

# Surgical treatments of post coital cystitis

## Abstract

Chronic recurrent cystitis is one of the most common infectious and inflammatory diseases of the urinary system in women. In Russia, up to 36 million cases are diagnosed each year. A very common cause of acute and chronic recurrent cystitis in women is an anomaly in the form of female hypospadias. According to the authors, treatment of postcoital cystitis against the background of urethral dystopia, hypermobility of the urethra, urethrogymenial adhesions is only surgical. The article reviews the literature on known methods of surgical treatment currently used in Russia in the treatment of postcoital cystitis in women. A comparative analysis of surgical methods of treatment is carried out, their advantages and disadvantages are highlighted.

**Keywords:** postcoital cystitis, Russia, surgical treatment, urethral dystopia, urethral hypermobility

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## Mini review

Chronic recurrent cystitis is one of the most common infectious and inflammatory diseases of the urinary system in women, which is characterized by a prolonged recurrent course, leading to a decrease in the working capacity and quality of life of a woman. By definition, cystitis is an infectious-inflammatory process in the wall of the bladder, mainly in the mucous membrane.<sup>1</sup> This disease is very common: the incidence rate among women 20-40 years is 25-35%. About 30% of women throughout their lives at least once fall ill with acute cystitis. In Russia, up to 36 million cases are diagnosed each year. In 50% of girls and 21% of women, chronic cystitis is accompanied by vulvitis or vulvovaginitis. Chronic vulvovaginitis in combination with nephrourologic pathology, according to the literature, occurs in 42.2% of patients. 66.7% of women with vulvovaginitis have the same microorganisms in the urine as in the vagina.<sup>2</sup> A cause of development of cystitis-polyetiological and very frequent cause of acute and chronic recurrent cystitis in women is an anomaly in the form of female hypospadias (ectopia of the external hole of the urethra in the vestibule and on its front wall).<sup>3</sup> This is due to embryonic underdevelopment of the urethra and subsequent significant shortening of its length, the presence of hymenal adhesions, closely associated with the distal urethra, the hypermobility of the urethra.<sup>4</sup>

Female dystopia of the urethra as a cause of chronic recurrent cystitis is rarely reported in the urological literature, and due attention is not paid to surgical treatment of this problem. This article provides an overview of the most common surgical methods for treating female urethral dystopia. To identify the urethral dystopia, the O'Donnell-Hirschhorn study is generally accepted, it allows one to identify the intravaginal displacement and the gaping of the external orifice of the urethra.<sup>5,6</sup> Any operational benefit of this pathology is reduced to one goal: in one way or another to achieve a normal location of the distal urethra, meatus. All methods have a number of certain advantages and a disadvantage, any kind of intervention is determined individually for each patient. Surgical correction of dystopia, hypermobility of

the urethra is always preceded by a stage of conservative treatment, based on a thorough examination and the results of clinical and laboratory indicators. In 1965-R. Hirschhorn suggested that bilateral hymenotomy can reduce the frequency of recurrence of chronic cystitis and suggested a technically simple corrective operation - hymenoplasty. However, it is effective only with urethrogymenial adhesions and a slight displacement of the external orifice of the urethra from its normal anatomical site. R. O'Donnell pointed out the effectiveness of the surgical method of treatment of postcoital cystitis for the first time in 1959.<sup>5</sup>

In Russia, for the correction of urethral dystopia, O'Donnell's urethral transposition is the most common; O'Donnell's surgical technique prototype is an extrvaginal transposition of the urethra, non-surgical plasty of the external hole of the urethra with a biodegradable gel. R. O'Donnell developed a surgical technique for moving the external opening of the urethra when he ectopically from the vagina to the region of the clitoris, which was called the transposition of the urethra. The essence of the operation consists in the transposition of the external opening of the urethra and its distal part into the region between the legs of the clitoris. A vertical section of the anterior wall of the vagina is made 0.5cm from the clitoris to the meatus. The urethra is mobilized for 1.5-2.5cm, and then the external urethral opening is fixed at the upper edge of the vaginal incision. The disadvantage of this operation is a single longitudinal section of the vagina to move the mobilized distal section of the urethra to the area of the clitoris. As a result, the resulting tension of the urethra in length creates pressure on the area of the vaginal seams that cover it and makes it unreliable fixation of the external opening of the urethra in a new place. This can lead to insufficiency of the sutures, reverse urethral displacement and relapse of the disease.<sup>5-7</sup>

Prototype operation O'Donnell is an extrvaginal transposition of the urethra. A distinctive feature is the formation of a subcutaneous tunnel, through which the transposition of the distal part of the urethra is performed to the region of the clitoris. The external opening of

the urethra in the new place is fixed along the circumference to the mucous vestibule by nodal sutures. The advantage of this technique is to reduce the traumatism of the operation, reduce the risk of narrowing the urethra, increase the reliability of fixing the external opening of the urethra in the area of the clitoris and thereby reduce the likelihood of recurrence of the disease.<sup>7</sup> For any kind of surgical treatment, perioperative anti-inflammatory therapy and early postoperative prevention of cicatricial complications in the field of meatus transposition with Longidase are recommended. After the operation, it is necessary to drain the bladder, according to the recommendations of different authors from 2 to 7 days, sexual rest for 1-1.5 months.<sup>8</sup> Also, new methods of surgical correction of urethral dystopia are being developed. For example, if the hypermobility of the urethra is associated with insufficiency of the outer or anterior ligament of the urethra. This ligament covers the distal urethra and is attached anterior to the pubic bone. P. Peters believes that this ligament is subject to prosthetics along with other pelvic ligaments.

The advantage of this technique is low traumaticity, absence of risk of narrowing of the urethra. The disadvantages are limited indications and high cost of surgery due to the use of a synthetic prosthesis. There is another type of correction of urethral dystopia in women - the plastic of the external hole in the urethra with biodegradable gel. In the submucous area of the external aperture of the urethra, from the side of the vagina, gradually injected and uniformly distributed from 1.0 to 2.0 ml of the hyaluronic acid gel. The disadvantages are the temporary effect, which depends on the individual reactions of the body, on the type of drug used, as well as in prosthetics, indications for use are limited, the indications depend on the degree of severity of the dystopia. The positive aspects of this method are: minimally invasive, use of local anesthesia, there is no need for catheterization of the bladder, restriction of sexual rest for 2 weeks, as well, this technique can be recommended to patients as a "trial" treatment option to assess the effectiveness of further surgical treatment.<sup>8</sup>

According to the results of the analysis of literature data, which testify to the high frequency of recurrences of cystitis in women, about their correlation with sexual activity, it can be concluded that, despite a wide range of diagnostic methods and conservative treatment, there is no tendency to decrease this disease. And the treatment of postcoital cystitis against the background of urethral dystopia, hypermobility of the urethra, urethrogymenal adhesions is only surgical. According to the authors, each of the methods has the right to exist. All of them have a low percentage of relapses, are a radical method of treating chronic cystitis. There remain a lot of unresolved issues, most of which are caused by the polyetiologic nature of the disease. This, in our opinion, is due to the lack of coordination in the development

of leading specialists in the field of urology and gynecology, not only in Russia, but also in the world and, as a consequence, the absence of a single algorithm of treatment. The approach to treatment should be interdisciplinary and personified. Only with the interaction of the urologist and gynecologist can choose the most appropriate method of treatment for a particular patient. Unfortunately, in Russia only single clinics have the possibility of complex management of such patients, and, consequently, it is necessary to develop normative legal acts for maintaining this category of patients, which causes the urgency of this problem.

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## Conflict of interest

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## References

1. Kulchavenya EV, Neymark AI, Kondratyeva YS. *Diseases of bladder (monograph)*. Med J Germany, Russia: Palmarium Academium Publishing; 2013. 140 p.
2. Uvarova EV, Sultanov FS. Vagina as microecosystem in normal and in inflammatory processes of the genitalia of various etiologies (literature review). *Consilium Medicum Gynecology*. 2002;4(4):189-195.
3. Derevyanko IM, Derevianko TN, Ryzhkov V. Ectopia of urethra in women. *Medical newspaper*. 2003;11:96-97.
4. Derevyanko IM, Derevianko TN. Woman hypospadias as the reason of chronic recurrent cystitis - diagnostics and treatment. *Med J Effective pharmacotherapy*. 2011;39:44-48.
5. O'Donnell RP. Chronic honemoon cystitis. Correction by surgery. *Br J Sexual Med*. 1978;5:26.
6. Gvozdev Mlu, Loran OB, Gumin LM, et al. Transposition of distal urethra in surgical treatment of recurrent lower urinary tract infections in women. *Urologiia*. 2000;3:24-27.
7. Komyakov BK. 228 *Results extravaginal transpositions of the urethra*. Urological statements; 2015. p. 54-55.
8. Mirkin YB, Karapetyan AV, Noise SY. Prosthetics outer ligament of the urethra bioabsorbable materials as a method of treatment of post-coital cystitis. *J Urogynecology*. 2015;2:15-17.