Section: Obstetrics and Gynaecology

Original Research Article

STUDY ON URETEROVAGINAL FISTULA: AETIOLOGICAL FACTORS AND TREATMENT OUTCOME IN A TERTIARY CARE TEACHING HOSPITAL BASED STUDY

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Abstract

Background: A ureterovaginal fistula is a connection between the distal ureter and the vagina. Although rare, it is a typical side effect of pelvic surgery. The etiological factors play a significant role in the management of ureterovaginal fistulas. Regarding this issue, we don't have a lot of knowledge. **Materials and Methods:** A total of 38 women with ureterovaginal fistulas at the centre were included in the study group on the basis of non-probability purposive sampling. **Result:** 33 participants (86.84%) had only ureterovaginal fistula, while 4 participants (10.52%) had both ureterovaginal and vesicouterine fistula, and the remaining one person (2.63%) had both ureterovaginal and vesicocervico vaginal fistula. **Conclusion:** The most frequent etiological factor identified in this research was an emergency caesarean section. Abdominopelvic ultrasound was found to be useful in confirming the diagnosis and locating the affected ureter. Hysterectomy for benign and malignant uterine diseases, when done properly, may lower the incidence of ureterovaginal fistula.

INTRODUCTION

A ureterovaginal fistula is a connection between the distal ureter and the vagina. Although rare, it is a typical side effect of pelvic surgery. The etiological factors play a significant role in the management of ureterovaginal fistulas. Regarding this issue, we don't have a lot of knowledge. Following pelvic surgery complications, such as those from genitourinary endoscopic operations, gynaecological and obstetric procedures, colorectal and vascular treatments, it frequently occurs. During gynaecological operations, ureteral injuries account for two thirds of all cases.[1,2] between 0.5% and 2.5% of main gynaecological operations, with abdominal hysterectomy accounting for more than half of all cases.[3] There is no doubt that caesarean sections are the most common obstetric procedure to induce ureteric damage.[4] Some authors claim that ureterovaginal and vesicovaginal fistulas can form concurrently.[5] Due to its close proximity to the female genital tract throughout much of its course in the pelvis, the pelvic ureter is especially vulnerable to harm during various gynaecological procedures. The locations where ureteric damage from UVF is most frequently seen are the base of the in fundibulopelvic ligament, the ureterovesical junction close to the cardinal ligaments, the location where the ureters intersect the pelvic brim at the ovarian fossa, and the level of the uterosacral ligament.[6] The most frequent presenting sign is the onset of persistent urinary incontinence one to four weeks after surgery. The patient usually has the ability to micturize in addition to the complaint of ongoing urine leakage. The disorder has devastating physical, social, and mental effects and significantly lowers the quality of life for those who are impacted.[7] UVF can be identified using a mix of the patient's medical history, a clinical examination, and the appropriate radiological tests, like intravenous pyelography and retrograde ureteropylography. These evaluations are essential for preventing surgery failure. Due to the absence of these essential investigative tools and the low socioeconomic status of our patients in our institution, ultrasound had to be used as a diagnostic tool. All patients had abdominal and pelvic ultrasonography, which is inexpensive, broadly available, and equally sensitive for diagnosing UVF.

Aim and Objective

- To assess the origins and effects of ureterovaginal fistula in females.

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Specific Objective

- To learn more about the sociodemographic characteristics of people with ureterovaginal fistulas.
- To assess the diagnostic outcomes of the various procedures.

MATERIALSANDMETHODS

In the Obstetrics and Gynecology department of the World College of Medical Sciences Research and Hospital, Jhajjr, this observational study was conducted. The ethical review board for the hospital granted its blessing to this study. A total of 38 women with ureterovaginal fistulas at the centre were included in the study group on the basis of non-probability purposive sampling. Prior to the data being collected, each participant gave their informed permission in writing. Ages of the participants varied from 15 and up. A pre-made questioner was used to collect patient details. Investigation methods, etiology, and clinical symptoms were all documented. The surgical process was noted, and the subsequent results were evaluated. The diagnosis was made based on the patient's history of surgical surgery followed by urinary incontinence. All the necessary data was gathered, processed, analyzed, and disseminated using MS Office and SPSS version 20.

RESULTS

A total of 38 patients underwent uterovaginal fistula surgery throughout the course of the research. Patients varied in age from 15 to 55; their mean age was 30.52±11.26. The majority of the cases (68.42%) belonged to the 15–35 age range. 35 of the cases had no family educated never attended school. Their modal parity was 1, and their parity varied from 1 to 12. The majority (39.47%) belonged to the parity group of 1-2, which was followed by the parity group of 5-6. However, among the post-hysterectomy patients, 15.18%, 13.15%, 26.31%, and 5.26% had abdominal hysterectomy for tumors, abdominal hysterectomy for malignancy, caesarean hysterectomy, or ruptured uterus with SVD. (Spontaneous vaginal delivery). 33 participants (86.84%) had only ureterovaginal fistula, while 4 participants (10.52%) had both ureterovaginal and vesicouterine fistula, and the remaining one person (2.63%) had both ureterovaginal and vesicocervicovaginal fistula. The left, right, and bilateral portions of the affected area in this research were found to be associated in 52.63%, 39.47%, and 7.89% of patients, respectively.

Table 1: Shows the socioeconomic group's attributes.

Variables		No. of patients (%) N=38
Age in years	15-24	12 (31.57%)
	25-35	14(36.84%)
	35-45	11(28.94%)
	45-55	01(2.63%)
Parity	1-2	15(39.47%)
	3-4	03(7.89%)
	5-6	07(18.42%)
	7-8	02(5.26%)
	9-10	06(15.78%)
	11-12	05(13.15%)
Marital Status	Married	37(97.36%)
	Divorced	01(2.63%)
Educational Status	No family educated	35(92.10%)
	Secondary	02(5.26%)
	Tertiary	01(2.63%)

Table 2: Shows the etiological variables affecting individuals

Factors	No. of participants (%)
Post-hysterectomy (n=23; 60.52%)	
Abdominal hysterectomy for fibroids	06 (15.18%)
Abdominal hysterectomy for malignancy	05 (13.15%)
Cesarean hysterectomy	10 (26.31%)
Rupture uterus with SVD	02 (5.26%)
Post-cesarean section (n=15; 39.47%)	

Table 3: Affected Side, Ultrasound Results, Treatment Approach, and Repair Outcomes.

Variables		No. of patients (%) N=38
Affected Ureter	Left	20(52.63%)
	Right	15(39.47%)
	Bilateral	03(7.89%)
Ultrasound findings	Left hydroureteronephrosis	20(44.73%)
	Right hydroureteronephrosis	15(39.47%)
	Bilateral hydroureteronephrosis	05(13.15%)
	Normal study	01(2.63%)
Treatment approach	Abdominal reimplantation	33(86.84%)

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	Boari-flap	03(7.89%)
	Reimplantion through vaginal route	02(5.26%)
Outcome of repair	Healed and continent	33(86.84%)
	Healed with residual incontinence	03(7.89%)
	Healed UVF with residual VCVF	02(5.26%)

DISCUSSION

The purpose of this research was to assess the causes and prognosis of female ureterovaginal fistula. Ureterovaginal fistulas can be caused by ureteral injury from operations like abdominal, radical, vaginal, caesarean section, hysterectomy, anterior colporrhaphy, vascular/urological surgery, including retropubic bladder neck suspensions, or even colon surgery.[8] This kind of fistula can also be brought on by radiation treatment, locally advanced cancer, pelvic trauma, or chronic inflammatory diseases (CIDs), like actinomycosis.[9] The main causes of ureterovaginal fistula are usually thought to be obstetric factors.[10] We found that of the total participants in this research, 60.52% were post-hysterectomy patients, and the remaining 39.47% were post-cesarean section patients when we analysed the etiological factors among the participants. Contrarily, among the post-hysterectomy patients, 15.18%, 13.15%, 26.31%, and 5.26%, respectively, had abdominal hysterectomy for fibroids, abdominal hysterectomy for malignancy, caesarean hysterectomy, and rupture uterine with SVD. (Spontaneous vaginal delivery). According to Indian research,[11] caesarean sections and caesarean hysterectomies account for up to 64.2% of cases of ureterovaginal fistula. This is similar to their research, which discovered that 70.6% of cases involve caesarean sections, caesarean hysterectomies, and spontaneous vaginal birth. (SVD). When we looked at the affected area in this research, we found that 52.63%, 39.47%, and 7.89% of people had bilateral, right, or left portions that were related to fistula. Additionally, they claimed that a previous study had a left-handed bias.[12] This may be due to the fact that the gynaecologist performing the procedure usually stands to the patient's right, blocking their vision as clamps are applied to stop "left-sided bleeding."[8] For "combined ureterovaginal or vesicovaginal fistulas," bladder repair may be necessary.[13] In addition to these, bilateral ureterovaginal fistulas have also been reported.[14] All of the patients managed to stay dry and avoided relapse.

CONCLUSION

In conclusion, emergency operations like emergency hysterectomies and caesarean sections frequently result in ureterovaginal fistula development. When performed correctly, hysterectomy for benign and malignant uterine illnesses may reduce the occurrence of ureterovaginal fistula. Preventing ureteric damage during abdominal hysterectomy for complicated pelvic or uterine-ovarian tumours is possible with preoperative bilateral double J ureteric stenting. This research was single-centered and had a small sample size. As a consequence, the findings of this study could not fairly depict the state of affairs across the entire country. To get more accurate findings, we advise conducting additional research on the same subject.

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