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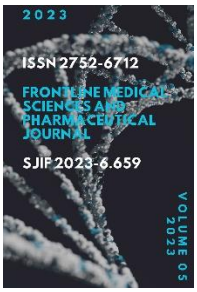

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Research Article

INTRA- AND POSTOPERATIVE SURGICAL COMPLICATIONS OF PROSTATE ADENOMECTOMY

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ABSTRACT

Adaptation of the Clavien P.A.-Dindo D. classification of surgical complications proposed for cholecystectomy to the adenomectomy operation will allow systematising various surgical complications arising during this operation. Besides, timely detection and full accounting of complications allows to improve non-mediated and final results of surgical intervention.

KEYWORDS

Prostate, adenomectomy, haemostasis, lagohilus, surgical complications.

INTRODUCTION

Nowadays, prostate adenoma has become an important issue in urological practice due to the presence of unexplored issues and complications arising during radical surgical interventions [1, 6]. The discussion opened by the editorial board of the journal "Urology" on the topic: "The choice

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of optimal surgical treatment of patients with prostate adenoma" initiated by the leading urologist N.F. Sergienko [7] is timely.

The frequency of complications after open adenomectomy ranges from 8.8 % to 27 %, bladder hyperreactivity after transurethral resection of the prostate remains in 16-80 % of cases. It is relevant not only to identify and eliminate these perioperative surgical complications during adenomectomy, but also to predict their outcomes [14]. From this point of view, the possibility of diagnosing and predicting the outcomes of certain forms of intra- and postoperative surgical complications during adenomectomy with the use of various scales, mathematical methods, and modern medical technology is currently being considered [8].

A review of the scientific literature and analysis of the state of the problem of predicting the outcomes of surgical complications during adenomectomy showed the absence of a comprehensive in-depth study of many of its aspects [1,9]. The outcomes of surgical complications of open adenomectomy have not yet received a rubric restriction and proper classification systematisation. There are no studies devoted to the prediction of various outcomes of surgical complications in adenomectomy in the dynamics from the moment of surgery to hospital discharge and further on in the distant periods.

We are going to adapt the classification of Clavien P.A.-Dindo D. [15] on surgical complications, proposed for some surgical operations (cholecystectomy, etc.) to the adenomectomy operation, taking into account, in addition to preoperative, also distant surgical complications.

In recent years, there have been reports in the literature regarding the classification of surgical complications [2,11]. Their comparative assessment was carried out by Giyasov Sh.I. [3,12], according to whom Clavien P.A. et al. [13] proposed general principles of classification of surgical perioperative complications applied to cholecystectomy by degrees.

According to Giyasov Sh.I., Allazov S.A. et al. the proposed variant of classification could not fully satisfy the requirements of doctors. In this regard, Dindo D. et al, modified and improved this classification based on the danger of complications for the patient's life and the duration of disability.

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According to the modified classification:

I degree - any deviations from the norm in the postoperative period, not requiring pharmacological therapy or surgical, endoscopic and radiological intervention. Only therapeutic regime is carried out, namely - antiemetics, antipyretics, analgesics, diuretics, electrolytes and physiotherapy. This also includes treatment of nosocomial wound infection;

Grade II - complications that required drug therapy with drugs other than those listed in Grade I. This degree includes blood transfusion and complete parenteral nutrition;

Grade III requires surgical, endoscopic or radiological intervention:

IIIa- interventions that are performed without general anaesthesia,

IIIb interventions performed under general anaesthesia;

IV degree, life-threatening complications (including central nervous system complications) requiring the patient to stay in an intensive care unit:

IVa- single organ failure (including dialysis),

IVb- multi-organ failure;

V degree - death of the patient.

The necessity to study the problem of predicting the outcomes of surgical complications during adenomectomy is dictated by their increasing frequency and severity, as well as severe complications [8].

The development of a scientifically substantiated system of predicting the outcomes of surgical complications during prostate adenomectomy for different levels of practical healthcare will allow us to find reserves to improve outcomes and optimise treatment methods. In recent years, there have been reports in the literature regarding the classification of surgical complications [2,11]. Their comparative assessment was carried out by Giyasov Sh.I. [3,12], according to whom Clavien P.A. et al. [13] proposed general principles of classification of surgical perioperative complications applied to cholecystectomy by degrees.

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Purpose of the study: Assessment of the quality of medical care is possible by reliable data on treatment outcomes, which would contribute to reducing the costs of medical services while improving their quality.

Material and Methods of Study. The final evaluations of surgical interventions remain

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limited due to the difficulty in identifying complications and classifying their severity.

The essence of the classification of Clavien P. et al. [2,8] and Dindo D. et al. is to assess the severity of a complication depending on the method of its treatment.

This approach allows us to identify the majority of complications and prevent underestimation of the main negative results. First of all, life-threatening complications and those associated with high mortality, stress for patients and significant expenditure of medical resources and requiring intensive treatment should be separated from complications that can be treated generally [3,9].

A classification that would combine medical, financial and patient concerns is not possible due to the difficulty in correlating these aspects [4,10]. Based on these considerations, the classification of Dindo D.et al. is based mainly on medical aspects, and first of all, on the invasiveness of treatment carried out to correct the complication. Table 1 shows the varieties of surgical complications encountered in the practice not only by urologists, but also by other specialists.

The improved classification of complications Clavien P.A.-Dindo D. is currently a reliable tool for qualitative assessment of complications in surgical practice. It was also used by urologists to assess complications after laparoscopic nephrectomy and radical prostatectomy, retroperitoneoscopy and percutaneous nephrolithotomy, comparative analysis of the effectiveness of different methods of haemostasis after adenomectomy, we decided to use the frequency of surgical complications as a criterion for evaluating each method of surgical intervention. For this purpose we had to adapt the above-mentioned classifications of surgical complications to the adenomectomy operation. We took as a basis the most frequent complications after open (traditional) adenomectomy, which were observed on the example of 350 patients with adenomectomy with different methods of haemostasis (tamponation of the adenoma bed, suturing of the bed, lowering of the adenoma neck and capsule with removable sutures and treatment of the adenoma bed with lagohilus infusion) (Table 2).

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Table 1.

Clinical examples of different complications

Degree	Organ system	Examples
Degree I		
	Heart	
	Respiratory	
	Nervous	
	Digestive Kidney	
	Others	
Degree II	Heart	
	Respiratory	
	Nervous	Atrial fibrillation treated by level correction
	Digestive	
	Kidneys	
Degree III a	Others	correction
	Heart	Atelectasis requiring physiotherapy
	Respiratory	
	Nervous	Transient impairment of consciousness not requiring treatment
	Digestive	Transient increase in creatinine level
	Kidneys	Wound infection when treated by simple wound opening at the patient's bedside
Degree III b	Others	Tachyarrhythmia requiring beta-blocker
	Heart	Treatment of pneumonia with antibiotics on a general ward

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	Respiratory	Transient cerebral circulatory collapse,
	Nervous	requiring anticoagulants
	Digestive	Antibiotic therapy for infectious diarrhoea
	Kidneys	Antibiotic therapy for urinary tract infection
Degree IV a	Others	Same as I if antibiotic therapy is necessary
	Heart	Same as I if antibiotic therapy is required
	Respiratory	Antibiotic treatment in a pulmanological ward.
	Nervous	See grade IV.
	Digestive	Biloma after liver resection requiring
Degree IV b	Kidneys	Treatment of ureteral stenosis with stenting after kidney transplantation
	Heart	
	Respiratory	Closure of a dissociated wound in the operating
	Nervous	
	Digestive	
Index "d"	Kidneys	Closure of a disconnected wound in the operating
Degree	Heart	Cardiac tamponade requiring fenestration after
Degree I	Respiratory	Operative closure of bronchopleural fistula after thoracic interventions.
	Nervous	See degree IV

Table 2.

Surgical complications after open adenomectomy (n-350)

Complications	Method of haemostasis			
I. Immediate (post-operative):	**Tamponisation (N=80)**	**Suturing (N=74)**	**Removable sutures**	**Lagohilus (N=110)**
		Абс. кол-во (%)		

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1. haemorrhage	24 (30,0)	13(17,6)	3 (3,5)	2(1,8)
2. haemorrhagic shock	8(10,0)	5 (6,8)	4 (4,6)	-(-)
3. painful shock	9(11,2)	11 (14,9)	8 (*)	7 (6,4)
4. oozing (oozing, pro-lutionary fluid)	6(7,5)	3 (4,0)	4 (4,6)	-(-)
5. exacerbation of infection	36 (45,0)	28 (37,8)	44(51,2)	6 (5,4)
5a. urosepsis,	1 (1,2)	2 (2,7)	8 (9,3)	3(2,7)
5b. bacterial shock,	2 (2,5)	6(8,1)	8 (9,3)	1 (0,9)
5c. orchoepididymitis	13 (16,2)	15 (20,3)	18(21,0)	8 (7,3)
5g. acute pyelonephritis	3(3,7)	9(12,2)	8 (9,3)	6(5,4)
6. OPN	2 (2,5)	2 (2,7)	4 (4,6)	1 (0,9)
7. worsening of CPN	12(15,0)	8 (10,8)	6(7,0)	4 (3,6)
8. thromboembolism	2 (2,5)	1(1,3)	2 (2,3)	1 (0,9)
9. DIC	-(-)	1 (1,3)	-(-)	-(-)
10. lethality	4(5,0)	2 (2,7)	2 (2,3)	-(-)
II.Remote (late): 1. non-healing suprapubic fistula	8 (10,0) 4(5,0)	3 (4,0) 6(8,1)	4 (4,6) 3(3,5)	2 (1,8) 2(1,8)
3.iatrogenic urethral strictures,	14(17,5)	19(25,7)	8 (9,3)	4 (3,6)
4.stenosis of the bladder neck,	3(3,7)	12 (16,2)	4 (4,6)	1 (0,9)
5. urethral strictures.	-(-)	1 (1,3)	-(-)	-(-)
6. urinary incontinence	2(2,5)	4(5,4)	12 (13,9)	1 (0,9)
7.backflow of semen ("dry intercourse", "dry orgasm", retrograde ejaculation)	3 (3,7)	5 (6,8)	4 (4,6)	2 (1,8)
8.violation of copulatory and reproductive function)	34(42,5)	22(29,7)	10(11,6)	12(10,9)
9.late bleeding	2(2,5)	1 (1,3)	2 (2,3)	-(-)

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10.bladder stones,	6 (7,5)	8(10,8)	3 (3,5)	1 (0,9)
P. pre-bladder	3 (3,0)	6(8,1)	2 (2,3)	1 (0,9)
12. pre-bladder stones	2 (2,0)	2 (2,7)	1 (1,2)	1 (0,9)
13. ligature stones	3 (3,7)	11(14,9)	1 (1,2)	-(-)
14. foreign bodies	2 (2,5)	2 (2,7)	4 (4,6)	-(-)
15. recurrence of BPH	1 (1,2)	-(-)	1 (1,2)	-(-)

Surgical complications listed in Table 2 were adapted to the generally accepted international Clavien P.A.-Dindo D. classifications as follows (Table 3).

Table 3

Adapted Clavien-Dirtdo classification of surgical perioperative complications after adenectomy

Complications:	Method of haemostasis			
Abs.num.	**Tamponisation (N=80)**	**Tamponisation (N=80)**	**Tamponisation (N=80)**	**Tamponisation (N=80)**
I degree	148	135	110	38
II degree	33	50	36	16
III degree	18	14	12	8
III a	12	10	8	5
IIIв	6	4	4	3
IV degree	6	7	6	4
V degree	4	2	2	-

RESULTS

Transurethral resection (TUR) and transurethral adenomectomy are currently the most widely used surgical methods of prostate adenoma treatment [6]. Due to low traumatic and high efficiency TUR takes the leading position before other methods ("gold standard"), but it is accompanied by intra- and postoperative complications in 8-12 % of patients. Besides, the majority of patients have contraindications to this method of prostate adenoma treatment. So far the

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transesophageal adenomectomy remains the most radical method and has a number of advantages: 1) the possibility of performing at any type of growth and size of the gland; 2) the possibility of performing the operation; 2a) at large size of adenomatous nodules; 26) large or multiple stones in the bladder; 2c) the presence of bladder diverticula; 2g) when it is impossible to place the patient in the urological chair because of ankylosis of the hip joints [5,12].

Many of the proposed different methods of adenomectomy and methods of haemostasis have not been widely used in practice because of the difficulty of their performance, unreliability of stopping bleeding from the bed, high frequency of intra- and postoperative complications [7].

According to the obtained data, there is a clear tendency to decrease the incidence of postoperative complications in descending order when haemostasis is performed by tamponage, suturing, removable sutures, especially when the adenoma bed is treated with 10% lagohilus infusion [11].

It is necessary to admit the sceptical attitude of practicing urologists to adenomectomy with tamponisation of the adenoma bed and their fascination with suturing, lowering of the bladder neck to achieve hemostasis. As O.L. Tiktinekiy and S.N. Kalinina [6,12] correctly note, the result of surgical treatment should be evaluated by the lethality, bed-days and complications, although almost always the complications (especially bleeding) are associated with the method of surgical treatment, in particular, the method of hemostasis.

Of course, postoperative mortality is lower in patients with posterolateral access or one-stage blind suture. Postoperative mortality is lower in patients operated on one-stage than in patients operated on two-stage, i.e. in patients with suprapubic urethral fistula. This is understandable - patients of the second group usually suffer, in addition to BPH, also various somatic and intercurrent diseases.

Our clinical observations based on the frequency of intra- and postoperative surgical complications during prostate adenomectomy indicate the advantage of the method of haemostasis by treatment of the bed with lagohilus infusion in comparison with tam-poning, suturing or removable sutures.

CONCLUSIONS

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Thus, it should be emphasised that there is still no method of definitive haemostasis at adenomectomy, This should not only alarm the urological community, but also set it up for further in-depth scientific search in this priority direction.

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