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URINARY FREQUENCY IN PATIENTS WITH PERSISTENT URINARY INCONTINENCE FOLLOWING SUCCESSFUL CLOSURE OF OBSTETRIC VESICOVAGINAL FISTULA

Hypothesis / aims of study

Nearly half of patients who have undergone successful surgical closure of obstetric vesicovaginal fistula (VVF) remain incontinent. It has generally been assumed that these patients have stress urinary incontinence (SUI), but when urodynamic studies are performed on this group, more complex pathology is often demonstrated, including detrusor overactivity, impaired emptying, as well as intrinsic sphincter deficiency [1,2,3]. Moreover, standard treatments for SUI are often unsuccessful in these patients. To date, there have been no studies performed to evaluate urinary frequency in this patient population. This may be due to the fact that standard urological evaluation tools such as bladder diaries are impractical as most patients are illiterate and many are not accustomed to holding a pen or marking paper. We have developed a novel and simple method for assessing 24-hour frequency in this patient population. In this study, we aimed to evaluate 24-hour frequency in patients with persistent UI following successful VVF closure in Ethiopia.

Study design, materials and methods

Forty-four consecutive patients were recruited between November 2013 and February 2014. All patients complained of persistent UI or other lower urinary tract symptoms (LUTS) following VVF closure. Each patient was handed an envelope and several strips of paper measuring approximately 2 x 28 centimeters. She was then instructed to tear off a piece of paper from the strips and place the torn piece into the envelope after each micturition. Following a 24-hour time period, a nurse or nurse's aid retrieved the envelope and counted the number of pieces of paper in the envelope. The data was used to construct a histogram to assess the distribution of urinary frequency in the patient population, and the Shapiro-Wilk test was used to test for normal distribution. The Pearson Product Moment test was used to test for correlations between 24-hour frequency and patient age, duration of labor, time since VVF closure, or fistula diameter using the available medical records. For patients whose operative notes were also available, the average 24-hour frequency was calculated based on estimated bladder size, which is estimated by using a graduated probe to measure the length from the external urethral meatus to the deepest point of the bladder. The bladder size is then classified as small (<4cm), fair (4-7cm), or good (>7cm). One-way ANOVA was used to determine significant differences between patients with different bladder sizes. Descriptive data was presented using mean ± standard deviation, median and range, or percentage. P-values <0.05 were considered statistically significant.

Results

The mean age was 30.2±8.9 years, the literacy rate was 0%, the median duration of labor was 3 (1 - 6) days, the median time since VVF closure was 7.1 (0.5 - 419) months, and the median VVF diameter was 3 (1 - 6) centimeters. Histogram analysis (Figure 1) showed a normally distributed curve for 24-hour frequency in the patient population (W-Statistic=0.96). The mean 24-hour frequency was 16.6±7.3 (median=17, range=3 - 30). Of the 44 patients, 36 (82%) reported having >8 micturitions, 29 (66%) reported >12 micturitions, and 24 (55%) reported >15 micturitions per 24-hour period. There was no significant correlation between 24-hour frequency and patient age (correlation coefficient [CC]=-0.044, p=0.78, n=42), duration of labor (CC=-0.030, p=0.85, n=41), time since VVF closure (CC=0.13, p=0.47, n=35), or fistula diameter (CC=0.15, p=0.45, n=29). Of the 22 patients with available operative notes, 8 (36%), 10 (45%), and 4 (18%) had an estimated bladder size of good, fair, and small, respectively. The mean 24-hour frequency for this group was as follows: 15.1±6.2 (good), 14.9±7.4 (fair), and 17±10.1 (small); the test for statistical significance was underpowered to detect a significant difference between groups (power=0.049).

Interpretation of results

Although a "normal" value for 24-hour frequency in Ethiopian populations is not known, our data provides evidence that the majority of patients presenting with persistent UI or LUTS following successful VVF closure have symptoms of urinary frequency. Furthermore, we did not find any significant correlations between 24-hour frequency and patient age, duration of labor, time since VVF closure, or fistula diameter. Patients with small bladder size had on average 2 more micturitions per 24-hour period than patients with good or fair bladder size. However, the large degree of variation and low sample size did not enable detection of any significance.

Concluding message

We have described a novel method for evaluating 24-hour frequency that can be used in populations with little or no literacy. For the first time, we have quantified 24-hour frequency in women who continue to suffer UI following successful VVF closure. Urinary frequency is a significant clinical problem in this patient population and does not appear to be related to patient age, duration of labor, time since VVF closure, or fistula diameter. Additional studies are urgently needed to help elucidate the cause of urinary frequency and determine appropriate treatments.

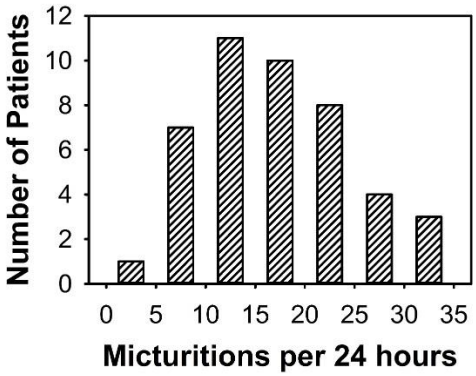

Figure 1. Distribution of 24-hour Frequency

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Disclosures
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