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Research Article

EVALUATION OF DIFFERENT PROGNOSTIC FACTORS WHICH REGULATE THE OUTCOME BY SURGICAL REPAIRING OF VESICOVAGINAL FISTULA

¹Dr Shahid Latif, ²Dr Muhammad Awais, ³Dr Maria Khalid¹Medical Officer, RHC Gaggo, Vehari, ²Medical Officer, DHQ Hospital Sheikhpura, ³Rural Health Center Domeli, Jhelum.

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Abstract:

Introduction: Vesicovaginal fistula (VVF), communal among urogenital fistulas, is regarded as obstetric morbidity expected to consequence more than two million women worldwide. The rate of VVF is lower in industrial countries where it happens as an obstacle of pelvic surgeries or radiation therapy.

Objective: Evaluation of different prognostic factors which regulate the outcome by surgical repairing of vesicovaginal fistula.

Methods: In Jinnah Hospital Lahore, a reflective survey was held which is composed of the data relevant to victims of vesicovaginal fistula repair during February 2015 to July 2018. The record was examined through SPSS 22 software defining odds ratio having 95% confidence interval.

Results: Data of 640 victims was investigated with success rate of 558 (87.2%) cases. This investigation revealed that reappearance of disease was expressively linked to multiplicity (9-fold recurrence risk), pre-operative size (10-fold reappearance risk for fistula > 2cm equated to <1cm), secondary repair (5-fold risk) and extent of the fistula (3-fold risk). Insinuation of flap and tardy rebuilding (between 6 weeks and 1 year) was linked to effective surgical results. Aetiology, age, parity, repairing route and fistula location were not substantial ($p > 0.05$ each) prognostic factors for reappearance.

Conclusion: For effective restoration of vesicovaginal fistula cautious determination of several factors is needed comprising number, size, previous efforts for restoration and interval of fistula.

Keywords: Prognostic factors, Recurrence, Surgical repair, Vesicovaginal fistula.

Corresponding author:**Dr. Shahid Latif,**

Medical Officer, RHC Gaggo, Vehari.

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INTRODUCTION:

Vesicovaginal fistula (VVF), communal among urogenital fistulas, is regarded as obstetric morbidity expected to consequence more than two million women worldwide. [1] The rate of VVF is lower in industrial countries where it happens as an obstacle of pelvic surgeries or radiation therapy. [2,3] Developing countries face the issue of VVF which is caused as a result of ignored, extended or congested childbirth. [4]

The effective treatment of VVF is surgical restoration with accomplishment of 85%-95% [5]. Even though open surgical restoration is regarded as the best treatment of VVF, its effectiveness has been confronted by current studies revealing identical results with 90% success rate that can be accomplished through the use of laparoscopic restoration of VVF having the benefit of less incision, lower surgical trauma and fast recovery in postoperative duration [6-8]. Through utilization of robotics art similar results can be obtained [9]. The deficiency of expertise and continuing outcomes of VVF restoration, open surgical repair continues to be the treatment of choice for VVF.

VVF has substantial influence on the victims regarding physical, social or mental behavior [10] The victims are economically weak to deal with expenditures regarding VVF. These aspects make the patients nervous and disturbed about the results. So, psychotherapy of victims before and after the operation can lead to successful VVF restoration [11].

Despite of extensive investigation, there are limited number of studies talking about the aspects for better results of surgical restoration. The present survey was conducted to study features of patients, fistula and surgical restoration to discover the aspects aiding diagnosis of surgical restoration of VVF.

PATIENTS AND METHODS:

At Jinnah Hospital Lahore, a survey was held consisting of the record relevant to the victims of VVF restoration from February 2015 to July 2018. In the beginning due to lack of ethical assessment in hospital, approval was obtained from directors of hospital. The patients gone through surgical VVF restoration only once were also counted in the study. The patients having other surgeries with incomplete data were not counted. For acknowledgment of patients Microsoft Excel Datasheets were utilized. The data records of every patient were revised including victims' age, parity, aetiology of VVF (obstetric versus no obstetric causes). Time duration, size, location and number of fistula were also noticed. Relating to the surgery, rate of restoration, utilization of flaps and quantity of efforts were also recorded. Results of Fistula

restoration were recognized. Due to non-availability of certification, intra and peri-operative difficulties were not revised in this study.

Antiquity records of all the patients were noted including physical examination, complete blood count(CBC), serum biochemistry and urine analysis. VVF recognition was done through cystourethrogram. Concomitant ureterogenital fistulae were governed through intravenous urography (IVU). Prior to operation, the victims were given anesthesia(EUA) as well as cystoscopy to determine the features of the fistula. We regarded VVF value as 'less' due to location of fistula under the interureteric ridge, and 'large' when it was on the upper side of ridge. Choice of operation depends on the approachability from vagina. The operation was conducted by 2 surgeons having huge expertise of almost 10 years in female reconstructive urology.

Vaginal restoration was performed in lithotomy position. Fistula territory was recognized and manifested by injecting a Foley's catheter through vagina. This was removed around the catheter after that bladder and vagina were sealed discretely in layers. Martius flap was regarded in manifold and huge fistulae having substantial fibrosis.

Method of intra-peritoneal technique was utilized for abdominal restoration. Bladder was intersected from the vault lower to the fistula. Removal of fistula was performed by fastening bladder and vagina discretely. The repositioning of omental flap among restoration and the vaginal wall was performed where it was to be considered compulsory(because of huge or various fistulae or disproportionate fibrosis of the neighboring tissues).

After surgery all the victims were on catheterisation for a duration of 14 days. They continued to be present in hospital during the time of catheterisation along with some more days. Prior to Foley's Catheter eradication(if there is no outflow of divergence material done after cystourethrogram),Cystourethrogram was completed after 14 days to operative restoration. In case of divergent extravasation, by keeping the patient catheterised additional supervision was performed depending on the extent of outflow. After leaving the hospital, patients were examined for at least 14-30 days or up to 3 months depending upon the condition. Effective operative restoration leads to no urinary outflow on cystourethrogram after 14 days to surgery. While clinical analysis on consequent development continues to 4 months after operation.

Data evaluation was performed using SPSS 22. For evaluation of distinct variables, univariate analysis was performed. Substantial variables during univariate analysis were referred to multivariate evaluation. Value of $P < 0.05$ was regarded noteworthy and odds ratio(OR) were calculated through 95% confidence interval (CI)

RESULTS:

Evaluation of the data was performed on record of 640 (63.8%) victims out of 103 operative restorations, eliminating 363 (36.2%) having inappropriate data. Average age of patients was about 32.5 ± 9.488 years ranging approximately 13-66 years. Mean equivalence was about 3.35 ± 2.745 ranging 0-13 years approx. A mean interval of 58.4 ± 1302.71 months was also recorded representing progress of VVF and operation with less interruption of approximately 4 days. Main reason of fistula was based on certain events in 438(68.4%) victims including hysterectomy 109(17%) and Caesarean cases 88(13.75%). A total of 367 (57.3%) victims were treated with vaginal restoration. A little success rate was shown by 558(87.2%) patients. (Table-1).

During Univariate evaluation, results of menopause and parity were appeared to be statistically non-significant i.e, ($p=0.15$) and ($p=0.14$) respectively. There was no substantial variation among the results of obstetric and non-obstetric causes ($p=0.235$) and path of restoration($p=0.47$). Extent of fistula($p < 0.002$), size($p=0.01$), number ($p < 0.002$) act as substantial influences. Meanwhile, efforts of restoration regarded as Primary vs. Secondary restoration($p=0.002$) and flap interposition ($p=0.001$) were also substantial.

Multivariate evaluation showed that the reappearance of VVF has a substantial linkage towards multiplicity (9-fold reappearance hazard), size before surgery(10-fold reappearance hazard for fistula > 2 cm in comparison to < 1 cm), secondary restoration (5fold hazard) and extent of the fistula(3-fold risk). Interposition of flap and late reappearance during 6 weeks to 1 year was linked to effective operative results. Age, parity, aetiology, path of restoration and site of fistula were non-substantial($p > 0.05$ each) prognostic aspects for reappearance (Table-3).

Table-1: Descriptive data

Total number	640
Mean age (years)	$32.5(13-66) \pm 9.488$
Mean parity	$3.35(0-13) \pm 2.745$
Mean duration (months)	$58.4(4-14600)$ days)
Aetiology	± 1302.71
Obstetric procedures	438(68.4%)
Hysterectomy	109(17%)
Caesarean section	88(13.8%)
Non-gynaecologic pelvic surgeries	1(0.2%)
Episiotomy	1(0.2%)
Trauma	3(0.5%)
Route of repair	
Transvaginal route	367(57.3%)
Transabdominal route	273(42.7%)
Outcome of repair	
Successful	558(87.2%)
failed	82(12.8%)

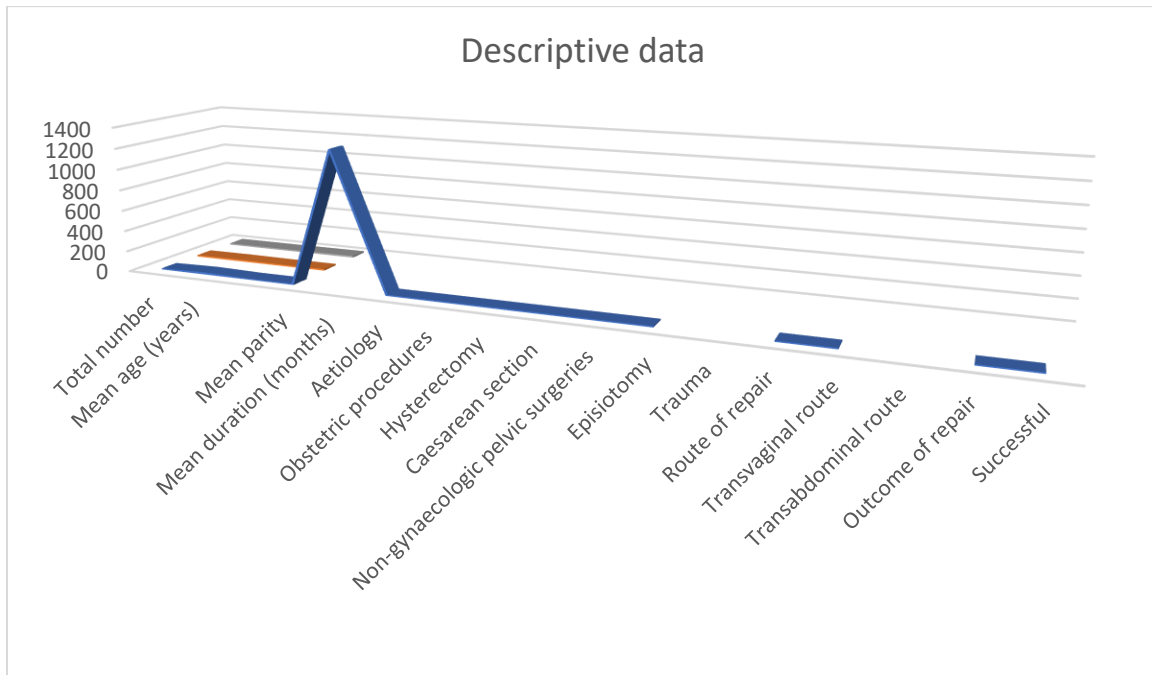


Table-2: Univariate analysis.

	Successful	Failed	p-value
Patient-related factors			
Menopausal status			
Pre-menopausal	446	71	
Post-menopausal	112	11	0.15
Parity			
Nulliparous	45	9	
Uniparous	152	26	
Multiparous	241	38	0.14
Grand multiparous	120	9	
Fistula related factors			
Aetiology			
Obstetric	386	60	0.23
Non-obstetric	172	22	
Duration			
<6 weeks	69	16	<0.002
6 weeks - 1 year	317	25	

>1 year	172	41	
Size			
<1 cm	256	13	
1 cm – 2cm	216	22	<0.002
>2 cm	86	47	
Number			
single	428	23	<0.002
Multiple	130	59	

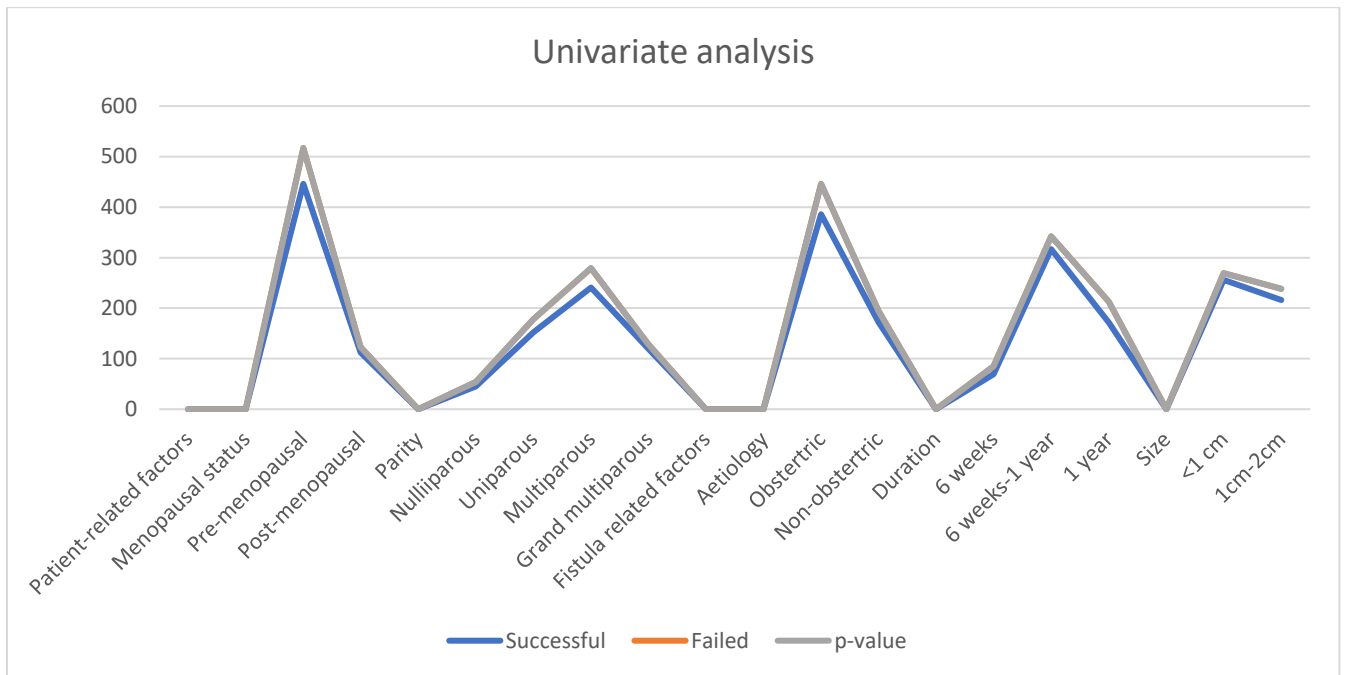
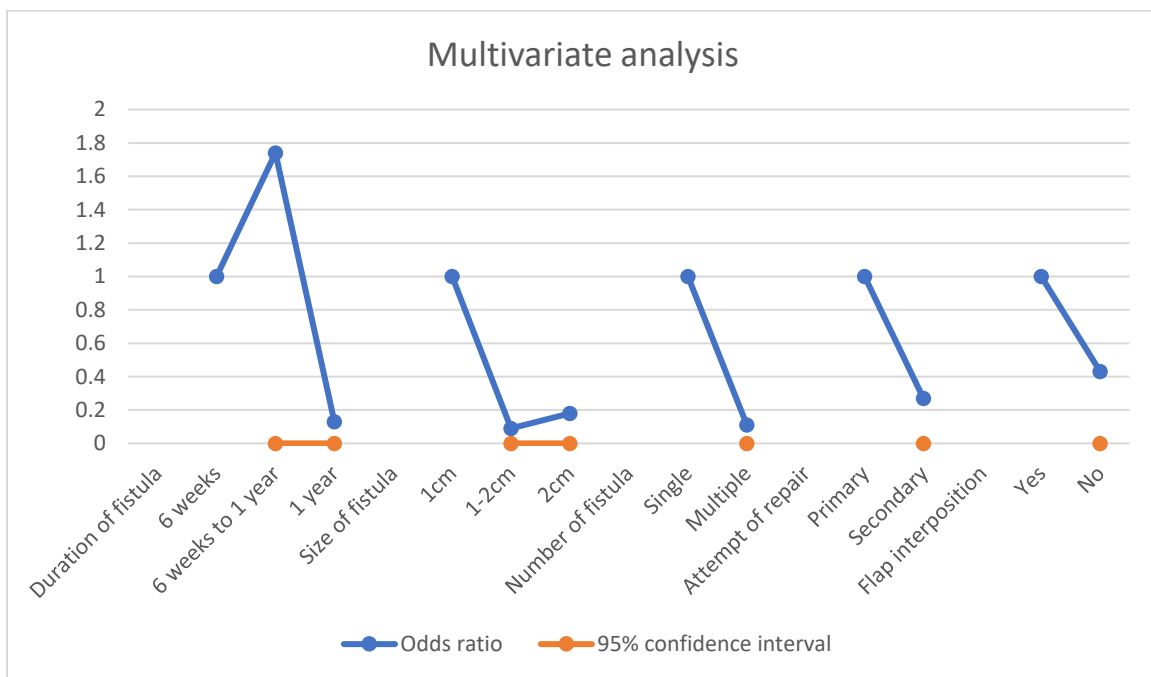


Table-3: Multivariate analysis.

Factor	Odds ratio	95% confidence interval
Duration of fistula		
< 6 weeks	1	
6 weeks to 1 year	1.74	0.87-3.49
> 1 year	0.13	0.18-0.52
Size of fistula		
<1 cm	1	
1-2 cm	0.09	0.04-0.18
>2cm	0.18	0.10-0.32

Number of fistula		
Single	1	
Multiple	0.11	0.70-0.19
Attempt of repair		
Primary	1	
Secondary	0.27	0.16-0.45
Flap interposition		
Yes	1	
No	0.43	0.26-0.73



DISCUSSION:

Outcomes revealed about less knowledge, inappropriate health facilities and absence of organization, as is obvious from earlier age demonstration, huge mean parity, and obstetric methods, organization with good performance ambulances and good roads(to provide comfort to the patients), well prepared mobile maternity centers(to give better treatment to the victims of remote areas whose access to the Medical Centre on time was difficult), good women position (to give them proper treatment), enlightening the medical system through experienced nurses and doctors (to give good treatment to the victim) and through the use of better technology and good medical services in hospitals.

Appropriate actions must be adopted to lower linked factors including cephalopelvic imbalance resulting from malnutrition and pregnancy at an early age.[12,13] To achieve this through public alertness operations guiding people about disadvantages of early marriages and also focusing about care of a pregnant women.

A huge difficulty during the survey was the absence of proper terms. Instead of several groupings, [14] there is no appropriate organization of VVF depending on which supervision of VVF could be held. Moreover, there is absence of description among small and large fistulae, early vs. late restoration, [15,16] or simple vs. composite fistulae. Adjustment of terms was needed in

order to deal with VVF properly. Appropriate duration for operative involvement is still provocative. [16,17] It is recommended to postpone the time for about 3-4 months for appropriate restoration. [18,19] Various surveys stated that, particularly for tiny non-infectious fistulae, early restoration is good or identically effective rates associated to late restoration [16,20] with supplementary benefit of lowered misery and fast beginning of new life. [17] Other surveys showed that the results were not linked to duration of restoration.[21,22] In current study, the victims that received operative restoration <6 weeks were at higher risk of disappointment depending upon irritated and juvenile fistula path. Meanwhile victims having surgery after 1 year were at a huge risk of disappointment resulting from inappropriate working of detrusor muscle (identical to identical indwelling catheterisation and lowered blood stream promoting weakened bladder performance and cure.[23] Effective outcomes were observed for victims having restoration done among 6 weeks to 1 year.

Most surveys agreed to the fact that enlargement of size and number of fistulae have adverse influence on the results of operation [5,16,24] and utilization of interpositional flaps is recommended for enlarged fistulae and also for multiple fistulae whatever the size may be.[16,24-27] This survey had identical outcomes. Disappointment of restoration was effectively linked to fistula > 2cm and fistula which were many in number, particularly those without tissue interposition. A few writers recommended regular flap interposition particularly when restoration has been performed using transabdominal path.[28] This seemed out to be a better choice and flap interposition with huge momentum should be utilized for all transabdominal restorations either fistula is simple (tiny and single) or composite (huge and many in number).

The task of flap interposition was found difficult in trans-vaginal restoration, it is recommended to be performed within fistula of huge (>2cm) size or with those containing two interpreters.

Mostly surveys stated that effective results lower with growing number of restorations.[5,22,23,29-31] About 2484 victims showed 83% effective results with primary restoration which falls to 65% with successive restorations.[30] A survey [26]reported the number of restorations as non-substantial for the results. It was observed that former restorations were substantially linked with disappointment. Former operative suffering leads to modification of resident anatomy and ischemia as well as devaluation of tissues causing adverse sticking and fibrosis, resulting in

uneasy substantial restoration. It is advisory to perform secondary restoration only by expert doctors and utilization of interpositional flaps.

Path of restoration either abdominal or vaginal is the key point of VVF restoration. Vaginal path is recommended by most of the doctors.[16,25,31,32] While some recommended abdominal path.[19,23] Most of the surveys provide evidence for the fact that there is no association among path of restoration and the results. [16,24,29,31]. This study evaluated that path of restoration act as a non-substantial predictive influence and it must be selected by the doctor depending on his/her ease. A survey [33] said that non-obstetric reasons are linked to effective rates, but this aspect can't approach to substantial statistics of the survey. Other aspects were statistically non-substantial consisting of menopause and parity. None of the survey recommended that these aspects are substantial for evaluating the results.

Including all the aspects, it is a pre-requisite to obey primary operative principles comprising of optimization before surgery (e.g. modification of nutritional rate, anemia and cure of the disease-causing organisms), cautious operative methods(broad contact of the fistula, removal of fibrous tissues, management of dry, non-infested suture line and easy water-tight finish) and appropriate follow-up after surgery (antipathogenic sheath, proper liquid uptake, fast mobilization and vulvovaginal toilet). Escape of intercourse of a period of 90 days, cautious strategy of pregnancy and appropriate antenatal care play a significant role in regulating huge rate of effective restoration. [34]

Specific fistula centers are really significant. Record of former disappointed restorations has a significant influence in evaluating the results of operative restoration of VVF. A huge number of doctors were unaware of VVF restoration. Operative treatment of VVF at fistula organizations not very well experienced cause disappointment and successive operative efforts for VVF restoration turned really problematic. It is recommended to shift the victims towards experienced fistula organizations to get good outcomes. Particularly those victims having severe VVF or former disappointment records should be shifted in specific fistula organizations.

Due to reflective basis, this survey has some boundaries. Many records were not included due to lack of appropriate records. History was unavailable for intra-surgical discoveries including appropriate location, level of fibrosis, utilization of junctions and intra-surgical problems. Lengthy continuation was lacking. While this survey having huge amount of

records presents a struggle to evaluate the influences responsible for huge effective finishing of fistula with renovation of continence and restarting a usual, vigorous and reputable life.

CONCLUSION:

Women of developing countries would face the difficulty of obstetric fistula. An effective finishing of VVF needs cautious analysis of specific prognostic influences. Operative restoration can lead to effective outcomes if it is performed within 6 weeks to 1 year of post-fistula formation, flap interposition is performed (particularly for huge and varying number of fistulae) and restoration should be done once. Path of restoration has non-substantial influence on the results of restoration, so they must be selected depending on the ease of doctor. Potential surveys are needed to determine features substantial in evaluation of results of VVF restoration.

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