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Research Article

EFFICACY OF TRANSABDOMINAL VERSUS TRANSVAGINAL APPROACH REPAIR IN THE MANAGEMENT OF VESICOVAGINAL FISTULA

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Abstract:

Objective: Evaluation of two different surgical techniques of vesicovaginal fistula repair, transabdominal versus transvaginal technique.

Setting: Study was conducted at urology department of hospital affiliated to Peoples University of Medical and Health sciences Nawabshah.

Design & duration: This is an interventional clinical trial completed in 12 months duration from June 2019 to May 2020.

Patients and methods: Patients diagnosed with vesicovaginal fistula after routine examination, and investigations, were selected using consecutive sampling technique for fistula repair. Examination under anesthesia (EUA) and cystoscopy were done in all patients. Patients having complicated fistula with involvement of colon, urethra or ureter, or with pre-existing pelvic malignancy were excluded from this study. Patients were put into two groups on the basis of site of fistula and method of repair. One group comprising on patients with low lying uncomplicated fistula, underwent fistula repair using trans-vaginal approach and other group with high type, large or complicated fistula, underwent trans-abdominal approach.

Results: Total 40 cases were operated for vesicovaginal fistula. Transvaginal approach was used in 52.5% and transabdominal approach was used in 47.5% cases. Mean age of patients was 31.4±2.4 years. Cause of fistula was obstetrical in 92.5% cases and gynecological in 7.5% cases. Through abdominal repair of fistula omentum was used in 63.2% cases and peritoneum was used in 36.8% cases. Those underwent transvaginal fistula repair showed success rate of 95.2% and those underwent abdominal repair showed success rate of 89.4%.

Conclusion: Birth trauma is a major cause of vesicovaginal fistula in our area. Transabdominal and transvaginal both techniques have almost equal success rate with comparable good outcomes but type of tissue used for interposition in suture line play important role in achieving high success rate.

Key words: vesicovaginal fistula, birth trauma, trans-abdominal repair, trans-vaginal repair

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INTRODUCTION:

Vesico-Vaginal Fistulae is a most important big complication resulting after obstetrical and gynecological surgeries. Frequency of VVF varies country to country.¹ According to WHO estimation 21 million women are living with fistula with incidence of 50-100 thousands new cases each year.² A review of previously published literature revealed that in Pakistan, Bangladesh, Nepal, Srilanka and Thailand incidence of vesico-vaginal fistula is 0.5-3.7%.³ Post obstetrical vesico-vaginal fistulae are not common in developed countries due to modern obstetrical care, but it is still common in developing and underdeveloped countries with weak healthcare system and lack of skilled persons. This complication occurs due to obstructed difficult labor. Head of fetus and pubis of mother insert pressure on intervening soft tissue leading to necrosis and latter on developing vesico-vaginal, vesico-uterine and urethro-vesical fistulae formation. Patients with this problem give clear history of day and night leaking of urine from vagina. Vesico-vaginal fistula must be differentiated from uretero-vaginal fistulae, as in former case there is constant leakage of urine from vagina and normal voiding of urine is absent while in later condition leakage of urine and normal voiding occurs simultaneously.⁴ Other types of fistulae are urethro-vaginal fistulae, which may be asymptomatic or sometimes leakage of urine from vagina, and vesico-uterine fistulae, which presents with cyclical hematuria without leakage of urine.⁵ There are two approaches to repair vesico-vaginal fistulae, trans-vaginal and trans-abdominal approach. In trans-abdominal approach much progress has been made with new suture materials and use of omentum or peritoneum as interposition tissue in sutures. In previous few decades vesicovaginal fistula is being repaired via minimal invasive techniques via laparoscopic and robotic surgery, transurethral repair, laser welding and closure using fibrin glue.^{6,7} Iatrogenic injury is a most common cause of vesico-vaginal fistulae. Certain low lying, small simple fistulae can be treated conservatively but that do not look likely to close spontaneously, surgery is mainstay of treatment.⁸ Many studies prefer vaginal approach in repair of vesicovaginal fistulae of any origin

obstetrical or gynecological, with high success rate and low morbidity.⁹ Ultimate goal of all modes of repair is to restore anatomy. This study is for evaluation of outcomes of fistulae repair by trans-vaginal or trans-abdominal techniques.

PATIENTS AND METHODS:

It is an interventional clinical trial completed in period of 12 months. Patients diagnosed with vesicovaginal fistula after routine examination, and investigations, were planned for fistulae repair. Consecutive sampling technique was used. SPSS software version 20 was used for analyzing data. Percentages, frequencies and correlation coefficient were calculated. Chi square test and Fisher test were applied. Examination under anesthesia (EUA) and cystoscopy were done in all patients. Inclusion and exclusion criteria were used to select patients in study group. Patients having complicated fistula with involvement of colon, urethra or ureter, or with pre-existing pelvic malignancy were excluded from this study. Patients were put into two groups on the basis of site of fistula and method of repair. One group comprising on patients with low lying uncomplicated fistula, underwent fistula repair using trans-vaginal approach and other group with high type, large or complicated fistula, underwent trans-abdominal approach. A performa was designed in which data was documented related to all patients in study group. Informed consent was taken from all cases in study group before surgery. Permission was also taken from ethical review board of the study institution for conducting study. P-value < 0.05 was considered statistically significant.

Fistulae Repair Technique

Cystoscopic examination was done in all cases before surgery to confirm the diagnosis and to determine proximity of fistulous tract related to ureteric orifices. Ureteric catheter was inserted in those cases where fistula was too close to ureteric opening, to avoid injury to ureter. Patients in group- I with low lying simple vesico-vaginal fistulae were operated in dorsal lithotomy position with thighs flexed on abdomen using trans-vaginal approach. Both labia were sutured with respective thighs. Stay sutures were placed on either side of

fistulous tract. Foley's catheter was inserted in fistulae tract and balloon dilated then traction applied to tent up tract and to make dissection easy. Fistula was excised along with poorly nourished tissue. Vagina was separated from bladder sufficiently to make closure easy. Urinary bladder was closed with 2/0 vicryl and vagina was closed with 01 vicryl suture.

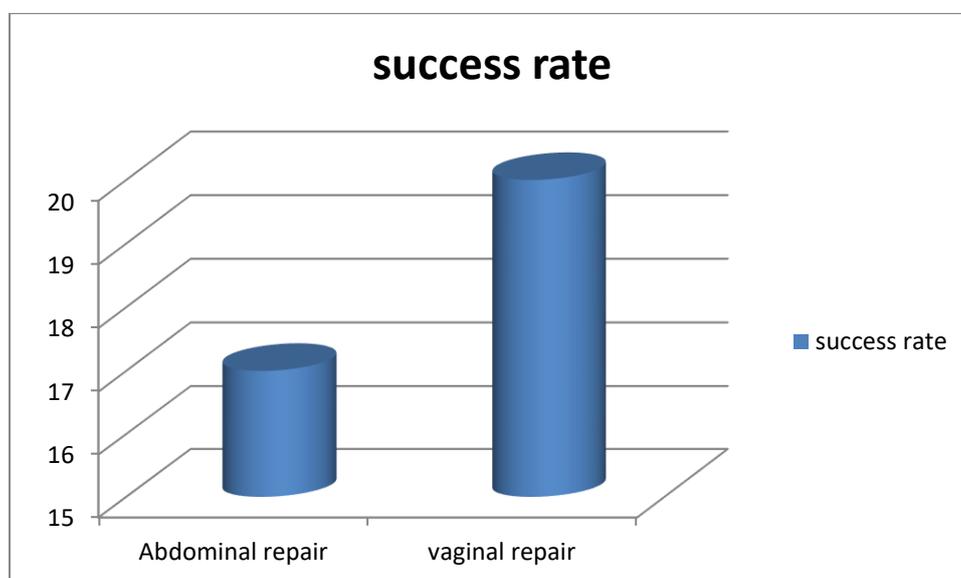
Supine position was made in those cases undergoing trans-abdominal approach. A low midline abdominal incision was given. Bladder was approached extra-peritoneal and dissection done upto fistula tract intraperitoneally. Bladder was separated from vagina. Fistulous tract was excised along with scar tissue. Vagina was closed Vicryl 0/1 and bladder was closed with Vicryl 2/0 with interrupted sutures. Peritoneum or omentum was interposed between suture lines. Two drains placed extra and intra peritoneally and abdomen closed in layers. Two ways or three ways foley's catheter of 20F/22F size was inserted in all cases. Vagina was packed with gauze lubricated with antiseptic solution for 48-72 hours. Average hospital stay was 5-10 days then patients

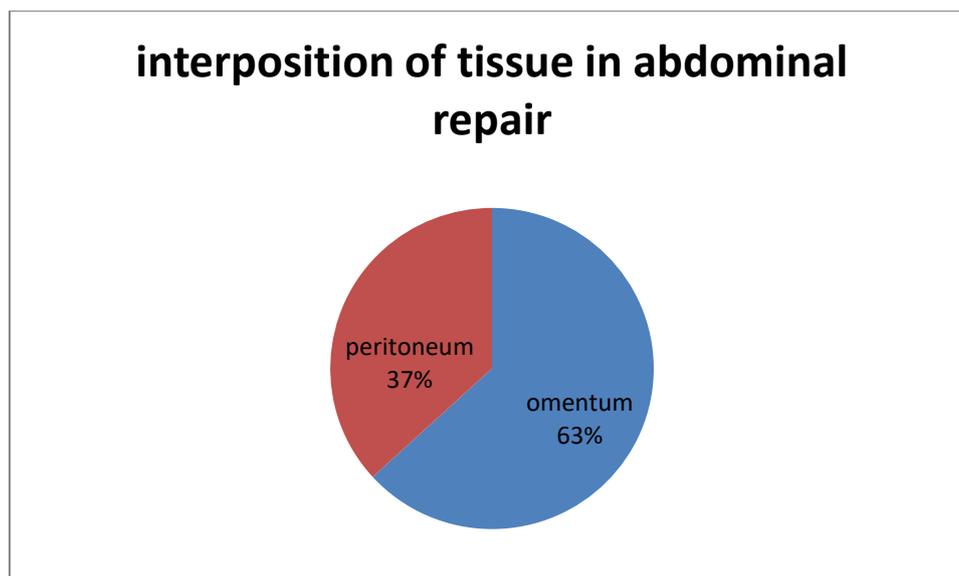
discharged and called on follow up on weekly basis for 3 months then on monthly basis next 3 months.

RESULTS:

Total 40 cases were operated for vesicovaginal fistula. Transvaginal approach was used in 21(52.5%) and transabdominal approach was used in 19(47.5%) cases. Mean age of patients was 31.4 ± 2.4 years. Cause of fistula was obstetrical in 20(92.5%) and 17(89.5%) cases and gynecological in 1(4.7%) and 2(10.5%) cases in both group- I and group- II respectively. Through abdominal repair of fistula omentum was used in 63.2% cases and peritoneum was used in 36.8% cases. Those underwent transvaginal fistula repair showed success rate of 95.2% and those underwent abdominal repair showed success rate of 89.4%. Post operative blood transfusion was done in 4(19%) and 7(36.8%) cases, hematuria was reported in 2(9.5%) and 4(21%) cases, stress incontinence was reported in 3(14.3%) and 1(5.3%) cases in group- I and group- II respectively. Long term complications were reported in just one patient from group- II and no one from group- I.

	Group- I (n=21)	Group- II (n=19)	Total
Obstetrical cause	20 (95.2%)	17 (89.5%)	37(92.5%)
Gynecological cause	1 (4.7%)	2 (10.5%)	3 (7.5%)
Success rate	20 (95.2%)	17 (89.5%)	37 (92.5%)
Pre/per operative blood transfusion	4 (19%)	7 (36.8%)	11 (27.5%)
Stress incontinence	3 (14.3%)	1 (5.3%)	3 (7.5%)
Hematuria	2 (9.5%)	4 (21%)	6 (15%)
Wound infection	1 (4.7%)	0	1 (2.5%)





DISCUSSION:

Repair of vesico-vaginal fistula has been a challenge always by gynecologist and urologist. Usually gynecologist use vaginal approach while urologist goes for abdominal approach. Now urologists play important role in evaluation of VVF and have been familiar with both approaches as well. In uncomplicated fistula results of repair are excellent. When fistula is complicated and involving surrounding tissue, it is referred to urologist. Cause of VVF is usually obstetrical or gynecological. In our study main cause of VVF was obstructed labor (92.5%). This is according to similar studies conducted previously in Pakistan.¹⁰⁻¹² Our majority of population lives in rural area and 90% of deliveries are conducted by traditional birth attendants (TBA), LHV's lady health visitors and quacks, while just 10% deliveries occur in hospitals. Lack of health care facilities in peripheral areas, lack of transport, proper referral and delay in arrivals in hospital all are factors contributing to obstructed delayed labor leading to VVF formation. According to a WHO report published in 2006, 50000-100000 women each year suffer from VVF. In Ethiopia prevalence of obstetric VVF is 2.2-7.3 per 1000 women. Based on anatomic classification mid vaginal fistulae are most common. Obstetric VVF mostly occur when head of baby is obstructed in pelvis of mother, inserting pressure on surrounding tissue and compromising blood supply, which can necrotize tissue leading to VVF formation. Prevalence of iatrogenic fistulae after obstetric surgery is also increasing.¹³ pre or preoperative blood transfusion was required in 27.5% cases overall in our study. It is because more dissection of tissue occurs in abdominal repair than vaginal repair leading to more blood loss. This is similar to other study conducted previously.¹⁰ This is in contrast to a study conducted by Rafia B et al

who did not give any transfusion to study cases. That may be due to their majority cases underwent vaginal repair only.¹⁴ In Various studies success rate of vaginal repair has been reported 67-95%, while with abdominal repair it is 85-100%.¹⁵⁻¹⁸ In our study success rate was 95.2% with vaginal repair and 89.5% with abdominal repair. These results are different from studies conducted by Nargis S et al,¹² and Memon GU et al,³ who achieved success rate of 67% and 69% respectively with vaginal repair. Another study conducted by Rasool M et al reported success rate of 100% and 94.4% with vaginal and abdominal repair respectively.¹ We achieved high success rate because we limited to small to medium size fistula and followed basic rules of fistula repair as described by Romics et al. Before surgery general health of patient was improved, sufficient time given for stabilization of tissue, over tension of suture line and overlapping of tissue was avoided. Further Omentum or peritoneum was interposed in suture lines in abdominal repair as suggested by Eilber KC et al.^{19,20}

CONCLUSION:

Obstructed labor is a major cause of vesico-vaginal fistula. Trans-vaginal and transabdominal approach both have almost similar outcomes but interposition of tissue either omentum or peritoneum in suture line is important to achieve high success rate. First surgery to repair fistula has high chance of success so it should be done through best possible approach to prevent failure.

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