Vesico-Vaginal Fistula : Experience of 230 Cases

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Abstract

We reviewed 230 cases of vesico-vaginal fistula in Ramathibodi Hospital from 1969 to 1997. The cases of fistula included 164 cases after transabdominal hysterectomies, 5 cases after anterior colporrhaphies, 8 cases after radical hysterectomy, 23 cases after vaginal hysterectomy, 10 cases after prolonged or traumatic birth, 9 cases after radiation for cervical carcinoma, 7 cases of cervical cancer invasion, 2 cases after suprapubic cystolithotomy and 2 cases after pelvic fracture. Most of them were referred from other hospitals.

In 7 cases, the fistula closed spontaneously after indwelling urethral catheters for 4-6 weeks. Five cases were cured after transurethral fulgurations. The rest were treated with different surgical procedures i.e. transvaginal, transvesical and retrovesical repairs.

Ten cases were treated by urinary diversions, usually after failure using other surgical procedures.

Key word : Vesicovaginal Fistula, Surgical Treatment

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Vesico-vaginal fistula is extremely disabling because of the physical, psychological and social consequences of urinary leakage. In the past, most of the causes of vesico-vaginal fistula were from birth trauma. Now this etiology has decreased while the incidence after pelvis surgery has increased. Some fistulas can be cured after indwelling urethral catheter or fulguration of the fistulous tract but most of them need to be corrected by surgical management. Operative treatment of vesico-vaginal

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fistula can be done *via* transvaginal, transvesical, retrovesical or combined approach. We reviewed our experience of the treatment of vesico-vaginal fistula in our hospital and studied the result of each technique.

MATERIAL AND METHOD

From 1969 to 1997, 230 cases of vesico-vaginal fistula were identified. Most of them were referred from other hospitals (170 cases = 73.9%) and 35 cases which were referred after attempted repair had failed. Age range was 18-64 years (mean 45.2 years). The causes of fistulas are shown in Table 1.

Vaginal examination, intravenous pyelography and cystoscopy were performed. Cystography and tampon dye test were done in small fistula that could not be seen during cystoscopy and vaginal examination. Retrograde pyelography was done to exclude any ureteral injuries. Urethral catheters were retained in most cases before surgery. Debilitating periods before the surgical repairs are shown in Table 2.

Table 1. Causes of vesico-vaginal fistulas.

Transabdominal hysterectomy	164
Radical hysterectomy	8
Vaginal hysterectomy	23
Anterior colporrhaphy	5
Prolong or traumatic birth	10
Post radiation for cervical cancer and cancer free	9
Active cervical cancer	7
Pelvic fracture	2
Cystolithotomy	2

Table 2. Time before repair.

After gynecologic procedure	3 weeks - 3 months
After obstetric procedure	3 months - 4 months
After cystolithotomy	15 years
After pelvic fracture	4-5 months
After radiation	6-12 months
After failure repaired	3 months

Table 3. Results of treatment.

Method	Number	%	Result (cure)	%
Catheter drainage	7	3	7	100
Fulguration	8	3.4	5	62.5
Transvesical	168	73	132	78.5
Retrovesical	30	13	28	93.3
Transvaginal	20	8.7	20	100

RESULTS

The fistulas were closed spontaneously after indwelling urethral catheter for 4-6 weeks in 7 cases (3%). Fulguration of the fistulous tract was performed in 8 cases when the fistulas were smaller than 3 mm and 5 cases were cured.

Transvesical extraperitoneal techniques were used in 168 cases (73%). They were the first operation in 139 cases and reoperation in 29 cases. The 109 patients in the first operation group (78.4%) and 18 in the reoperation group were cured (62%).

Retrovesical techniques were used in 30 cases and 28 were cured (93.3%).

The transvaginal approach was used in 20 cases and all were cured (100%). Table 3

Pedicle materials were used in all cases of large, multiple, scarred, post radiation and re-operation.

Thirty eight cases of fistulas failed after attempt at surgical repair, 15 had received radiation alone or in combination with radical hysterectomies. All 7 cases with active cancer were incurable. The remaining failure occured in the patients who had undergone more than one prior attempt at repair.

Urinary diversion of ileal conduit, colon conduit and bilateral ureterostomies were done in 10 cases after failure.

DISCUSSION

Most vesico-vaginal fistulas are easy to diagnose. The classical cases are continuous leakage of urine per vagina after pelvic surgery or complicated child birth. In developing countries, most of them were caused by birth trauma which now shows a decreased incidence to 8 per cent[1]. Nowadays the most common cause is from pelvic surgery [1,2]. Everette reported that 80-85 per cent of vesico-vaginal fistulas were related to pelvic surgery and 75 per cent related to transabdominal hysterectomies[3]. The incidence increased if the patient had endometriosis or a history of pelvic inflammatory disease[4-6]. In our study, most of the causes were from transabdominal hysterectomies of benign conditions (71%) and radical hysterectomies

for malignant cervical cancer (3.4%) vaginal hysterectomies (10%) and birth trauma (4.3%).

Jay Marrion Sims is credited with the first successful operation of vesico-vaginal fistula in 1849 and was reported in 1852[7].

Although it is customary to recommend a 3 months' waiting period after fistula formation[4-6] many report showed successful non delayed surgical repair[8]. We also found successful repair after a 3 weeks' wait.

If the fistula is small and the patient remains dry after placement of a Foley's catheter, a two to four weeks' period of observation should allow the fistula to close spontaneously[9]. Latzko reported 25 per cent of small vesico-vaginal fistula closing after indwelling urethral catheter,[9] but we found only 3 per cent to be successful. Estrogen was used in both oral and topical form to improve the healing process especially in post menopausal or post bilateral oophorectomies[10].

Fulguration of fistulous tract or curretage of the mucosal lining of the tract were used in small vesico-vaginal fistulas (less than 3 mm)[10,11]. Falk and Orkin reported a success rate of 71 per cent[10]. In this study, 5 out of 8 patients were cured (62.5%).

The transvesical extraperitoneal approach has been used by urologists for a long time. Udeh reported a success rate of 86 per cent,[12] but in our study the success rate was 78.4 per cent and reoperation showed a success rate of only 62 per cent.

The retrovesical approach was developed by O'Conor and Sokol in 1951. The fistula is approached *via* the developed retrovesical plain, and the bladder wall is dissected sagittally. The vaginal and bladder defects are sutured separately in a different direction[13-16]. Pedicle materials such as omentum or peritoneal flap can be used to interpose and can give a higher rate of success[17,18].

The transvaginal approach seems to be faster and less morbid, with minimal blood loss [19-21]. Tancer reported the success rate of this technique to be 93 per cent[19] but some patients had a sexual problem due to the shortening of the vagina[22]. The invert J incision in the vaginal wall is the most popular approach and has given a high success rate[23]. Peritoneum or Martius flap can be used to interpose between the closure defect of the bladder and vagina[23,24]. In our study, this technique also gave a high success rate (100%).

Post radiated cases who had arteritis and poor blood supply showed the very low success rate of vesico-vaginal repair[25] and in our study none of the post radiated cases did have well. Patients who have radiated or active cancer should be advised to have urinary diversion after failure of vesico-vaginal repair. Repeated repair attempts were almost all unsuccessful and carried a high morbidity.

SUMMARY

Vesico-vaginal fistula can be cured with the appropriate choice of surgical technique. The success rate depends on the location and extent of the fistula, the number of previous operations, the absence of infection, individual performance and expertise of the surgeon. Fistulas arising in a radiated field or active cancer are more likely to fail.

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รอยรั่วระหว่างกระเพาะปัสสาวะกับช่องคลอด : ประสบการณ์ 230 ราย

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ได้ทำการศึกษาย้อนหลังผู้ป่วยที่มีรูรั่วระหว่างช่องคลอดกับกระเพาะปัสสาวะในโรงพยาบาลรามาธิบดี ระหว่าง พ.ศ. 2512-2540 สาเหตุเกิดจากการผ่าตัดมดลูกออกทางช่องท้อง 164 ราย ตัดมดลูกทางช่องคลอด 23 ราย ตัดมดลูกเนื่องจากมะเร็ง (Radical hysterectomy) 8 ราย, Anterior colporrhaphy 5 ราย, ผลแทรกซ้อนจากการคลอด 10 ราย หลังจากการฉายรังสีเพื่อการรักษามะเร็งปากมดลูกและมะเร็งหายแล้ว 9 ราย เกิดจากมะเร็งปากมดลูกลุกลาม 7 ราย เกิดจากกระดูกเชิงกรานหัก 2 ราย และเกิดจากการผ่าตัดนิ่วในกระเพาะปัสสาวะ 2 ราย ส่วนใหญ่จะได้รับการส่งต่อมาจากโรงพยาบาลอื่น หลังจากได้คาสายสวนปัสสาวะไว้ 4-6 สัปดาห์ พบว่า 7 รายรูรั่วปิดเอง อีก 5 ราย หายหลังจากได้ทำการจี้ทำลายเยื่อบุผิวของรูรั่ว ส่วนที่เหลือต้องอาศัยการผ่าตัดรักษา

ผู้ป่วยจำนวน 10 ราย ไม่ประสบความสำเร็จในการซ่อมรูรั่ว จนกระทั่งต้องทำการผ่าตัดระบายปัสสาวะจากท่อไตด้วยวิธี Ileal conduit, colon conduit หรือ Ureterostomy

คำสำคัญ : รอยรั่วระหว่างกระเพาะปัสสาวะกับช่องคลอด, การรักษา, การผ่าตัด

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