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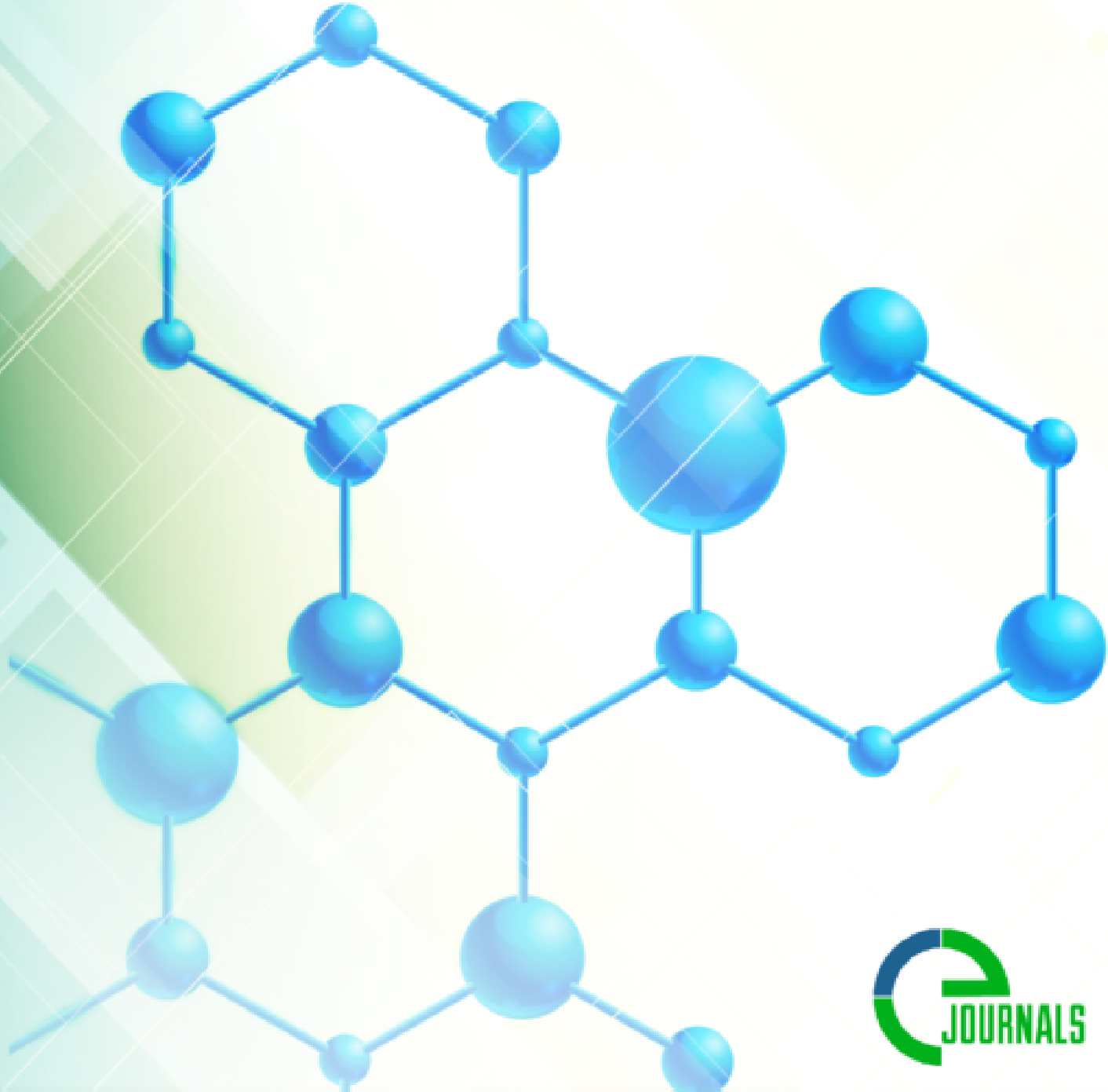

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SURGICAL COMPLICATIONS OF SIMPLE TRANSVESICAL PROSTATECTOMY

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Abstract: Simple transvesical prostatectomy today is one of the common methods of surgical treatment of benign prostatic hyperplasia due to the limited availability of modern technologies in some areas, ineffective follow-up clinical examinations and social factors. However, the incidence of postoperative complications after transvesical prostatectomy is still high. Among all surgical complications a considerable proportion of complications make up kidney and upper urinary tract complications. In the review has been noted the feasibility of using the Clavien-Dindo classification system of surgical complications to open prostatectomy.

Keywords: complications, prostate adenomectomy, Clavien-Dindo system.

Currently, only about 15% of patients with BPH in the world undergo surgery, and 85-90% of patients receive medical treatment [1, 2]. Despite the significant advances in modern conservative pharmacotherapy of BPH, the proportion of patients requiring surgical treatment is quite large. In Western European countries, it reaches 30%. In the conditions of Uzbekistan, despite the lack of reliable statistics, this percentage is certainly higher, which is associated with a number of factors, including the high cost of adequate conservative therapy.

With all the variety of factors influencing the choice of method, transurethral ones are preferred in economically developed countries. In these countries, transurethral resection of the prostate (TURP) is still the "gold standard" for surgical treatment of BPH. Traditional open prostatectomy: transvesical or retropubic remains the standard of management for BPH in some centers, especially in developing countries and in some developed countries, especially for large prostates [3, 4]. And, although TURP is becoming more and more accessible in our conditions, however, a lot of time will be required for its proper evaluation and comparison with an open manual. Nowadays, methods of laser enucleation of prostate hyperplasia are also widely used - holmium and thulium laser enucleation of the prostate (HoLEP, ThuLEP).

Transvesical simple prostatectomy remains one of the common methods of surgical treatment, which is explained by the low availability of modern technologies, inefficient clinical examination, and social factors. Therefore, continuing the search for improving its results remains relevant. Up to 30% of patients with BPH remain dissatisfied with the results of their operations. The main reasons for unsatisfactory results of treatment of patients are postoperative complications that develop in 40-45% of cases after prostatectomy [5]. The most common and life-threatening complications are infectious and inflammatory processes of the urinary tract and scrotum organs (0.7-60%), obstructive (8.8-40%) and thrombohemorrhagic (18-25%) complications [6, 7, 8, 9].

Among all complications, a considerable proportion are complications from the kidneys and upper urinary tract (UUT). The pathogenesis of changes in the kidneys and UUT in patients with BPH is complex and is determined by many factors, such as age-related changes, concomitant urological and non-urological diseases that affect their functional ability, the development of obstructive uropathy, secondary pyelonephritis and their immediate complication - chronic kidney disease (CKD). Urinary tract infection should

be considered a factor of fundamental importance in the pathogenesis of renal disorders in BPH and it significantly complicates the course of the disease. A.S. Portnoy (1989) noted pyelonephritis with a predominance of bilateral kidney damage in 78.6%. Mortality from secondary pyelonephritis and renal insufficiency (RI) dominates in the group of non-operated patients - 54%, with prolonged existence of vesical fistula - 76% and after cystostomy - 56.2%. Among those who died after open prostatectomy, pyelonephritis was the cause of death in 30.6% of cases, following cardiovascular and thromboembolic complications [10]. The development of chronic pyelonephritis and CKD are among the most serious complications of benign hyperplasia. It is associated with impaired urodynamics of the upper urinary tract [11,12] and occurs in 50-89% of cases [13, 14]. A certain importance in the development of chronic pyelonephritis is given to dishormonal changes. This concept is based on the idea of BPH as a disease that develops against the background of dishormonal disorders and estrogenization of the aging male organism. At the same time, it is indicated that in BPH the consequence of long-term exposure to endogenous estrogens, gestagens, and glucocorticoids leads to hypocontractility of the upper urinary tract and chronic urostasis at the background of which the picture of chronic pyelonephritis develops.

At the same time, timely elimination of obstruction and restoration of normal urine passage favor the normalization of kidney function in 80% of patients with BPH. In addition, there is an explanation for the pathogenesis of almost all postoperative infectious and inflammatory complications of prostatectomy. After open prostatectomy, a wound created in the vesicourethral segment, which, after eliminating the compression of the excretory ducts of the prostate lobules, is irrigated with discharge from the prostate and maintains purulent inflammation of the adenoma bed. The purulent process in the adenoma bed causes secondary healing, delays the processes of scarring and epithelialization and is a source of generalization of infection in the urinary and genital tract. There is a development of vesicoureteral, urethro-seminal, urethro-prostatic refluxes and generalization of infection - urethritis, prostatitis, cystitis, pyelonephritis, vesiculitis, epididymo-orchitis, suppuration of the postoperative wound, osteitis of the pubic bones [7].

One of the leading causes of CKD in patients with BPH is obstructive uropathy, which most often develops as a result of bilateral compression of the ureters by hyperplastic tissue (especially with subvesical growth of nodes) and / or compression of the orifices of the ureters by a hypertrophied detrusor. In addition, a violation of the passage of urine from the UUT can be caused not only by a mechanical obstruction to the outflow of urine, but also by dynamic or functional obstruction of the ureters due to a disorder in their kinetics against the background of bladder dysfunction [15]. As a result of an increase in intrapelvic pressure and pelvic-renal reflux, the hemodynamics of the kidney is significantly disturbed, followed by the development of structural changes in the intraorgan arteries in the form of their obliteration and diffuse stenosis. Hemodynamic disorders lead to serious metabolic changes and severe ischemia of the renal tissue. Due to obstructive uropathy, there is an increasing deterioration in all indicators of the functional state of the kidneys. A characteristic feature of this process is the early impairment of the concentration ability of the kidneys [14].

According to O.I. Bratchikov et al. (2010) in a meta-analysis of foreign literature data, an average of 13.6% of men treated for BPH have RI (range 0.3-30%). Such a wide scatter of data is primarily due to differences in the definition of RI and different upper limits of the norm for creatinine. Damage to the kidneys and urinary tract (pyelonephritis, renal failure) is the most common cause of death in patients with BPH, accounting for up to 40% in the structure of causes of death in patients with BPH (according to some

reports, even 52.2%) [8].

An important aspect is the prevention of emerging surgical complications, in particular renal ones, the problem of hemostasis in simple prostatectomy. There are more than 50 methods of hemostasis [16] for bleeding from the bed of the removed adenoma, however, each of them has its drawbacks. According to Allazov S.A. et al. (2014) the most reasonable is the use of hemostatics obtained from plant materials, in particular from the plant Lagochilus intoxicating. They noted a convincing hemostatic effect when using 10% infusion and tincture of lagochilus to stop bleeding after removing hyperplasia tissue [17].

Along with the surgical intervention itself, there is also a need for continuous evaluation of surgical methods in terms of the frequency of complications that occur. This problem can be overcome with a valid and reliable complication classification system. The classification system proposed by P.A. Clavien et al. (1992) is an excellent attempt to standardize the complications associated with surgical interventions. The Clavien classification system was first reported in 1992 and was originally used to assess complications associated with cholecystectomy [18]. In urology, the revised Clavien P.A.-Dindo D. classification [19] was used to assess complications after laparoscopic radical prostatectomy, laparoscopic nephrectomy, retroperitoneoscopic and percutaneous nephrolithotripsy [20-25], as well as complications associated with open transvesical prostatectomy [26-28].

In 2022 Gafarov et al. adapted the Clavien-Dindo classification to any surgical treatment of BPH. Authors unified the criteria for an uncomplicated postoperative course of surgical treatment of BPH as well as criteria for a complicated postoperative course to objectively evaluate the quality of any surgical treatment

performed for BPH, both open and minimally invasive [29].

The development of an evidence-based system for predicting the outcomes of surgical complications in open prostatectomy will improve outcomes and optimize treatment methods. Predicting the course and outcomes of surgical complications in open prostate adenomectomy in the perioperative and long-term periods is a difficult task, for the solution of which special studies are needed, among which the use of a unified, standardized classification and rubrication plays a special role. In this aspect, it may be promising to use the modified Clavien-Dindo classification of surgical complications [30-32].

In the study of Gafarov R.R. was made an attempt to standardize the criteria for postoperative complications of surgical treatment of BPH. Also, in order to predict the impact of postoperative complications on the outcome of the intervention, it was proposed to divide all complications into significant and insignificant. In turn, significant complications were divided into possible and tactical ones [33].

However, the system has its drawbacks, as noted by Constantinides C. et al. [34], it does not provide an opportunity to assess the long-term aspects of the quality of life of patients, does not take into account concomitant diseases, which are an important predictor of almost all categories of complications.

It is important to optimize the system of diagnosis and treatment of surgical complications after open prostate adenomectomy, as well as the possible prediction of long-term outcomes of these complications. A standardized classification of complications will allow for a correct comparison of the results of operations between different medical institutions, as well as within the same medical institution over time, or among operators. In addition, it allows a better assessment of the influence of various risk factors on the outcome of the procedure.

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