marker for fistula site (figure 3). A moist surgical gauze pad was placed in the vagina to prevent leakage of gas from the abdomen and to pull down the vagina to give more traction on laparoscopic procedure. The patient was placed in mild Trendelenburg position. After creating pneumoperitoneum, 4 ports were placed (figure 4). We used 4 laparoscopic ports, 10 mm port for laparoscopic 30º camera, three 5 mm ports was used for assistance and operator (figure 5). The first step was disection of the uterus. We found some mild uterus adhesion to adjacent omentum (figure 6). Next step was dissection of the vesicovaginal space.

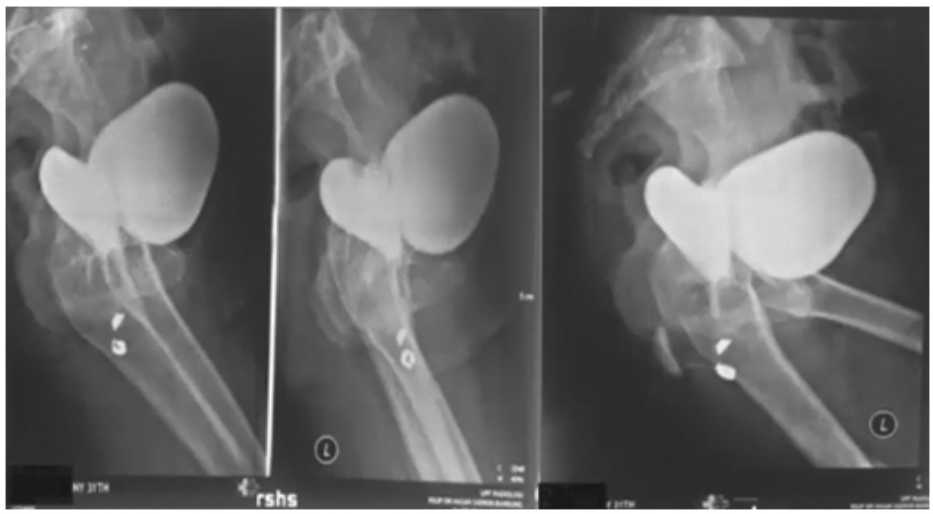

Figure 1. Preoperative cystogram.

Dissection was made until we found ureteral catheter that previously inserted to the fistula (figure 7 and 8). The fistulous tract was sharply excised, creating a lateral margin of viable tissue wide enough to allow subsequent closure (figure 9). After excision of the tract, meticulous dissection was performed separating the bladder from the vagina using gentle counter traction and laparoscopic scissors. Vaginal closure was done in single layer with interrupted 2-0 long absorbable sutures (figure 10). The bladder was closed using 2-0 long absorbable suture in two layers in running suture with perpendicular direction with vaginal closure (figure 11). The omental interpositional flap was advanced overthe vaginal closure and sutured to the anterior vaginal wall, distal to the vaginal closure (figure 12). The bladder was irrigated with saline to ensure water tight closure. One small silicone drain no 0.4 was placed. Bladder drainage was accomplished with an 18 F indwelling catheter. No suprapubic cystostomy was used.

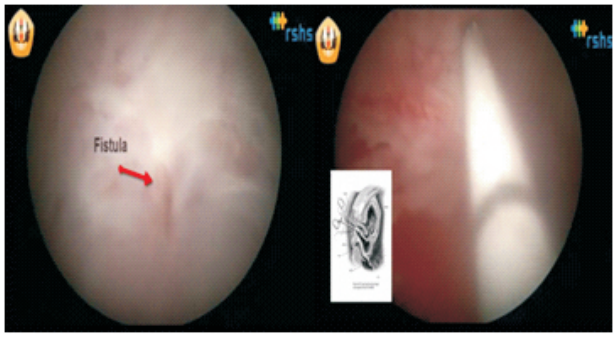

Figure 2. Cystoscopy.

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

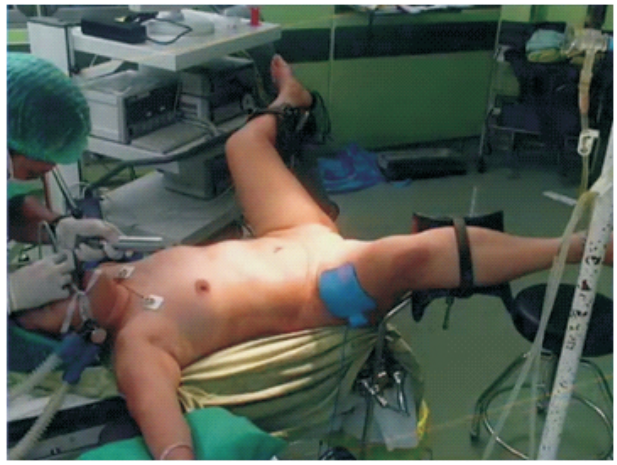

Figure 4. Patient position.

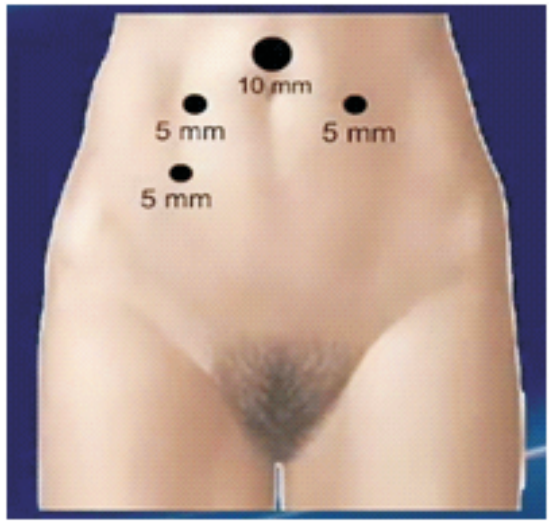

Figure 5. Port position.

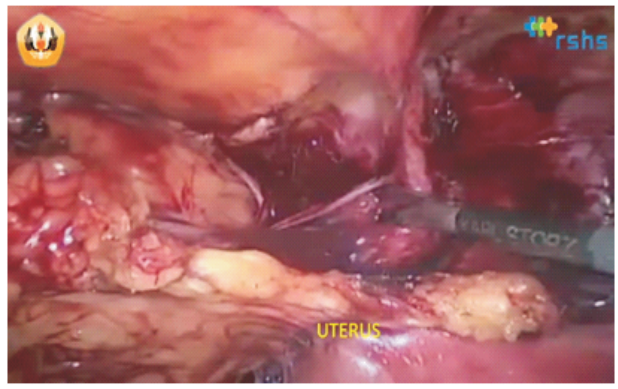

Figure 6. Dissection of uterus.

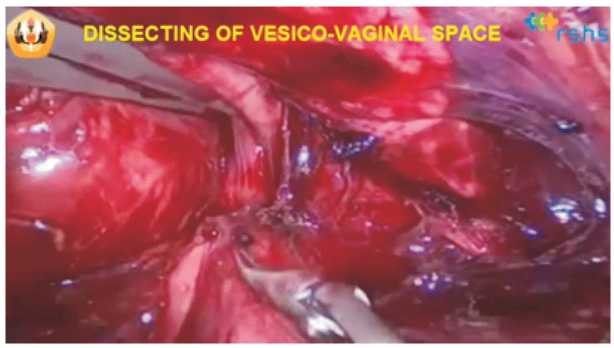

Figure 7. Dissection of vesicovaginal space.

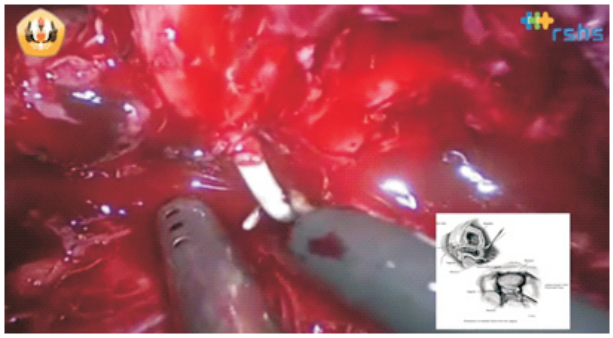

Figure 8. Ureteral catheter as a marker site of fistula.

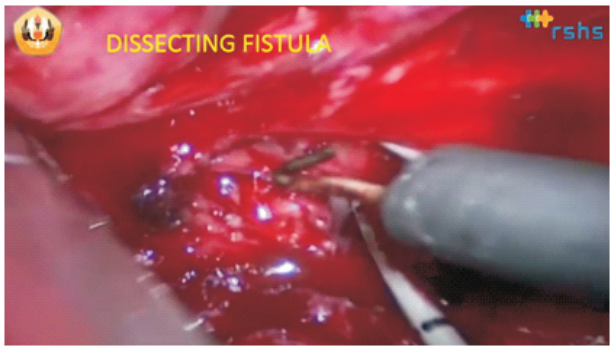

Figure 9. Dissection of fistulous tract.

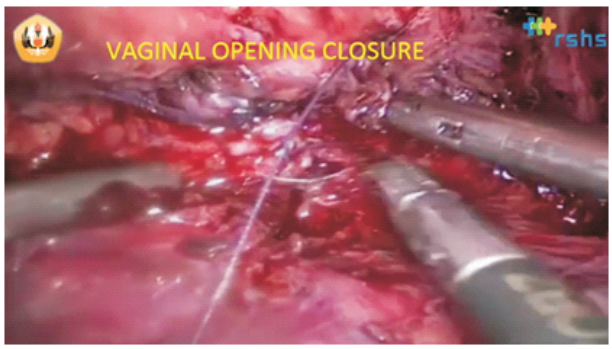

Figure 10. Vaginal closure.

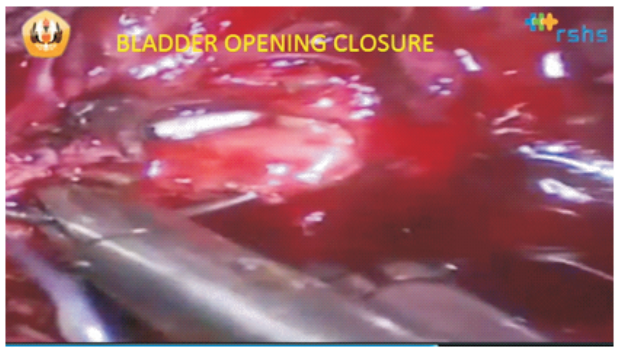

Figure 11. Bladder closure.

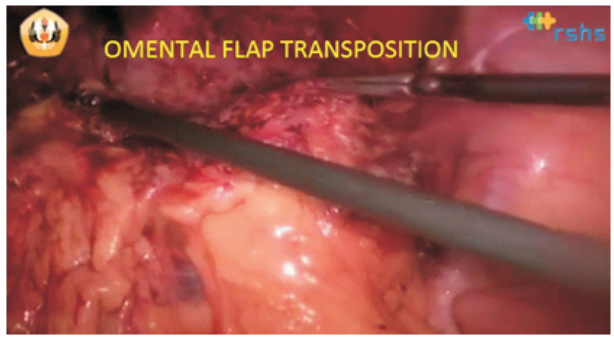

Figure 12. Omental interposition.

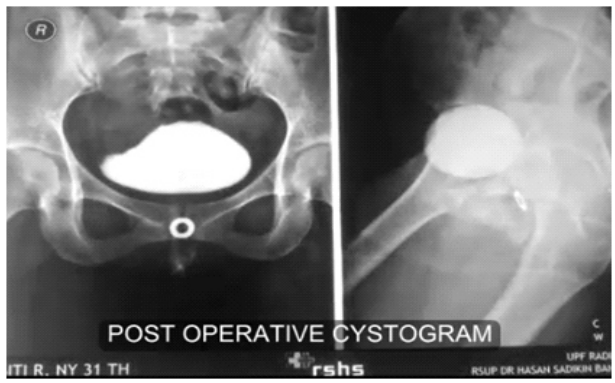

Figure 13. Postoperative cystogram

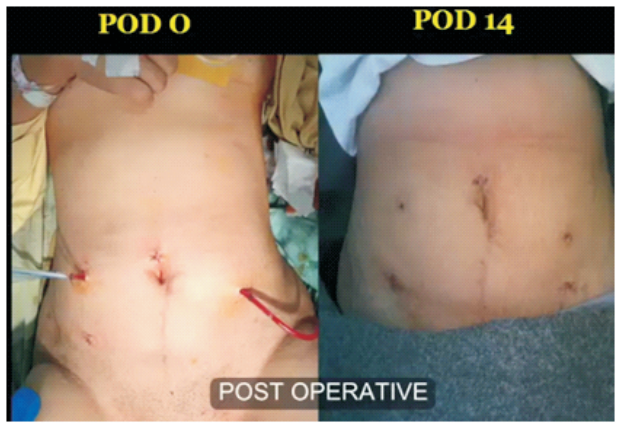

Figure 14. Wound operation.

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 contrast leakage on cystogram (figure 13). The patient is asymptomatic with normal voiding at 3 months of follow-up with good operative wound cosmesis (figure 14).

DISCUSSION

VVF is an uncommon complication with a reported incidence of 0.1–0.2% after hysterectomy. Fistulas may be successfully repaired with a transperitoneal, vaginal, or combined approach. The choice of the approach usually depends on the surgeon's preference and experience.[4] 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.[1,4]

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 literature also report their experience in laparoscopic procedure for vesicovaginal fistula repair, closure rate was 87.1%, with 15.6% remaining incontinent, others report success rate was 75% and 92%.[7,8]

The exposure and magnification afforded by the video laparoscopy 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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