

FACTORS INFLUENCING POST-OPERATIVE OUTCOMES FROM VVF REPAIRS IN A COMMUNITY HOSPITAL IN LIBERIA

Hypothesis / aims of study

To assess perioperative factors influencing short term outcome of obstetric vesicovaginal fistula (VVF) repair in complex (non-traditional VVF) patients in a community hospital in Liberia.

Study design, materials and methods

A prospective analysis was performed of 40 patients who underwent obstetric VVF repairs during June 2008 and January 2009 at Ganta United Methodist Hospital. Patients from Liberia and bordering Guinea were evaluated on a sequential basis in order of their arrival at the hospital. Individuals with a fistula diagnosed on physical examination and undergoing subsequent fistula repair were included in the study. Surgical approach and need for Martius graft were determined from the physical examination, surgeon experience and type of fistula. The primary outcome of interest was continence status 14 days post surgical repair. Chart review and extraction was performed pre and post operatively, with an examination of the effects of multiple characteristics of the patient's self report labor experience and fistula repair on continence status at 14 days post repair. Fisher's exact test was used to evaluate associations between the outcome and categorical variables and logistic regression was used for continuous variables. The Bonferroni correction for multiple comparisons was used to preserve an overall 0.05 level of significance.

Results

All patients sustained fistulas as a result of obstructed labor. The mean age of study participants was 38 years (16-70). The mean duration of labor was 3.2 days (0.5-9 days), and the mean duration between start of leakage to last repair was 9.6 years (3mo-28y). Thirteen individuals (33%) had previous attempted VVF repairs, 3 (7.5%) had more than one previous repair, and 23 (59%) had cesarean sections following admission to a hospital for obstructed labor. Upon evaluation, the average VVF size was 1.77 cm (0.3-4cm), with 6 (15%) having multiple fistula sites. Fistula locations included: 15 (37.5%) juxtaurethral, 11 (27.5%) juxtacervical, 6 (15%) midvaginal, 4 (10%) circumferential, 2 (5%) vesico-uterine and 2 (5%) urethral. Two patients (5%) also had concomitant rectovaginal fistula (RVF). Treatment included: 24 (60%) vaginal VVF repairs, 10 (25%) vaginal VVF repairs with Martius graft, and 6 (15%) abdominal VVF repair. Twenty-seven patients (70%) received perioperative antibiotics. The mean preoperative hemoglobin was 11.3 gm/dL (7.3-14 gm/dL). 28 patients (70%) were continent when catheters were removed (14-16 days after VVF repair). None of the variables analyzed in this study demonstrated a significant association with continence status. However, some trends were noted. Women with first time repairs had a continence rate of 78%, as compared to women with previous repairs, who had 54% continence rate ($p=0.15$). The location of fistula influenced the outcome of repair, as 47% of juxtaurethral fistula repairs were considered failures at time of catheter removal, while only 9% of juxtacervical fistulas remained incontinent ($p=0.06$). Surgical approach did not appear to influence the outcome.

Table 1. Perioperative Factors and Surgical Success

| Variable | Number of Patients (%) | Successful Surgery % | p |
|---------------------------|------------------------|----------------------|------|
| VVF History | | | |
| First VVF | 27 (67.5) | 78 | 0.15 |
| Secondary VVF | 13 (32.5) | 54 | |
| Repair Type | | | |
| Vaginal | 24 (60.0) | 75 | 0.49 |
| Vaginal Martius | 10 (25.0) | 70 | |
| Abdominal | 6 (15.0) | 50 | |
| Fistula Location | | | |
| Juxtaurethral | 15 (37.5) | 53 | 0.06 |
| Juxtacervical | 11 (27.5) | 91 | |
| Circumferential | 4 (10.0) | 75 | |
| Urethral | 2 (5.0) | 0 | |
| Mid vaginal | 6 (15.0) | 83 | |
| Vesico-uterine | 2 (5.0) | 100 | |
| Perioperative Antibiotics | | | |
| Yes | 27 (67.5) | 67 | 0.72 |
| No | 13 (32.5) | 77 | |
| Multiple Fistulas | | | |
| Yes | 6 (15.0) | 50 | 0.34 |
| No | 34 (85.0) | 74 | |
| Delivery Method | | | |

| | | | |
|----------|-----------|----|------|
| Vaginal | 16 (41.0) | 80 | 0.31 |
| Cesarean | 23 (59.0) | 63 | |

Interpretation of results

The women in this study are a unique group because most suffered prolonged leakage and a third had undergone previous VVF repairs. Although none of the variables of interest were significantly associated with continence status at 14 days post surgery, some variables are noteworthy because they approached statistical significance. This small study was underpowered to detect small difference in continence status and future studies will require a larger sample size to determine these associations more robustly. Other variables including the presence of multiple fistulas, duration of leakage, antibiotic use, delivery type, pre-op hemoglobin, and duration of labor were not significantly associated with postoperative continence status.

Concluding message

Although patients with previous VVF repairs experience a lower success rate than patients with primary VVF repairs, our study suggest that surgery remains an effective treatment. Larger prospective studies with consistent follow-up will help us to more fully understand those factors associated with short and long term treatment success.

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| <i>Specify source of funding or grant</i> | None |
| <i>Is this a clinical trial?</i> | No |
| <i>What were the subjects in the study?</i> | HUMAN |
| <i>Was this study approved by an ethics committee?</i> | Yes |
| <i>Specify Name of Ethics Committee</i> | 1. UAB IRB Committee |
| <i>Was the Declaration of Helsinki followed?</i> | Yes |
| <i>Was informed consent obtained from the patients?</i> | Yes |