



## **Clinical Characteristics of Urogenital Fistulas in PMCH Nawabshah: A Cross-sectional Study**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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### **ABSTRACT**

**Objective:** To analyze the clinical characteristics of urogenital fistulas reported at PMCH Nawabshah.

**Methodology:** A cross-sectional study, concluded in three years from January 2018 to December, 2020 in all ages patients with urogenital fistulas (UGF). The referred cases of UGF to gynecology and Urology Departments of the PMCH Nawabshah. The females with UGF results after elective

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caesarean section and gynecologic surgery including hysterectomy, prolapse repair and myomectomy were included whereas patients with UGF results due to other operative measures which includes emergency caesarian section, traumatic and congenital were excluded from this study. The data were analyzed thru SPSS version 22.0.

**Results:** Total 247 patients were included in present study. The age of patients were 20 years to 66 years with mean age 38.99+SD7.992. Frequency and percentages of different variables that were included in this study were for the demographic and co morbidities. Majority of patients were from rural setup, house wives having low education profile, belonging to low socioeconomically and educational status. DM and HTN were the common co-morbidities observed in study population. The different frequencies and percentages were calculated for the different surgical procedure adopted before the development of fistulas, UVF and OF was assessed in different procedures. Hysterectomies was most common surgical procedure than C/S and others. P value was statistically insignificant here 0.696. Wound infections were also seen in post operated cases with high ratios due to contaminations; wound infection was present in 20.6% cases, which was very high.

**Conclusion:** Present study revealed that the many of urogenital fistulas treated and repaired patients at our hospital setup, associated with iatrogenic obstetric origin and no any patients of UGF associated with obstructed laboras it is contrasting with other developing countries. Recorded fistulas were cured after the first surgical repair.

*Keywords: Vaginal repair; vesico-vaginal fistula; surgical outcomes; abdominal repair; lower urinary tract symptoms.*

## 1. INTRODUCTION

A vesicovaginal fistula (VVF) is a serious medical complication after vaginal or bladder surgery results in urine leaks from vaginal. A VVF is an opening that develops between the bladder and the wall of the vagina. The only way to repair this opening is through surgery [1]. The published literature regarding classification of the fistula have not acceptable standard method. Previously GOH classifications were based on subjective variations, which just characterized the outside urinary meatus as a kind of perspective point for estimating the distance of the distal edge of the fistula. Further sub-categories include the size of the fistula, degree of scarring, and vaginal length [2]. The symptoms of VVF include leakage of urine or feces through the vagina, whereas symptoms of rectal and anal fistulas include throbbing pain and swelling in the rectal area due to abscess formation, sometimes the pus draining on nearby skin due to the fistula. Patients with UGF experiences fever resulting from the infection. The risk factors of vaginal fistula such as recent pelvic surgery along with infection. Clinical assessment determined by an initial pelvic examination with a speculum and diagnostic testing include fistula gram, dye tests, cystoscopy, and other imaging studies [3].

In developing countries cause of urogenital fistulas is different and most of the cases is a

result of rehash cesarean sections. No any single cases were caused by obstructed labor but rare happened after hysterectomy. Most patients were restored after the essential surgical repair [4]. The frequency distribution of urogenital fistulas in developing countries is 97% with complication of obstructed labor [3-4]. The prevalence of UGF in primiparous is very high as three to four per 1000 vaginal deliveries. It is occurred due to delay in lookout for medical-health care facilities [5-8]. As far as VVF medical complication is concerned huge measure of work has been done locally just as globally. The aim of present study was to evaluate the causative factors of ureterovaginal fistula and to assess the performance of operative intervention.

The present study might be helpful to improve the clinical assessment of Urogenital fistula and produce dynamic impact on training and practice in obstetrics and gynecologic specialty in Nawabshah Pakistan.

## 2. OPERATIONAL DEFINITIONS

### 2.1 Ureterovaginal Fistula

It is an abnormal passage present between the ureter and the vagina. It presents as urinary incontinence [9].

### 2.2 Obstetric Fistula

It is a medical condition in which a hole grows in the birth canal as a result of delivery. This passage can be produce between the vagina ureter or bladder and rectum. It can result in incontinence of urine or feces [10].

### 3. METHODOLOGY

The cross sectional study was conducted at the Urogynecology and Urology Departments of the PMCH Nawabshah, a tertiary referral center in Sindh Pakistan, January 2018 to December, 2020. Females of all ages with urogenital fistulas were included and female patients with other than UGF were excluded. The non-probability purposive sampling technique was used. Patients history, clinical presentation and their biochemical reports including complete blood picture (CBC), Random blood sugar (RBS), serum urea and creatinine were done from in all participants. KUB ultrasound and intravenous urography was performed for the accurate diagnostic. The Cystoscopically the bladder was assessed for indication of vesicovaginal fistula or other bladder pathology, this procedure was followed by vaginal speculum examination with

cystoscopy. The data was entered and analyzed by using SPSS 22.0. All data were expressed as mean and standard deviation by applying student t-test whereas percentage and frequencies were calculated by chi square test.

### 4. RESULTS

Total of 247 patients were included in present study. The minimum age of patients were 20 years, while maximum 66 years with mean age 38.99+SD7.992 as shown in Table 1.

The different frequencies and percentages were calculated for the different surgical procedures adopted before the development of fistulas, UVF and OF were assessed in different procedures.

Hysterectomies were most common surgical procedures than C/S and others. The p-value was statistically insignificant here 0.696. as shown in Table 2.

The wound infections were also seen in post operated cases with high ratios due to contaminations, wound infection was present in 20.6% cases, which was very high as shown in Fig. 2.

Table 1. Descriptive statistics

|              | N   | Minimum | Maximum | Mean  | Std. Deviation |
|--------------|-----|---------|---------|-------|----------------|
| Age in Years | 247 | 20      | 66      | 38.99 | 7.992          |

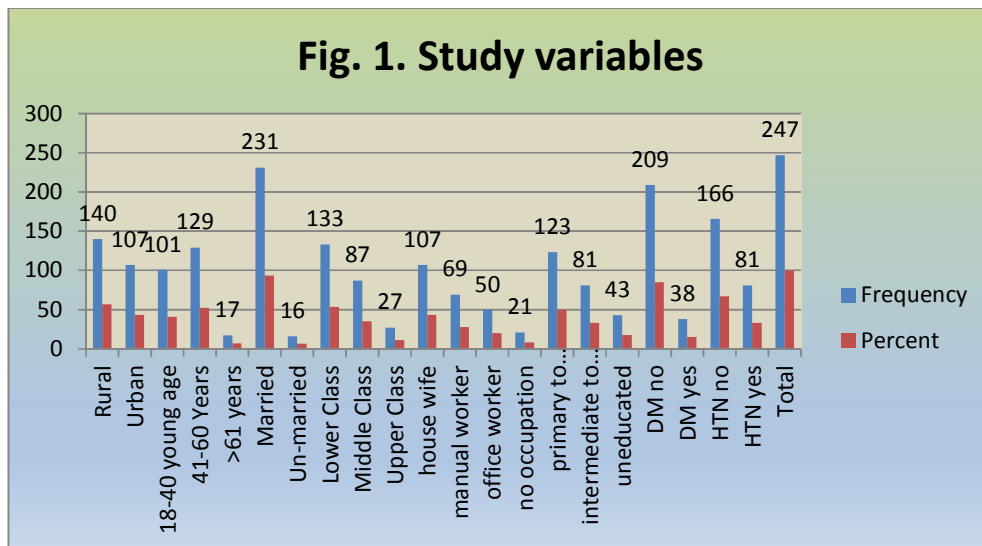


Fig. 1. shows the frequency and percentages of different variables that were included in this study the demographic and co morbidities. Majority of patients were from rural setup, house wives having low education profile, belonging to low socioeconomically and educational status. DM and HTN were common co morbidities observed in study population

**Table 2. Fistula \* surgical procedures crosstabulation**

|         |            |            | Surgical procedures |                 |            |                    |          | Total  | Asymp. Sig. (2-sided) |                  |                              |
|---------|------------|------------|---------------------|-----------------|------------|--------------------|----------|--------|-----------------------|------------------|------------------------------|
|         |            |            | Hystrectomy         | Ceasren Section | Myomectomy | Uv Prolapse Repair | Abortion |        | Pearson Chi-Square    | Likelihood Ratio | Linear-by-Linear Association |
| Fistula | UV fistula | Count      | 80                  | 55              | 23         | 17                 | 6        | 181    | .696                  | .690             | .838                         |
|         |            | % of Total | 32.4%               | 22.3%           | 9.3%       | 6.9%               | 2.4%     | 73.3%  |                       |                  |                              |
|         | OF fistula | Count      | 32                  | 16              | 11         | 4                  | 3        | 66     |                       |                  |                              |
|         |            | % of Total | 13.0%               | 6.5%            | 4.5%       | 1.6%               | 1.2%     | 26.7%  |                       |                  |                              |
| Total   |            | Count      | 112                 | 71              | 34         | 21                 | 9        | 247    |                       |                  |                              |
|         |            | % of Total | 45.3%               | 28.7%           | 13.8%      | 8.5%               | 3.6%     | 100.0% |                       |                  |                              |

\*OF=obstetric fistula, UV=urovesical fistula

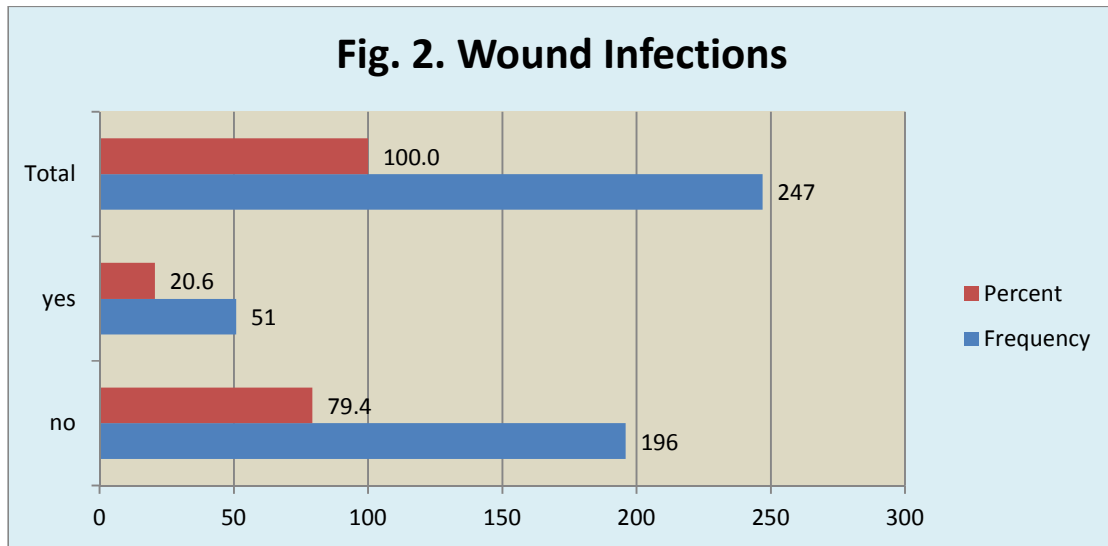


Fig. 2. Post-operative wound infection

## 5. DISCUSSION

Ureterovaginal fistula is emergency medical complications results of inexperienced surgeons. Early and prompt surgical intervention produce excellent outcomes. Fistula can repair as soon as possible within four weeks after the initiation of the complaint. Urogenital fistula is a not only medical complication but serious social and psychological condition which produce an adverse consequence in the ladies lives [11,12]. The complication of UGF in developing occurred due to prolong and obstructed labor [12]. In Africa the incidence of fistulas estimated as high with obstetric reasons, three to four cases per 1000 vaginal deliveries (70-96%) were reported of the total fistulas [5,8]. In comparison of developed countries the 83.2% of fistula are related to surgical procedures [5]. In current study majority of fistulas were presented as a complication of surgery. A vesicovaginal fistula is the most common type of fistula, in which the woman's vagina is connected to the urinary bladder results leakage of urine from the vagina and infection of vagina and bladder results in frequent vaginal and bladder infections. In developed countries enterovaginal fistula, develop between the vagina and the large intestine and rectovaginal fistula, in which feces leak from the vagina are uncommon types of fistula. However common in developing country and especially in young pregnant ladies due to prolong and difficult labor [13]. In present study the most common fistula was UV fistula. Few studies reported that, the

incidence of iatrogenic obstetric fistula in developing countries has been high [14]. Though in distinct causes of fistula whether these are results of ischemia during complicated labor or iatrogenic obstetric origin. Most of the patients were suffered due to delayed diagnosis and treatment [15]. In developed countries the incidence is very low 0.1-10% after simple or radical hysterectomy and the common causes of UGF are iatrogenic obstetric causes, gynecologic surgery and radiation [4,16]. In our study the fistulas were related directly as surgical complications.

Saudi Arabia included in developing countries by World Health Organization (WHO) [17], 68.8 % of cases of UGF reported in study occurred due to repeat/pervious cesarean deliveries, rather than obstructed labor [4].

The most common complication of UGF is urinary leakage following gynecological or obstetric surgery, which causes social and psychological morbidity. The UGF may connect with the vagina or less commonly with the fallopian tube or uterus [18]. The incidence of iatrogenic ureteral injury throughout major gynecological surgery is about 0.5- 2.5% [19-20]. The risk factors of UGF development include obesity, pelvic inflammatory disease, endometriosis, pelvic malignant disease and radiation [21]. The ureterovaginal fistula repair complications include ureteral stricture and ureterovaginal extravasation formation. The urinary leak can be treated with percutaneous

nephrostomy drainage, Foley catheter drainage and ureteral stents. For short ureteral strictures, minimally invasive endoscopic treatments can be performed. In present study only one case of wound infection and one cases of urinary tract infection were reported in responses of the treatment [22]. The wound complications were also common in present study, the possible reason was the poor compliance of drugs and management of wound under high antiseptic measures were failed.

## 6. CONCLUSION

Present study revealed that the many of urogenital fistulas treated and repaired patients at our hospital setup, associated with iatrogenic obstetric origin and no any patients of UGF associated with obstructed laboras it is contrasting with other developing countries. Record fistulas were cured after the first surgical repair.

Ureterovaginal fistula is medical emergency complication, cases were repaired by the residents and registrars likewise emergency caesarean section and hysterectomies. The excellent output of surgical producers for ureterovaginal fistula without recurrence or very minimal complications.

## ETHICAL APPROVAL

The ethical permission was obtained from the ethical committee of research prior to the study.

## CONSENT

Informed written and verbal consent was taken from all participants of the present study.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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