

18. Liatsikos E.N., Kapoor R., Lee B., Jabbour M., Barbalias G., Smith A. D. *Angular percutaneous renal access. Multiple tracts through a single incision for staghorn calculous treatment in a single session.* Eur. Urol., 2005; 48: 832–837.
19. Maheshwari P.N., Andankar M.G., Bansal M., *Nephrostomy tube after percutaneous nephrolithotomy: large bore or pigtail catheter?* J. Endourol., 2000; 14: 735–737.
20. Michel M.S., Trojan L., Rassweiler J.J., *Complications in Percutaneous Nephrolithotomy.* European urology, 2007, 51, 899–906.
21. Netto Jr. N.R., Ikonomodis J., Ikari O., Claro J.A., *Comparative study of percutaneous access for staghorn calculi.* Urology, 2005; 65:659–663.
22. Patel R.D., Newland C., Rees Y., *Major complications after percutaneous nephrostomy – lessons from a department audit.* Clin. Radiol., 2004; 59:766–769.
23. Pearle M.S., Lingeman J.E., Leveillee R., Kuo R., Preminger G.M., Nadler R.B., et al. *Prospective, randomized trial comparing shock wave lithotripsy and ureteroscopy for lower pole caliceal calculi 1 cm or less.* Journal of Urology, 2005; 173(6):2005–2009.
24. Pietrow P.K., Auge B.K., Lallas C.D. et al., *Pain after percutaneous nephrolithotomy: impact of nephrostomy tube size.* J. Endourol., 2003; 17(6):411–4.
25. Robert M., Drianno N., Marotta J. et al., *The value of retrograde ureterorenoscopy in the treatment of bulky kidney calculi.* Prog. Urol., 1997; 7(1): 35–41.
26. Segura J.W., Le Roy A.J., *Percutaneous lithotripsy.* Urology, 1984, XXIII, 5.
27. Segura J.W., *Percutaneous endourolgy. Vascular complications.* World J. Urol., 1985, 3.
28. Segura J.W., Patterson D.E., LeRoy A.J., et al. *Percutaneous removal of kidney stones: review of 1,000 cases.* J. Urol., 1985; 134:1077–1081.
29. Srivastava A., Singh K.J., Suri A., *Vascular complications after percutaneous nephrolithotomy: are there any predictive factors?* Urology, 2005; 66:38–40.
30. Stoller M.L., Bolton D., St. Lezin M., Lawrence M., *Percutaneous nephrolithotomy in the elderly.* Urology, 1994; 44:651–654.
31. Tiselius H.G., Ackerman D., Alken P. et al., *Guidelines on urolithiasis.* Guidelines, European Association of Urology, 2006; p. 1–79.

Rezumat

Scopul lucrării a fost analiza retrospectivă a rezultatelor NLP în vederea stabilirii indicațiilor terapeutice corecte. A fost studiat un lot de 79 de pacienți la care s-a efectuat NLP pentru litiază renală pe parcursul anului 2011. Succesul metodei a fost de 78.5%, eșecul procedurii a fost cauzat de complicații intraoperatorii care au impus repetarea procedurii sau recurgerea la altă metodă de tratament. Rata complicațiilor minore a fost de 18.5%, cele majore: perforație de colon și urinom paranefral s-au întâlnit în 2.52% cazuri. În concluzie, nefrolitotomia percutanată este o intervenție indispensabilă terapiei multimodale a litiazei renale. NLP este o metodă eficientă în rezolvarea diferitelor tipuri de litiază renală, beneficiile majore ale acestei metode miniinvasive sânt remarcate mai ales în cazurile

dificile (litiază complexă). Complicațiile majore, deși rare, sunt redutabile și necesită depistare timpurie și acțiune fermă în cazul apariției lor.

Summary

Retrospective analysis of the results of NLP to establish the correct therapeutic indications. In the study was included 79 patients with urolithiasis undergoing PCNL in 2011 year. The success of the method was 78.5%, procedure failure was due to intraoperation complications and was necessary to repeat the procedure or to use another method of treatment. The rate of minor complication was 18.5%, the most difficult major complication was 2.52%: perforation of the colonum and paranephral urinoma. Conclusions: in the multimodal approach of urolithiasis PCNL is indispensable method of treatment; PCNL is effective method in the treatment of diferent types of kidney stones, the major advantage of this miniinvasive method are important in difficult situations, (complex stones). Major complications are no so frequent, we must put immediate diagnosis and immediate action if this complications appears.

Резюме

Цель работы – ретроспективный анализ результатов ЧНЛТ, с целью определения правильных показаний к терапии. В исследование были включены 79 пациентов с мочекаменной болезнью, перенесших ЧНЛТ в 2011 году. Успех метода был зафиксирован в 78.5% случаев, неудачи были связаны с интраоперационными осложнениями, которые вызвали необходимость повторения процедуры или применения других методов лечения. Частота незначительных осложнений составила 18.5%, частота серьезных осложнений, таких как: перфорация толстого кишечника и околопочечного мочевого затека, составила 2.52%. Чрескожная нефролитотомия является незаменимым методом в комплексном лечении мочекаменной болезни почек. ЧНЛТ является эффективным методом разрешения различных типов почечных камней, основные преимущества этого миниинвазивного метода зафиксированы особенно в сложных случаях (сложные камни почек). Серьезные осложнения, будучи редкими, являются значимыми и требуют ранней диагностики и решительных действий.

THE ROLE OF OPEN SURGICAL TREATMENT IN STAGHORN LITHIASIS

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Introduction

Urinary stones disease is placed on third place in urological diseases structure, which is from 10% to 40%, yielding only urinary infection and prostate pathology, representing 59.6% of all renal pathologies [1, 2].

Nephrolithiasis is an estimated frequency between 1.0% and 4.0% of the general population is very rare in young people and affects mainly older people, with a frequency of 70% in patients between four six decades of life, tooth that up to 11% of patients become disabled [3, 4, 5, 6]. Kidney stones disease is placed on the third place in the structure of disability, yielding only oncological diseases and urinary infections [7].

Staghorn calculi (SC) is defined by the presence of stone in pylon and more than two groups of calyx. [8]. Staghorn calculi is a special form of urinary lithiasis, differing in form and also by etiopathogenic aspect, symptoms and therapeutic management [2, 9]. This form of stones is a serious pathology which is placed on the first places in urinary [10].

By the early 60 years, most doctors urologists were followers of conservative treatment of staghorn nephrolithiasis. Frequently these patients were hospitalized in the clinic with severe infections, nephrosclerosis or renal failure.

In 1970 the city of Tokyo has been the International Congress of Urology, dedicated of coralliforme urolithiasis. This favored the deeper study of this pathology and expanded indications for surgical treatment in this population.

At present most authors are in favor of active treatment of staghorn lithiasis. These changes are caused by pyelonephritis. Inflammatory process spreads mainly in the gap and lead to renal compression and massive destructive collecting tubules and nephrons.

Staghorn lithiasis results of surgical treatment must be assessed according to the following criteria:

- Complete removal of the calculi (rate "Stone Free").
- The need for repeated application of auxiliary procedures.
- Assessment of complications, which directly reflects on the operated kidney function [1, 2, 13, 14].

Because contemporary methods of diagnosis and treatment of urolithiasis, the frequency CL decreased significantly in recent years and currently represents about 5% of all forms of urolithiasis. Implementation in practice Urology miniminvasive methods of treatment, such as percutaneous nephrolithotomy (NLP), extracorporeal shock wave lithotripsy (ESWL) have changed tactics surgical treatment of urolithiasis. These methods have allowed to significantly reduce the rate of serious complications and increased efficacy SC, which considerably reduced the frequency of open operations [15, 16, 17].

Even in these conditions open surgery by nephrolithotomy remains highly effective in the management of patients with staghorn calculi [18-20]. Directions to open surgery can be divided into: absolute (hematuria, acute pyelonephritis, paranephritis, anuria) and relative (painful syndrome, progressive increase of the stone forming, decreased kidney function). Conservative treatment is only when they are due to contraindications associated pathologies or when the patient refuses surgery [21].

Some urologists have expanded indications for the treatment by nephrolithotomy in SC, arguing that the fact that the rate of "stone free" in such processes is the biggest, reaching the 100% [2, 18-20, 22].

Rocco F. et al (1999) states that compliance with the anatomical landmarks, open surgery are most effective in the treatment of SC. Term results of these procedures are satisfactory, as in a stage can be removed completely calculated mass, residual fragments and preventing chronic infection of the kidney [23].

Nephrotomy incisions, especially preserved renal parenchyma requires great experience of the surgeon, because complete removal and suturing of renal parenchyma, may increase during ischemia and intraoperative bleeding. Unfortunately, some surgeons perform an operation with duration of ischemia as "warm" 30 – 40 min. Multiple studies have demonstrated that prolonged ischemia decreased renal function may occur frequently necrotic papillitis and hematuria [24-27].

It is clear that indications of nephrolithotomy should be strictly limited must be performed in thin renal parenchyma and stone localized in pylon intrarenal type or mainly localized stones in calyx [26, 27].

The purpose of the study

Description of the method of open surgery by nephrolithotomy for coralliform calculi performed in our clinic of evaluation by own results.

Materials and methods

Between the years 2001–2010, in the Urology Clinic of Republican Clinical Hospital, was treated 78 patients with SC by nephrolithotomy. The number of operations carried out by the year of study are presented in *fig. 1*.

Age of patients ranged from 23 to 73 years, average age was 46.13 years (*tab. 2*). In the study group patients according to sex distribution was 26 (33.3%) men and 52 (66.7%) – women (*tab. 1*). All patients were investigated clinically and laboratory standards of the examination schedule.

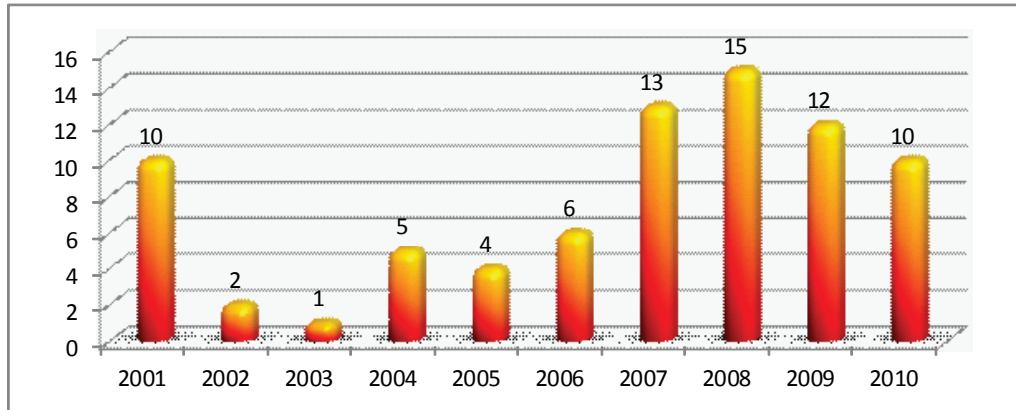


Figure 1. Number of operations performed in CL.

Table 1

Sex ratio structure.

Sex	Nr.	%
Male	26	33.3
Female	52	66.7

Table 2

Grouping patients depending on age group.

Age	Nr.	%
21-39 years	14	17.9
40-59 years	48	61.5
more than 60	16	20.5

According to the case, morphology and radiological properties of stones study group patients were divided as follows: staghorn secondary lithiasis was present in 3 (6.5%) patients, radiopaque calculi were detected in 44 (95.7%) cases. Lithiasis Roentghen negative was (4.3%) patients (tab. 3). According of stones location (tab. 4), were assigned: Right 25 (32.1%), the left 44 (56.4%), bilateral 9 (11.5%). The relative sizes of the stones ranged from 3 to 7 cm, with an average of 3.44 ± 0.9 cm. Multiple calculi (including multiple stones in pelvis) were present in 15 (18.8%) patients (fig. 2).

Table 3

Grouping of patients according to radiological criteria of stones.

Radiological criteria of stones	Nr.	%
Rg negativ	4	5,13
Rg pozitiv	74	94,87

Table 4

Distribution of patients according to the stone location.

Stone location	Nr.	%
Bilateral	9	11.5
Right side	25	32.1
Left side	44	56.4

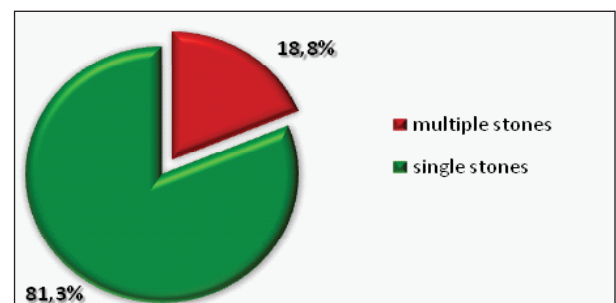


Figure 2. Distribution of stones (including multiple stones in pelvis) to the patients.

Distribution (percentage) of patients classified after Moores and O`Boyle is shown in table 5. Staghorn stones was found in 37 overall (47.4%) and partial in 41 staghorn calculi (52.6%) cases.

To assess kidney function was affected by the proposed method Gycev used in 1986. The share of patients according to the classification proposed by K. B. Xypueв, with assessment and grading of kidney deficiency affecting secretion is shown in table 6.

Table 5

Number of patient with staghorn lithiasis classification after Moores and O`Boyle.

Tip	Nr.	%
Tip A	25	32,1
Tip B	19	24,3
Tip C	29	37,2
Tip D	0	0
Tip E	5	6,4

Table 6

Number of patients according to the classification proposed by K. B. Xypueв (renal secretion deficit in %).

Secretion deficit	Nr.	%
F-1 (0 - 20%)	28	39.5
F-2 (21 - 50%)	32	40.0
F-3 (51 - 70%)	18	23.1
F-4 (71 - 100%)	0	0

Oxalate stones in 22 (28.2%) cases, uric stones – 4 (5.1%) cases, phosphates – 10 (12.9%) cases, stones mixed – 4 (5.1%) cases. In 38 (47.8%) composition of stones has not been determined (tab. 7).

In all patients undergoing surgery chronic pyelonephritis was present on the affected side, in the acute phase – 9 (10.2%) in remission phase – 16 (18.2%) in the latent phase – 53 (71.6 %) cases (tab. 8).

Table 7

Distribution according to the chemical structure of stones.

Chemical structure of stones	Nr.	%
Oxalic	22	28.2
Phosphate	10	12.8
Uric	4	5.1
Mixed	4	5.1
Not determine	38	48.7

Table 8

Frequency of chronic pyelonephritis in study.

Chronic pyelonephritis	Nr.	%
Acute	9	10.2
Latent	53	71.6
Remission	16	18.2

Results and discussion

Lot of patients described above underwent surgery: the bivalve nephrolithotomy in 18 (23.1%) cases, anatomic nephrolithotomy with refrigeration 5 (6.4%) cases, radial nephrolithotomy in 23 (29.5%) cases, calix resection – in 4 (5.1%) cases and 28 (35.9%) by pyelonephrolithotomy (tab. 9).

Table 9

Performed surgery.

Performed surgery	Nr.	%
Bivalve nephrolithotomy	18	23.1
Anatomic nephrolithotomy with refrigerations	5	6.4
Radial nephrolithotomy	23	29.5
Pyelonephrolithotomy	28	35.9
Calycotomy	4	5.1

In cases where renal parenchyma is preserved above the stone, increase the risk of significant bleeding during incision. To reduce the risk of bleeding during surgery renal ischemia was obtained by the following methods:

- Renal artery clipping was applied refrigeration kidney in 5 (6.4%) cases
- vascular pedicle clamping (artery + vein) in 32 (41.1%) cases

- vascular pedicle digital clipping in 12 (15.4%) cases

Renal ischemic times ranged from 7-35 min, mean 13.9 ± 7.06 ischemia was min. Without pedicolului vascular clamping was applied in only 29 (37.1%) cases.

The lack of bleeding allows us to remove large stones with a relatively small incision. Place of incision was made on the „avascular renal line” (Brodell line), which corresponds to 0.5 to 1.0 cm posterior edge of the convex side of the kidney [28]. So nephrotomic incisions were made in 15 (19.2%) cases. In other cases the incision was made in that place is the best thin renal parenchyma. In 16 (20.5%) cases were bleeding from the incision, who stopped by applying additional sutures on renal parenchyma. When we perform the nephrotomy the size of incision was 3 - 4 cm. A important condition was to keep the fibrous capsule as a basis for further application of sutures.

Decision kidney drainage or take depending on several factors: the presence of dilatation of collecting system, the frequency oft acute pylonephritis , the degree of urinary infection and restant, preferably was nephrostomy, which was conducted 43 (55.1%) patients undergoing surgery. Structure of urine deviations in operated patients is shown in figure 3.

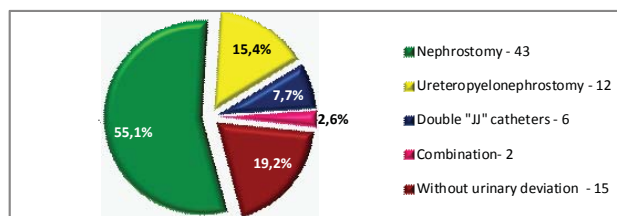


Figure 3.

An important point is the application of sutures on nephrotomy wound, correct performance of this stage is one of the essential conditions of success.

We prefer to suture the renal parenchyma application “upstairs”. Initial application process is a deep sutures renal parenchymal renal pelvis to the level, then the same wire is applied more superficial suture with approximately 0.7 cm from the capsule. The number of sutures used depends on the length of the incision is usually sufficient to apply a 3-4 sutures also, that should not be closely tied off, because after removing of forceps from kidney pedicle renal circulation occurs restore a pressure on the sutures. In the group of patients undergoing nefrolitotomieii were applied two types of sutures, “upstairs” to 53 (67.9%) patients and anatomical suture in “U” in 25 (32.1%) patients.

Sutures described above provides a good overlapping margins of the wound. The need to drain the kidney through nephrostomy application for 8-14 days

(average 11 days), or up to restore normal urinary passage.

Duration of surgery ranged between 50 and 120 min. The average time used for this type of surgery was 67.39 ± 13.28 min.

The total duration of hospitalization was 7 to 37 days, the average hospital stay being 16.19 days. Postoperative hospitalization time was 5 to 32 days, the average of 12.32 days.

To assess the effectiveness of surgical treatment was applied to evaluate the occurrence of diuresis in the kidney after surgery and functional values of pre-and postoperative kidney surgery (tab. 10, 11).

Table 10

The appearance of diuresis depending of the method of surgery who was applied.

	1 – 3 days p/o	4 – 6 days p/o	7 – 10 days p/o
Bivalve nephrolithotomy	-	7	11
Anatrophic nephrolithotomy with refrigerations	-	1	4
Radial nephrolithotomy	12	11	-
Pyelonephrolithotomy	18	10	-
Calycolithotomy	4	-	-

The data presented in table 10 it is estimated that the more aggressive method has been applied appearance of the diuresis was longer and depend of the tipe of operations.

Table 11

Functional values of pre-and postoperative kidney surgery (3 months)

Before operations After operations	F 1	F 2	F 3	Total number after operations
F 1	23	11	-	31
F 2	3	17	5	25
F 3	-	5	9	14
F 4	-	1	3	4
Before operations: total number	26	30	17	73

Because the treatment tactics was described above, we have obtained success in the treatment of severe forms of nephrolithiasis. Acute pyelonephritis occurred in 18 (23.1%) patients, of which 2 (2.6%) patients with complicated severe infections of urinary tract with kidney removal.

Postoperative bleeding:

Early – were present in 5 (6.4%) patients, which 4 (5.12%) was resolved conservatively, and in one

(1.28%) case was made reoperations with repeated suturing renal parenchyma .

Late – were in 7 (8.97%) cases, of which 3 (3.85%) patients required surgical treatment was repeated by nephrectomy because of profuse bleeding, the remaining four (5.13%) cases were resolved conservatively.

Late postoperative nephrosclerosis was detected in 4 (5.13%) patients.

In most patients the stone mass was removed a single step, obtaining the rate “STONE FREE” of 94.70%. Restant fragments, most of which up to 5 mm in diameter were resolved with litholitic drugs and / or ESWL.

Conclusions

1. Radical surgical tehncis with minimal trauma and bleeding, for removing stones, are the basic direction in the treatment of CL.

2. Despite the probability of any severe complications after nephrotomy the opening of renal parenchyma offers very good possibilities to visualize the kidney parenchyma and collecting system, which give a possibility to remove the stone in one step and increase the rate of “Stone Free”.

3. Getting the correct indications and selection, based on data pre-and intraoperative makes the results of nephrolithotomy optimal for patients with severe and complicated forms of nephrolithiasis.

Bibliography

1. Joseph W., Segura J.W., Glenn M., Dean g. et al., *Nephrolithiasis Clinical Guidelines Panel summary report on the management of staghorn calculi*. The American Urological Association Nephrolithiasis Clinical Guidelines Panel. J. Urol., 1994; 151(6): 1648-51.16.

2. Дутов В.В., *Современные способы лечения некоторых форм мочекаменной болезни*. Дис. д-ра мед. наук. М., 2001.

3. Sinescu I., Gluck G., *Tratat de urologie*. Vol II., Geavlete P. Litiaza urinară. Bucureşti, 2008: 1025-1088.

4. Тиктинский О.Л., *Мочекаменная болезнь*. О.Л. Тиктинский, В.П. Александров. – СПб, 2000, 384 с.

5. Ceban E., *Tratamentul diferențiat al calculilor ureterali*. Teza de doctor în științe medicale, Chişinău, 2003, p 3-4.

6. Stamatelou K,K., Francis M.E., Jones C.A., Nyberg L.M., Curhan G.C., *Time trends in reported prevalence of kidney stones in the United States: 1976-1994*. Kidney Int., 2003; 63(5):1951-1952.

7. Панин А.Г., *Патогенез дезинтеграции, растворения мочевых камней и физические методы лечения уролитиаза*: Автореф. дисс. докт. мед. Наук, – СПб., 2000, 39 с.

8. Blandy J.P., Singh M., *The case for a more aggressive approach to staghorn stones*. J. Urol., 1976; 1 IS: 505.

9. Meretyk S., *Complete staghorn calculi: Random prospective comparison between ESWL monotherapy and combined PCNL with ESWL*. J. Endourol., 1995, 9: 62.

10. Трапезникова М.Ф., *Современные аспекты дистанционной литотрипсии*. М.Ф. Трапезникова, В.В. Дутов. Урология и нефрология, 1999; 1: 8–12.

11. Lars Grenabo, Hans Hedelin, Silas Pettersson, *The Severity of Infection Stones Compared to other Stones in the Upper Urinary Tract*. Scand. J. Urol. Nephrol., 1985;19: 285-289.

12. Pearle M.S., Calhoun E.A., Curhan G.C., *Urologic diseases in America project: urolithiasis*. J. Urol., 2005; 173:848-857.

13. Alivizatos G., Skolarikos A., *Is there still a role for open surgery in the management of renal stones?* Curr. Opin. Urol., 2006;16(2):106-11.

14. AL-Kohlany K.M., Shokeir A.A., Mosbah A., Mohsen T., Shoma A.M., Eraky I., EL-Kenawy M., EL-Kappany H.A., *Treatment of complete staghorn stones: a prospective randomized comparison of open surgery versus percutaneous nephrolithotomy*. J. Urol., 2005;173(2):469-473.

15. Preminger G.M., Assimos D.G., Lingeman J.E., Nakada S.Y., Pearle M.S., Wolf J.S. JR., et al., Chapter 1: *AUA guideline on management of staghorn calculi: diagnosis and treatment recommendations*. J. Urol., 2005;173:1991-2000.

16. Teichman J.M.H., Long R.D., Hulbert J.C., *Long-term renal fate and prognosis after staghorn calculus management*. J. Urol., 1995; 153: 3: 1403–1406.

17. Assimos D.G., Wrenn J.J., Harrison L.H., McCullough D.L., Boyce W.H., Taylor C.L., Zagoria R.J., Dyer R.B., *A comparison of anatomic nephrolithotomy and percutaneous nephrolithotomy with and without extracorporeal shock wave lithotripsy for management of patients with staghorn calculi*. J. Urol., 2001;145(4):710-714.

18. Thomas Knoll Peter Alken. *Management of struvite stones – pathogenesis, diagnosis, prevention and open surgical treatment*. EAU Update on stone disease, 2005: 20-29.

19. Honeck P., Wendt-Nordahl G., Krombach P., Bach T., Häcker A., Alken P., Michel M.S., *Does open stone surgery still play a role in the treatment of urolithiasis? Data of a primary urolithiasis center*. J. Endourol., 2009; 23(7):1209-1212.

20. AL-Kohlany K.M., Shokeir A.A., Mosbah A., Mohsen T., Shoma A.M., Eraky I., EL-Kenawy M., EL-Kappany H.A., *Treatment of complete staghorn stones: a prospective randomized comparison of open surgery versus percutaneous nephrolithotomy*. J. Urol., 2005;173(2):469-473.

21. Яненко Э.К., *Коралловидный нефролитиаз*. Дис. канд. мед. наук. М., 1980.

22. Assimos D.G., *Anatomic nephrolithotomy*. Urology, 2001;57(1):161-1655.

23. Rocco F., et al: *Long-term results of intrarenal surgery for branched calculi: is such surgery still valid?* Br. J. Urol., 1998; 81: 796–800.

24. Wickham J. E. A., Hanley, H. G. & Joekes

A. M., *Regional renal hypothermia*. Brit. J. Urol., 1971;39: 727.

25. Petersen H. K., B. Broch Møller, Iversen H. G., *Regional hypothermia in renal surgery for severe lithiasis*. Scand. J. Urol. Nephrol., 1977; 11: 27-34.

26. Крендель Б.М., Джафарова М.А., Макарова Т.Н., *Сборник научных трудов*. М., 1991: 138–140.

27. Яненко Э.К. et al., *Оперативное лечение коралловидного нефролитиаза*. Урология и нефрология, 2004; 3: 8–12.

28. Nicholas D. Melissourgos, Elias N. Davilas, Aristodimos Fragoulis, Evangelos Kiminas Antonios Farmakis, *Modified Anatomic Nephrolithotomy for Complete Staghorn Calculus Disease*. Scand. J. Urol. Nephrol., 2002; 36: 426–430.

Rezumat

Implementarea în urologice a metodelor de tratament miniinviziv al litiazei urinare, așa ca nefrolitotomie percutanată (NLP), litotriția extracorporeală cu unde de șoc (ESWL), a schimbat tactica de tratament al pacienților litiazici și a micșorat rata intervențiilor chirurgicale deschise.

Chiar și în aceste condiții tratamentul chirurgical deschis prin nefrolitotomie este foarte eficient în managementul pacienților cu litiază renală coraliformă. Tehnicile chirurgicale cu hemoragie și traumatism minim, dar în același timp radicale, cu înlăturarea completă a masei calculoase sunt direcția de bază în tratamentul litiazei coraliforme. La respectarea indicațiilor și selectarea corectă a pacienților, tratamentul de elecție al litiazei renale coraliforme rămâne nefrolitotomia deschisă.

Summary

Implementation in urological practice of mini invasive methods of treatment, such as percutaneous nephrolithotomy (NLP), extracorporeal shock wave lithotripsy (ESWL) have changed tactics in surgical treatment of urolithiasis. This aspect has contributed to considerable reduction in frequency of open surgical techniques.

Even under these conditions open surgery by nephrolithotomy remains very effective in the management of patients with staghorn lithiasis. Surgical techniques with minimal trauma and bleeding, but also radically effective for removing stones, are the basic direction of staghorn lithiasis treatment. Getting the indications and proper patient selection, nephrolithotomy cause results to be optimal for patients with severe forms of nephrolithiasis.

Резюме

Введение в урологическую практику миниинвазивных методов лечения, таких как чрескожная нефролитотомия, дистанционная ударноволновая литотрипсия, радикально поменяло тактику в хирургическом лечении уrolитиаза. Это проявляется значительным уменьшением числа открытых операций.

Но даже на современном этапе открытая нефролитотомия остается очень эффективной в лечении пациентов с коралловидным нефролитиазом. Хирургические методы с минимальным травматизмом и кровопотерей, а также радикальное удаление камней, являются

основным направлением в лечении кораллоидного нефролитиаза. При соблюдении показаний и правильном отборе пациентов, нефролитотомия является оптимальным выбором для пациентов со сложными формами нефролитиаза.

MICROALBUMINURIA ŞI PROTEINURIA ÎN EVALUAREA PACIENŢILOR CU DIABET ZAHARAT COMPLICAT CU PIELONEFRITĂ ACUTĂ

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Introducere

Microalbuminuria este un indicator timpuriu al malfuncţiei renale la pacienţii cu diabet zaharat şi permite diagnosticarea, precum şi stadializarea iniţială a nefropatiei diabetice [2]. Proteinuria se consideră a fi un marker mai puţin specific al disfuncţiei renale, fiind în schimb un mijloc de diagnostic util nu numai la bolnavii diabetici, ci şi la cei cu alte nefropatii glomerulare [4]. Luând în consideraţie faptul că ambii parametri reflectă prezenţa şi gravitatea disfuncţiei endoteliale, teoretic poate exista o legătură între riscul sporit de supurare a focarelor de invazie infecţioasă, procesul septic general şi nivelul microalbuminuriei şi/sau proteinuriei [3]. De asemenea, există un număr de lucrări care au evaluat legătura dintre prezenţa şi severitatea proteinuriei şi rezultatele examenului bacteriologic al urinei [1, 5].

Scopul acestui studiu este precizarea corelaţiilor, precum şi a valorilor predictive ale microalbuminuriei şi proteinuriei la pacienţii cu diabet zaharat complicat cu pielonefrită acută.

Material şi metode

Lotul examinat a inclus 90 de pacienţi cu diabet zaharat complicat cu pielonefrită acută: 27 au suferit de diabet zaharat de tip 1, iar 63 de pacienţi – de diabet zaharat de tip 2. Vârsta medie a pacienţilor a fost $50,49 \pm 1,79$ ani, cu variaţii de la 19 până la 81 de ani.

Diabetul zaharat a fost primar depistat la 11 (12,2%) bolnavi, a fost diagnosticat cu 1-5 ani în urmă la 25 (27,78%) pacienţi, cu 6-10 ani în urmă – la 20 (22,2%) cu, 11-15 ani în urmă – la 23 (25,56%) pacienţi, cu 16-20 de ani în urmă – la 9 (10%) şi mai mult de 20 de ani în urmă – la 2 (2,22%) bolnavi. Complicaţii locale purulente am depistat în total la 26 (28,9%) pacienţi, iar urosepsis – la 18 (20%).

Suplimentar la studiul personal prospectiv, am cercetat baza de date „PubMed”, utilizând formula (proteinuria or microalbuminuria) „AND pyelonephritis AND diabetes”. În urma acestei căutări, am depistat 58 de articole, dintre care 9 au întrunit criterii de relevanţă. Studiul statistic a fost făcut cu ajutorul programului „Statistica 7”.

În această lucrare ştiinţifică am utilizat metodele statisticii de bază pentru evaluarea generală a parametrilor studiaţi, metoda Spearman – pentru determinarea corelaţiilor simple, metoda Wald-Wolfowitz – pentru evaluarea grupurilor de pacienţi şi data mining / classification tree – având drept scop precizarea valorii predictive a unor din parametri evaluaţi. Valorile „p” sub 0,05 au fost considerate statistic veridice.

Rezultate şi discuţii

Proteinuria a fost apreciată la 72 de pacienţi investigaţi, fiind înregistrate valori medii de $0,42 \pm 0,09$ g/l, variaţiile de la 0,01 g/l până la 3,7 g/l, median a fost egală cu 0,18 g/l. Microalbuminuria a fost determinată la 30 de bolnavi. Acest lot de pacienţi a fost omogen cu totalitatea pacienţilor evaluaţi şi astfel rezultatele depistate pot fi generalizate pentru toţi bolnavii cu diabet zaharat, înrolaţi în studiu. Microalbuminuria a fost în medie egală cu $28,99 \pm 4,52$ mg/l, cu oscilaţii de la 1 mg/l până la 100 mg/l şi valorile medii egale cu 20,45 mg/l.

Pielonefrita apstematoasă a fost diagnosticată la 12 din 72 de pacienţi cu diabet zaharat şi proteinurie determinată. La pacienţii cu această complicaţie a fost înregistrat un nivel sporit de proteinurie ($0,51 \pm 0,21$ g/l), în comparaţie cu cei fără pielonefrită apstematoasă ($0,40 \pm 0,09$ g/l). Carbuncului renal a fost determinat la 9 din 72 de pacienţi, valoarea medie a proteinuriei la bolnavii cu prezenţa acestei complicaţii purulente locale al pielonefritei acute a fost egală cu $0,57 \pm 0,38$ g/l, iar în lotul pacienţilor fără această complicaţie – cu $0,40 \pm 0,09$ g/l. Abcesul renal a fost prezent la 10 din 72 de pacienţi cu proteinurie evaluată, iar nivelul proteinuriei a fost de asemenea semnificativ mai mare la bolnavii cu această complicaţie: $0,53 \pm 0,28$ g/l versus $0,40 \pm 0,09$ g/l.

Formarea unui grup comun de pacienţi cu complicaţii purulente locale ne permite aprecierea comparativă a rezultatelor anterior obţinute. Din 72 de pacienţi cu proteinurie determinată, la 22 au fost prezente complicaţiile locale purulente (la un pacient ar putea fi diagnosticate simultan mai mult de o complicaţie locală purulentă). Nivelul de proteinurie la aceşti bolnavi a fost semnificativ mai mare: $0,51 \pm 0,16$ g/l în comparaţie cu $0,35 \pm 0,09$ g/l ($p < 0,05$). Nivelul microalbuminuriei nu a fost statistic diferit între aceste grupuri: $25,42 \pm 8,86$ mg/l versus $29,54 \pm 5,08$ mg/l ($p > 0,05$). Referitor la pacienţii cu urosepsis, nu am determinat diferenţe statistic veridice în funcţie de nivelul microalbuminuriei ($32,87 \pm 8,92$ mg/l versus $28,56 \pm 4,95$ mg/l ($p > 0,05$)) sau proteinuriei ($0,45 \pm 0,24$ g/l versus $0,41 \pm 0,09$ g/l; $p > 0,05$).