Section: Obstetrics & Gynaecology

Research

URETEROVAGINAL FISTULA: AETIOLOGICAL FACTORS AND TREATMENT OUTCOME: A TEACHING HOSPITAL BASED STUDY

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Abstract

Background: A communication between the distal ureter and the vagina is called a ureterovaginal fistula. It is an uncommon but generally common side effect of pelvic surgery. The ureterovaginal fistula treatment process heavily relies on the etiological variables. We don't have a lot of information about this problem. The aim is to this study's purpose was to assess the causes and prognosis of ureterovaginal fistula in women. **Materials and Methods:** A total of 34 patients had uterovaginal fistula surgery throughout the duration of the trial. However, only 31 case notes were approved for data entry and analysis. **Result:** When we investigated the diagnostic results for the different types of fistula we discovered, we discovered that 27 individuals had solely ureterovaginal fistula, 9.6% had ureterovaginal and vesicouterine fistula, and 3.2% had ureterovaginal and vesicocervico vaginal fistula. Left, right, and bilateral portions were related with fistula in 51.6%, 38.7%, and 9.7% of individuals in this study when we looked at the affected area. **Conclusion:** In this study the emergency cesarean section was found to be commonest etiological factor and the use of abdominopelvic ultrasound was found to be effective in the confirmation of diagnosis and identifying the affected ureter. Well planned hysterectomy for benign and malignant uterine pathologies may reduce the frequencies of ureterovaginal fistula.

INTRODUCTION

A communication between the distal ureter and the vagina is called a ureterovaginal fistula. It is an uncommon but generally common side effect of pelvic surgery. The ureterovaginal fistula treatment process heavily relies on the etiological variables. We don't have a lot of information about this problem. It frequently happens following a pelvic surgery complication, such as genitourinary endoscopic procedures, gynaecological and obstetric surgeries, colorectal and vascular surgeries. Two-thirds of all ureteral injuries happen during gynaecological procedures.[1] Ranging from 0.5% to 2.5% of major gynaecological surgeries, with abdominal hysterectomy making up more than half of all instances.[2] Of all obstetric operations, caesarean section is unquestionably the leading cause of ureteric damage.[3] According to some writers, vesicovaginal and ureterovaginal fistulas can develop simultaneously.[4] The pelvic ureter is particularly susceptible to damage during various gynaecological procedures because of its close relationship to the female genital tract throughout its course in the pelvis. Infundibulopelvic ligament base, ureterovesical junction near cardinal ligaments, point where ureters cross pelvic brim at ovarian fossa, and level of uterosacral ligament are the most often observed sites of ureteric damage resulting to UVF.[5] One to four weeks after surgery, the beginning of persistent urine incontinence is the most typical presenting symptom. In addition to the complaint of ongoing urine leakage, the patient is typically able to micturize. The disorder drastically lowers the quality of life for those who are affected and is linked to devastating bodily, social, and mental repercussions.[6] A combination of the patient's medical history, a clinical examination, and the right radiological tests, such as intravenous pyelography and retrograde ureteropylography, can be used to diagnose UVF. These tests are crucial to avoiding surgical failure. The use of ultrasound as a diagnostic tool was necessary due to the lack of these necessary investigative tools and the poor socioeconomic status of our patients in our institution. Because abdominal and pelvic ultrasonography is affordable, widely accessible, and similarly sensitive in the diagnosis of UVF, it was performed on all patients.

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Aim & Objective

- To evaluate the causes and consequences of ureterovaginal fistula in women.

Specific Objective:

- In order to obtain information on the socio-demographic traits of ureterovaginal fistula patients.
- To evaluate the diagnostic results of the many kinds of operations.

MATERIALS AND METHODS

The period from October 2020 to August 2022 was used for this observational study, which was carried out in the Obstetrics and Gynecology department at Venkateshwara Institute of Medical Sciences, Gajraula. The hospital's ethical committee gave its approval for this study. On the basis of non-probability purposive sampling, a total of 34 women with ureterovaginal fistulas at the centre were included in the study population. All participants provided proper written consent prior to the collection of data. Participants ranged in age from 15 and up. Patient information was gathered using a pre-designed questionnaire. Records were kept on the investigative techniques, aetiology, and clinical manifestations. The planned surgical procedure was noted, and the post-operative outcomes were assessed. The history of surgical intervention followed by urine incontinence was used to make the diagnosis. MS Office and SPSS version 18 were used to gather, process, analyze, and disseminate all the data as needed.

RESULTS

During the course of the study, uterovaginal fistula surgery was performed on a total of 34 patients. Only 31 case notes, however, were accepted for data input and analysis. When examining the participant ages in this study, we discovered that 35.5% (n=11) of the patients were in the 25–35 age range. Then, correspondingly, 32.3%, 29.03%, and 3.2% of the patients were in the 15–25, 35–45, and 45–55 age categories. In addition to this, when we looked at the parity of the participants, we found that the majority of them (n=13; 41.9%) had 1-2 parity. Then 06(19.4%) had 5-6 parity, 04(12.9%) had 9-10, 03(9.7%) had 11–12, 03(9.7%) had 3–4, and 02(6.45%) had 7-8 parity. According to the participants' marital status, we discovered that 30 patients (96.8%) were married, whereas only 1 patients (3.2%) were divorced. In our analysis of the participants' educational backgrounds, we found that 28 (90.3%) of the participants had completed non-formal education. The remaining participants completed secondary and tertiary level schooling after 02 (6.45%) and 01 (3.2%). In evaluating the etiological factors among the participants, we discovered that of the total participants, 58.06% were post-hysterectomy patients, while the remaining 41.93% were post-cesarean section patients. On the other hand, abdominal hysterectomy for fibroids, abdominal hysterectomy for malignancy, caesarean hysterectomy, and rupture uterus with SVD were among the post-hysterectomy patients with 16.12%, 12.9%, 25.8%, and 3.2%, respectively. When we investigated the diagnostic results for the different types of fistula we discovered, we discovered that 27 individuals had solely ureterovaginal fistula, 9.6% had ureterovaginal and vesicouterine fistula, and 3.2% had ureterovaginal and vesicocervicovaginal fistula. Left, right, and bilateral portions were related with fistula in 51.6%, 38.7%, and 9.7% of individuals in this study when we looked at the affected area.

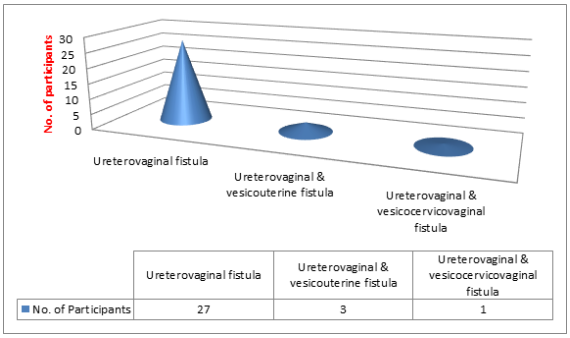

Figure 1: Diagnostic results on the participants' fistula types.

Table 1: characteristics of the socioeconomic group.

Variables		No. of patients (%) N=34
Age in years	15-25	10 (32.3%)
	25-35	11(35.5%)
	35-45	09(29.03%)
	45-55	01(3.2%)
Parity	1-2	13(41.9%)
	3-4	03(9.7%)
	5-6	06(19.4%)
	7-8	02(6.45%)
	9-10	04(12.9%)
	11-12	03(9.7%)
Marital Status	Married	30(96.8%)
	Divorced	01(3.2%)
Educational Status	No family educated	28(90.3%)
	Secondary	02(6.45%)
	Tertiary	01(3.2%)

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Table 2: Etiological factors among participants

Factors	No. of participants (%)
Post-hysterectomy (n=18; 58.06%)	
Abdominal hysterectomy for fibroids	05 (16.12%)
Abdominal hysterectomy for malignancy	04 (12.9%)
Cesarean hysterectomy	8 (25.8%)
Rupture uterus with SVD	1 (3.2%)
Post-cesarean section (n=13; 41.93%)	

Table 3: Affected Side, Ultrasound Results, Method of Treatment, and Repair Results.

Variables		No. of patients (%) N=34
Affected Ureter	Left	16(51.6%)
	Right	12(38.7%)
	Bilateral	03(9.7%)
Ultrasound findings	Left hydroureteronephrosis	14(45.2%)
	Right hydroureteronephrosis	12(38.7%)
	Bilateral hydroureteronephrosis	04(12.9%)
	Normal study	01(3.2%)
Treatment approach	Abdominal reimplantation	27(87.09%)
	Boari-flap	03(9.7%)
	Reimplantion through vaginal route	01(3.2%)
Outcome of repair	Healed and continent	26(83.9%)
	Healed with residual incontinence	04(12.9%)
	Healed UVF with residual VCVF	01(3.2%)

DISCUSSION

This study's objective was to evaluate the causes and prognosis of ureterovaginal fistula in females. Ureteral injury from procedures including abdominal, radical, vaginal, caesarean section, hysterectomy, anterior colporrhaphy, vascular/urological surgery, including retropubic bladder neck suspensions, or even colon surgery can result in ureterovaginal fistulas.[7] Radiation therapy, locally advanced cancer, pelvic trauma, or chronic inflammatory disorders (CID) such actinomycosis can also cause this type of fistula.[8] Obstetric factors are typically thought to be the main contributors to ureterovaginal fistula.[9] In this study's analysis of the etiological factors among participants, we discovered that of the total participants, 58.06% were post-hysterectomy patients, while the remaining 41.93% were post-cesarean section patients. On the other side, abdominal hysterectomy for fibroids, abdominal hysterectomy for malignancy, caesarean hysterectomy, and rupture uterus with SVD were among the post-hysterectomy patients with 16.12%, 12.9%, 25.8%, and 3.2%, respectively (Spontaneous vaginal delivery). According to an Indian study,[10] caesarean sections and caesarean hysterectomies are the most common causes of ureterovaginal fistula, accounting for up to 63% of cases. This is similar to their study, which found that caesarean sections, caesarean hysterectomies, and spontaneous vaginal birth account for 70% of cases (SVD). Left, right, and bilateral portions were related with fistula in 51.6%, 38.7%, and 9.7% of individuals in this study when we looked at the affected area. They also stated that left-sidedness predominated in an earlier investigation.[11] This may be because the gynaecologist doing the operation typically stands to the right of the patient, obstructing their view as clamps are used to stop "left-sided bleeding."[7] The care of "combined ureterovaginal or vesicovaginal fistulas" may call for bladder reconstruction.[12] Bilateral ureterovaginal fistulas have also been documented in addition to these.[13]

CONCLUSION

In conclusion, ureterovaginal fistula typically develops during emergency procedures like emergency hysterectomies and caesarean sections. Hysterectomy for benign and malignant uterine diseases, when done properly, may lower the incidence of ureterovaginal fistula. Preoperative bilateral double J ureteric stenting can be used during abdominal hysterectomy for complex pelvic or uterine-ovarian tumours to prevent ureteric damage. This study had a limited sample size and was single-centered. Therefore, the results of this study could not accurately reflect the situation across the entire nation. We suggest performing further studies on the same topic in order to obtain more precise results.

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