Original article

Common genitourinary fistulae at a referral hospital in Saudi Arabia

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Abstract: Objective: To evaluate genitourinary fistulae cases, including factors, management, and outcome. Material and Methods: A retrospective chart review of 10 genitourinary fistulae cases at a referral hospital. Results: Ten patients: 4 vesicouterine fistulae (VUF), 4 vesicocervical fistulae (VCF), and 2 vesicovaginal fistulae (VVF). All VUF were complications of cesarean section (CS). Three VCF were secondary to cesarean subtotal hysterectomy, and one was subsequent to CS. One VVF was a complication of hysterectomy, and the other was secondary to a road traffic accident. Three VUF cases underwent surgical repair and one had fulguration. One VCF underwent surgical repair, and 3 had conservative management. One VVF underwent surgical repair, and one underwent fulguration. All patients were asymptomatic during follow up. Conclusion: The majority of cases were CS related, one was post gynecologic surgery, and one was related to an external injury. None were complications of prolonged or instrumental delivery. All cases were cured.

Key Words: Fistula, Genitourinary, Saudi Arabia, Urinary incontinence.

INTRODUCTION

Genitourinary fistulae can be classified anatomically, etiologically,[1] or by surgical size.[2] It is generally accepted that surgical fistulae occur after unrecognized incision in urinary structures, pressure necrosis, devascularization, or a combination of these mechanisms.[3] Obstetric fistulae occur because of damage during the course of prolonged labor, instrumentation during delivery, or as consequences of cesarean section (CS).[3] Historically, most vesicovaginal fistulae (VVF) were the result of birth trauma; accordingly, they remain the major urinary fistulae and the most common cause of urinary incontinence in many underdeveloped nations.[4] In developed nations, genitourinary fistulae usually occur as rare complications of gynecologic or other pelvic surgery, or of radiotherapy.[5] In North America, for example, the most common cause of VVF is injury to the bladder during hysterectomy,[6] and the risk is reported as being more than 1% after radical surgery and radiotherapy for gynecologic malignancies.[7] Although vesicouterine fistula (VUF) is an uncommon condition comprising only 1% to 4% of all urogenital fistulae, its prevalence has been rising in recent decades[8] because of the increased incidence of CS. VUF may develop immediately after a CS, or may not be observed until the late puerperium.[9] Management of genitourinary fistula is primarily surgical. [6] Nevertheless, conservative treatment or cystoscopic fulguration have met with some success.[9,10] The goal of our study was to determine the number of genitourinary fistula cases in our facility over 10 years, evaluate their causes, and assess their management and outcome.

MATERIALS AND METHODS

This was a retrospective review of all cases of genitourinary fistula between January 1995 and May 2006 at the Security Forces Hospital (SFH), Riyadh, Kingdom of Saudi Arabia (KSA). SFH is a referral hospital with approximately 500 beds. Through the medical coding system, all cases of genital fistula, urinary fistula, VVF, vesicocervical fistula (VCF), and VUF were identified and reviewed, whether they were admitted under the care of the Obstetrics and Gynecology or Urology Departments. Cases of rectovaginal fistula and other unrelated fistulae were excluded. Research committee approval was obtained prior to data collection. Both vaginal and abdominal repair were done in layers after excising the fistula tract. Abdominal repair was accompanied by interposition of an omental graft.

RESULTS

Ten cases of genitourinary fistula were identified during the study period: 4 cases of VUF, 4 cases of VCF, and 2 cases of VVF. Four cases were diagnosed by cystogram, 3 by cystoscopy, and one by hysterosalpingiogram. This information was missing from 2 files.

All VUF cases were complications of CS (Table 1). The reasons for doing CS included: elective CS with 5 previous CS (n=2, one with placenta previa), 3 previous CS (n=1), and one patient with 2 previous CS followed by vaginal delivery, and then a failed trial of vaginal delivery, which ended by emergency CS. Three of 4 post CS cases underwent surgical repair through an abdominal approach, and were kept on urethral catheterization for 9 to 11 days postoperatively. All 3 cases were asymptomatic at their last follow up from 7 months to 3 years after repair. The fourth case was initially treated with urethral catheterization for 2 months, but the patient continued leaking after catheter removal. Accordingly, cystoscopic fulguration of the tract was done, followed by urethral catheterization for 2 weeks, after which the patient became dry and remained so 10 years after repair.

Three of the 4 VCF cases were post emergency cesarean subtotal hysterectomy due to placenta accreta causing uncontrolled bleeding, and one was post emergency CS. In the 3 post emergency subtotal hysterectomy cases, CS was done as an elective repeated CS. One case had a recognized bladder injury that was subsequently repaired surgically. Two of the cases were treated by transurethral and suprapubic catheterization for 3 to 4 weeks, after which they were dry. The third patient declined any intervention, including catheterization. On her follow up visits up to 7 months after surgery, she continued to be dry. The post CS patient was treated by surgery through an abdominal approach followed by urethral catheterization for 10 days, after which the patient became dry, remaining so at a 7-month follow up visit. One of the 2 VVF cases was post hysterectomy due to uterine fibroid. The patient underwent

Table 1 – Genitourinary Fistula Cases

Management	Incident	Type	Parity	Age	Case No.
Abdominal repair	CS	VUF	P6+1	37	1
Abdominal repair	CS	VUF	P3+1	36	2
Abdominal repair	CS	VUF	P6+2	41	3
Cystoscopic fulguration; "Failed catheterization"	CS	VUF	P4+0	37	4
Bladder catheterization	CS	VCF	P4+0	28	5
Conservative management;"Patient refused any intervention"	Cesarean subtotal hysterectomy	VCF	P4+6	38	6
Bladder catheterization	Cesarean subtotal hysterectomy	VCF	P3+1	25	7
Abdominal repair	Cesarean subtotal hysterectomy	VCF	P5+0	33	8
Abdominal repair	Hysterectomy	VVF	P1+0	52	9
Trans-vaginal fulguration	RTA	VVF	P0	28	10

VUF: vesico-uterine fistula - CS : cesarean section - VCF: vesico-cervical fistula - VVF: vesico-vaginal fistula - RTA: road traffic accident

surgical repair through an abdominal approach, followed by suprapubic catheterization for 10 days, and then urethral catheterization for 13 days. Subsequently, the patient was completely dry through 6 months of follow up. The other case was post road traffic accident (RTA), and had multiple pelvic fractures and a vaginal hematoma ended by a VVF. This was treated by trans-vaginal fulguration, after which the patient became dry, and remained so at a 4-year follow up. Surgical repair of fistulae was done abdominally in all cases (5/5) because of location of the fistula and surgeons' expertise and preferences. Cases were operated on by 3 surgeons: 2 urologists, and one urogynecologist.

DISCUSSION

The incidence of VUF is increasing worldwide because of the increase in CS.[9] All 4 of our VUF cases were secondary to CS, similar to a study from Spain, where over a period of 25 years, 5 out of 6 (83%) VUF cases were secondary to CS. [11] In another series of 15 cases of VUF occurring over 7 years from Benin, 14 were related to CS. [12]

Surgery is the mainstay and definitive treatment of VUF, although spontaneous healing occurred in 5% of cases.[9] In our series, conservative management was tried unsuccessfully in one case of VUF, after which the patient underwent successful cystoscopic fulguration without additional treatment. A similar successful case of cystoscopic fulguration was reported; however, hormonal amenorrhea was induced prior to fulguration.[10] Four of our cases (40%) were the rare VCF, occurring as complications of elective CS, 3 of which required concomitant subtotal hysterectomy. Only one required surgical treatment after conservative management failed. Interestingly, one patient became asymptomatic with no intervention. Only 2 of our cases (20%) were VVF, which were secondary to an RTA and hysterectomy. This paucity of cases is similar to reports from developed countries,[5] and unlike the situation in many developing countries like Nigeria, where 889 cases of VVF over 7 years were found to be complications of labor and delivery.[13] Another report from Pakistan showed that over 7 years, 27 out of 32 cases of VVF were secondary to obstetrical trauma, out of which the success rate for surgical repair through the abdominal route was 100%, and through the transvaginal route was 80%. Repair was attempted through transvaginal fulguration in one case in that series, in which it failed.[14] Although one of our VVF cases was treated surgically, one was successfully treated by transvaginal fulguration. A study of 15 VVF cases with sizes less than 3.5 mm in the United States revealed 73% of the patients had complete resolution after fulguration of the fistulae, either cystoscopically or vaginally.[15] Unfortunately, the size of fistulae in our study was not mentioned in any of the charts or radiology reports. Another study reported 4 cases of VVF treated successfully using conservative management, which involved simple bladder drainage for periods ranging from 19 to 54 days.[16] A review by Haferkamp et al showed that surgical repair of VVF using transvaginal, transvesical, and transperitoneal approaches have similar results. They emphasize that adequate surgical exposure and mobilization of the bladder and vagina, successful excision of the fistula tract, tension-free closure, and placement of an interposition flap, when applicable, are essential components of successful repair.[17]

The majority of our cases (80%) were related to CS or its complications (cesarean subtotal hysterectomy). This finding is unlike reports from developed or developing countries, in which fistulae were mainly related to gynecological surgeries or obstructed labor, respectively.[4,5] Also in contrast to the world literature,[18,19] VUF was noted to be more common in our population than VVF. This could be explained by the number of CS performed per year in our facility, which was approximately 900 cases out of 7000 deliveries per year, compared with hysterectomies, which were only 20 cases per year. The significant low frequency of hysterectomies in our hospital and our society can possibly be explained by the commitment to preserving fertility as much as possible, and the myth that hysterectomy can negatively affect the quality of sexual life.

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