40

Kirschner C[1], Arrowsmith S[2], Yost K [1], Wall L L[3]
1. Evanston Northwestern Healthcare, 2. Mercy Ships, 3. Washington University

VESICOVAGINAL FISTULA: OUR EXPERIENCE WITH 1,084 SURGICAL REPAIRS

Hypothesis / aims of study
Our hospital cares for over 300 women annually who are afflicted with vesicovaginal fistula (VVF). The objectives of this report are to describe surgical encounters and patient characteristics of women receiving treatment at our institution, and to identify factors associated with urinary continence at the time of discharge.

Study design, materials and methods
Our center maintains an Access database to record patient information and details of surgical procedures for VVF. We computed descriptive statistics of selected variables from the database to describe this patient population. We also tested the association between these selected variables and urinary status outcome using independent sample t-tests and chi-square tests. The current study describes the care of patients entered on the database between August, 1998 and April, 2004.

Results
1,084 surgeries were performed to repair VVF in 926 women. Procedures included VVF repair alone (788), VVR plus rectovaginal fistula (RVF) (43), VVR with ureteral reimplantation (19), VVF with urethral reconstruction (26), ureteral reimplantation alone (41), urethral reconstruction alone (21), RVF repair alone (38), pubovesical sling (31), vaginoplasty (13), ureteral diversion (40) and other (24).
Women with higher parity ($p=0.0006$), more living children ($p<0.0001$) and less time with fistula ($P<0.0001$) were more likely to have dry final urinary status. Abandoned, divorced or separated women had the worst outcomes. Age of patient and days in labor were not significantly significant.
Characteristics of surgery that were significantly related to continence were not having a relaxing incision ($p<0.0001$) and using an abdominal approach ($p<0.0001$). Graft type was not related to urinary outcome.
Women with intact urethra and intact bladder necks were more likely to be dry. Women with VVF repair alone were almost twice as likely to be dry as those with VVF plus rectovaginal fistula (RVF) repair. Women with upper and midvaginal fistulae were most likely to be dry (80.9% and 83.5%), followed by lower fistulae (63.3% dry). Large fistulae had the worst outcome, with only 41.5% dry. Outcome for women with mild or moderate fibrosis was significantly better than for women with severe scarring ($p<0.0001$).

Interpretation of results
Although many of our results would seem intuitive, this is the first large study of VVF surgical procedures to which statistical analyses have been applied.
Care of women with VVF remains a significant challenge. In the face of limited resources for treating VVF patients, selection criteria for treating patients who may be expected to have a successful outcome (smaller, higher fistulae in patients with an intact urethra and mild to moderate fibrosis) should be considered. Additional surgical approaches must be evaluated for the patient with more complex VVF. Establishment of regional dedicated VVF centers for care and research is important.

Concluding message
We have identified statistically significant factors which are associated with improved urinary outcomes following VVF repair. These include higher parity, having living children, less time with fistula and married status. Surgical factors of significance are intact urethra and bladder neck, higher and smaller fistula, absence of concurrent RVF, and absence of severe fibrosis. Successful repairs are associated with abdominal repairs and absence of a relaxing incision.
We are hopeful that this information will be useful in the development of further programs to provide care for women with VVF.

FUNDING: NONE
DISCLOSURES: NONE
HUMAN SUBJECTS: This study was approved by the ECWA Evangel Hospital Ethics Committee and followed the Declaration of Helsinki Informed consent was not obtained from the patients.