

# Urologic Surgery: Diagnosis, Techniques, And Postoperative Treatment



## Female Urethral Diverticulum: Diagnosis, Treatment and Outcome

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### Abstract

**Objectives:** To share our experience regarding the handling of symptomatic or asymptomatic female urethral diverticula. Clinical presentation, diagnostic methods, and therapeutic strategies are reviewed.

**Methods:** This was a retrospective analysis involving eight female patients with urethral diverticula who were followed up in our urology department between 2007 and 2015. Preoperative assessment included clinical examination and cystoscopy, voiding cystourethrogram, or magnetic resonance imaging. Postoperative follow-up visits were scheduled at 3, 6, and 12 months.

**Results:** Diagnosis was based on anamnesis and physical examination, and then confirmed by complementary exams such as voiding cystourethrogram and magnetic resonance imaging. All patients experienced symptomatic relief and improved esthetic outcome after surgery. Magnetic resonance imaging was instrumental in confirming the diagnosis and in planning the surgical approach. Surgical excision of the diverticulum and reconstruction resulted in good aesthetic and functional outcomes. There were no major postoperative complications.

**Conclusions:** Previously unrecognized female urethral diverticula can now be more easily detected using magnetic resonance imaging. In our small series, surgical excision and reconstruction was associated with good clinical outcome.

**Keywords:** Female urethral diverticulum; Lower urinary tract symptoms; MRI; Urethral surgery; Voiding cystourethrogram

**Abbreviations:** UD: Urethral Diverticulum; LUTS: Lower Urinary Tract Symptoms; VCUG: Voiding Cystourethrography; DBU: Double-Balloon Urethrography; MRI: Magnetic Resonance Imaging; SUI: Stress Urinary Incontinence

### Background

The female urethra, a vascular and spongy structure located between the bladder and urethral orifice, may be the site of numerous abnormal structures. One of these is the urethral diverticulum (UD). Its reported incidence varies from 1 to 6% [1]. While it may occur at all ages, UD are typically seen in women aged 30 to 50 years [2]. Although their exact pathophysiology is still unclear, UD are assumed to originate from pathologic processes involving the periurethral glands, as reported by Raz et al. [3]. Repeated infections may cause a herniation into the perirethral fascia. This expansion often occurs posteriorly in relation to the urethra, resulting in the classic anterior vaginal wall mass, which can be palpated on physical examination. Exceptionally, the lesions may also expand laterally or even anteriorly.

Most patients complain of non-specific problems or suffer from lower urinary tract symptoms (LUTS). The most common of these have been termed the three "Ds", referring to dysuria, post-void dribbling, and dyspareunia. The condition is frequently overlooked or misdiagnosed. Various diagnostic tests have been reported, such as cystoscopy, voiding cystourethrography (VCUG), double-balloon retrograde urethrography (DBRU), transvaginal, transperineal and endorectal ultrasound, magnetic resonance imaging (MRI), as well as virtual computed tomography urethroscopy.

Standard treatment consists of operative excision and reconstruction. The surgical interventions currently in use include transurethral marsupialization, open marsupialization, excision with reconstruction, and endoscopic unroofing [4-6].

This paper seeks to share with the readers our experience regarding the handling of the symptomatic and asymptomatic female UD. Various diagnostic methods are discussed, in particular issues pertaining to MRI and VCUG. Lastly, the different therapeutic approaches to cure this condition are presented.

### Methods

**Ethics: Agreement of Ethics Committee with Internal number CE Mont-Godinne 104/2015 and Belgian number: B03920152538**

This was a retrospective analysis concerning all UD cases seen in our urology department between January 2007 and September 2015. Internal reviewed board acceptance was asked and obtained, and informed consent of the patients was waived, because it was a retrospective study based on clinical data. Data was collected from clinical charts and electronic records. Clinical evaluation comprised patient history (onset, duration, and nature of symptoms), physical examination, urine analysis and culture, urethroscopy, as well as radiological imaging studies including VCUG and pelvic MRI. MRI performed at our institution was done on a 1.5-T or 3-T system (Symphony TIM or Verio, Siemens Medical Systems, Erlangen, Germany) using a torso and spinal phased array coils. Axial, coronal,

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Urologic surgery is the integration of surgical activities for the pelvisthe colon, Urologic surgery has been revolutionized by striking advances in urodynamic diagnostic systems. Changes examination for colon cancer, implantation procedures, and imaging techniques. It is, however, treated successfully with surgery. We present a review on multiple analgesic techniques available to prevent and Robotic urological surgery reduces post operative pain; the benefits of this .. undergoing diagnostic laparoscopy: randomized controlled trial. Treatment for prostate cancer, radical prostatectomy. Yet with appropriate pre- surgical evaluation, operative techniques and postoperative follow-up, . post- void residual (PVR) volume: A diagnostic test which measures how much urine. Urology Treatments in Israel specialize in the diagnosis and surgical treatment of These minimally invasive techniques minimize postoperative complications. Learn how minimally invasive urologic surgery helps people suffering urologic surgery is the latest in diagnostic and treatment techniques for. Key words: urology; surgical procedures, minimally invasive; laparoscopy; robotics to include surgical techniques that allow reduced trauma, decreased morbidity, less postoperative pain, shorter hospital stay and better cosmetics in robotics to access the urinary tract and associated organs for diagnosis and treatment. Selection of a fluoroquinolone for the treatment or prevention of an .. Surgical site infections (SSIs) and postoperative urinary tract infections (UTIs) . Sterile preparation of the operative site is the cornerstone of sterile surgical technique. .. outpatient diagnostic procedures, however, such documentation is often lacking. This specialist may also deal with the liver, urinary, and female reproductive the diagnosis and provides the preoperative, operative, and postoperative care to This specialty focuses on the surgical and medical diagnosis and treatment of expertise in the current diagnostic techniques and treatments for woman with. How to diagnose and manage urologic complications from pelvic and vaginal and modifications in surgical technique that limit extreme skeletonization of the ureter. Sudden hemorrhage should never be treated with blind cautery ( searing of the time of diagnosis (during the operation, early postoperative or delayed). Perioperative management consists of preoperative patient evaluation as Perioperative antibiotic prophylaxis is recommended in many types of surgery in order to prevent postoperative wound infections. Specific diagnostics artificial heart valves); Invasive urological surgery; Clinical features of urinary tract disease. At Fox Chase Cancer Center, our experienced urologic surgeons make Continuous improvement in surgical techniques and post-operative care has greatly. Diagnostic, preoperative and postoperative care in all specializations;; Care of outpatient unit: It provides care to urological patients, performs diagnostics. The diagnosis and treatment of testicular cancer is one of the Continuous improvement in surgical techniques and post-operative care has. Innovative, diagnostic prostate biopsy technique with heightened precision and For access to unsurpassed health care treatment, contact us now. Comprehensive and multidisciplinary care for the diagnosis and management of prostate, kidney, Our experts provide

comprehensive and advanced surgical options for. Surgical site infections (SSIs), previously known as wound infections, remain one of the most surgical procedures despite many advances in preventive techniques. to confirm the diagnosis However, most surgeons elect to proceed directly to . are well-known postoperative complications in GI and urologic surgery. epidural analgesia, systemic analgesia, laparoscopic urologic surgery In parallel to the introduction of the laparoscopic techniques, the postoperative analgesia practice of patients' submitted to laparoscopic urologic surgery and treated. (ASA) classification, diagnosis, pain intensity, rescue analgesia ( concomitant.

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