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SURGICAL MANAGEMENT OF URETHRAL DIVERTICULA IN WOMEN: A SYSTEMATIC REVIEW

Hypothesis / aims of study

Urethral diverticula (UD) are pouch-like outgrowths of the urethral lumen, most likely originating from periurethral glands that can occur with varying sizes along the whole length of the female urethra. Their presentations range from asymptomatic women to those with painful vaginal tumors that can be associated with incontinence, obstruction, and even stones and malignancy. The prevalence of UD is estimated to lie between 0.6 and 4.7% and therefore affected patients may be encountered only rarely even in busy clinical settings [1].

Since an operation is by far the most common recommendation for affected women – apart from watchful waiting in those being asymptomatic – we sought to assess the techniques and effects of surgery in adult female patients with urethral diverticula. In particular we wanted an estimate of the rates of patients with:

- complete resolution of symptoms
- partial resolution of symptoms
- de-novo stress incontinence
- de-novo irritative symptoms
- obstructed voiding/urethral stricture
- urethrovaginal fistula
- wound infection
- new-onset of pain and dyspareunia
- recurrent UD

immediately or at any time postoperatively. A secondary objective was to determine the types of study designs used to look into the results of surgery.

Study design, materials and methods

We searched MEDLINE, EMBASE and CINAHL using the search terms “urethra* AND diverticul* AND (surg* OR operat* OR excis* OR marsup*)” for MEDLINE, and “urethra* AND diverticul* AND disease management* AND surgery* AND females* AND humans” for EMBASE and CINAHL, respectively. Two of the authors (BB, EH) independently assessed the study design of each individual study, the number of patients included, type of surgery and if the following outcome parameters were measured: complete and partial resolution of symptoms, de-novo stress incontinence, de-novo irritative symptoms, obstructed voiding, urethrovaginal fistula, wound infection, new-onset of pain and dyspareunia, and recurrent UD. Disagreements were resolved by discussion with a third person. Review articles and all studies on men, neonates or adolescents, as well as those with a focus on diagnostics or found to be unrelated to UD on inspection were excluded. The findings of all relevant studies were abstracted, categorized and summarized by study design and outcomes measured.

Results

We identified 294 studies published up to December 2008 on the basis of our search terms. 174 papers had to be excluded (102 not on UD or diagnostic focus, 25 on males, 15 on neonates/adolescents, 32 review articles). The remaining 120 papers involved 1999 patients. There were no randomized trials, cohort studies or case-control studies. We found 44 single case reports and 76 case series involving between 2 and 120 patients (Tab. 1).

Table 1: Distribution of numbers of cases in 134 case reports and case series on surgical therapy of UD.

Single	**2 – 10**	**11 – 20**	**21 – 30**	**31 – 40**	**41 – 50**	**> 50**
44 (37%)	28 (23%)	18 (15%)	7 (6%)	4 (3%)	7 (6%)	12 (10%)

In 48 (40%) studies the type of surgery performed was not specifically detailed, transvaginal resection/reconstruction was performed in 65 (54%) with the rest of the studies performing different types of operations including marsupialisation and transurethral endoscopic techniques.
Specified outcomes were reported only selectively (fistula 15, strictures 5, recurrent UD 15, pain 2, stress incontinence 11, urge-symptoms 3, wound infections 6). Because of the inconsistency of the data it was impossible to analyse the data collectively.

Interpretation of results

The objective was to carry out a systematic review on the effectiveness of surgical therapy for UD, however there were no comparative studies on operative treatment. The majority of publications found were single case reports (37%) and small case series involving up to 20 patients (38%). Under special circumstances, even small case series can be accepted as high level evidence, these are called “all or nothing” case series. This applies when the sequelae of a given condition can be predicted very accurately and averted with a defined treatment (e.g. transplantation in end-stage organ failure). However, in the case of surgery for UD this is clearly not the case. In contrast, we found a poor reporting standard not taking into account an adequate range of possible outcomes in the majority of studies.

Concluding message

Current evidence on the surgical management of UD in adult females does not allow accurate prediction of success- and complication rates. There are no comparative studies on different types of surgery. From these findings, given the relatively low

prevalence of the condition, at least registries of UD treatment outcomes with clearly defined diagnostic standards appear to be warranted. Ideally, randomized trials for different types of treatments would be needed to optimize the decision making process in UD patients.

References

1. Int Urogynecol J Pelvic Floor Dysfunct. 2005 Mar-Apr;16(2):158-61

Specify source of funding or grant	**NONE**
Is this a clinical trial?	**No**
What were the subjects in the study?	**NONE**