

## THE METHOD OF TREATMENT OF URETEROLITHIASIS BY THE METHOD OF CONTACT LITHOTRIPSY

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### ✓ Resume

*During contact lithotripsy, 35 patients in 24 (68.6%) patients, taking into account the combination of ureteral stones with large or multiple small kidney stones, long-term presence of a stone in the lumen of the ureter, migration of fragments of urate stones during contact ureterolithotripsy into the calyx-pelvic system kidney, surgery was completed with the installation of an internal stent. The undoubted advantage of contact lithotripsy is the possibility of establishing a final diagnosis during the operation (if the nature of the ureteral obstruction is unclear), as well as the possibility of installing an internal stent for more effective litholytic therapy (in the presence of stones in the contralateral kidney) and anti-inflammatory therapy (in the presence of inflammatory changes in the place standing stone).*

*Keywords: urolithiasis, ureterolithiasis, contact lithotripsy, stent, contralateral kidney, litholytic therapy.*

## СПОСОБ ЛЕЧЕНИЯ УРЕТЕРОЛИТИАЗА МЕТОДОМ КОНТАКТНОЙ ЛИТОТРИПСИИ

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### ✓ Резюме

*При контактной литотрипсии 35 пациентов из 24 (68,6%) пациентов с учетом сочетания камней мочеточника с большими или множественными мелкими камнями в почках, длительного наличия камня в просвете мочеточника, миграции фрагментов уратных камней. При контактной уретеролитотрипсии в чашечно-лоханочную систему почки операция завершилась установкой внутреннего стента.*

*Несомненным преимуществом контактной литотрипсии является возможность установления окончательного диагноза во время операции (если характер обструкции мочеточника не выяснен), а также возможность установки внутреннего стента для более эффективной литолитической терапии (при наличии камней в контралатеральной почке) и противовоспалительная терапия (при наличии воспалительных изменений на месте стоящего камня).*

*Ключевые слова: мочекаменная болезнь, уретеролитиаз, контактная литотрипсия, стент, контралатеральная почка, литолитическая терапия.*

## URETEROLITIAZISNI KONTAKT LITOTRIPSIYASI USULI BILAN DAVOLASH USULI

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*Kontakt litotripsiya paytida, ureteral toshlarning katta yoki ko'p miqdordagi mayda buyrak toshlari bilan birikishini, siydik chiqarish yo'lida uzoq vaqt tosh borligini, urat toshlari parchalarining migratsiyasini hisobga olgan holda, 24 ta bemorda (68,6%) 35 bemor. buyrakning kalik-tos suyagi tizimiga ureterolitotripsi bilan aloqa qilish paytida operatsiya ichki stent o'rnatilishi bilan yakunlandi. Kontakt litotripsiyaning shubhasiz afzalligi - operatsiya davomida yakuniy tashxis qo'yish (agar siydik chiqarish yo'llarining obstruktsiyasi xususiyati noaniq bo'lsa), shuningdek litolitik terapiyani yanada samaraliroq qilish uchun ichki stent o'rnatish imkoniyati (toshlar mavjud bo'lganda). qarama-qarshi buyrakda) va yallig'lanishga qarshi terapiya (joyda turgan toshda yallig'lanish o'zgarishi mavjud bo'lganda).*

*Kalit so'zlar: urolitiyoz, ureterolitiyaz, kontakt litotripsi, stent, qarama-qarshi buyrak, litolitik terapiya.*

## Introduction

Modern medicine has a whole arsenal of conservative, operative and combined methods of treatment of urate urolithiasis [2, 3, 4, 7, 14, 16]. Selection method for treating a multifactorial and determined by the number of stones, the localization of stones, their size and shape, the terms disease, presence const utstvuyusch s urinary tract infections, functional sposobnos tew kidneys, presence of concomitant their diseases, general condition of the patient, the anatomy of the upper urinary tract and other features of the [1, 8, 9, 10, 11, 12]. The increase in the incidence of urate urolithiasis is explained by the increased influence of a number of unfavorable external environmental en viron mental factors on the human body: physical inactivity leading to impaired phosphorus-calcium metabolism, increased consumption of protein products and alcohol, the use of certain drugs [2, 5, 6, 7].

In the structure of urolithiasis, an increase in the incidence rate of urate urolithiasis has been noted in recent years. If in the 50s of the 20th century it ranged from 5 to 10%, now the number of patients with urate urolithiasis is up to 20% of the total number of patients with urolithiasis [1, 2, 3, 4,

6]. It is important to note that it is possible to carry out treatment for both emergency and planned indications [5, 6, 13, 15, 17].

**Purpose of the study:** to identify the features of the treatment of ureterolithiasis in contact lithotripsy.

## Material and methods

This group consisted of 35 patients who underwent contact ureterolithotripsy of ureteral stones. Of 35 patients, 24 (68.6%) were men and 11 (31.4%) women. The age of the patients ranged from 28 to 75 years. In 13 (37.1%) patients, left-sided urolithiasis was detected; right-sided urolithiasis was detected in 11 (31.4%) patients, bilateral urolithiasis in 11 (31.4%) patients.

## Result and discussion

During the examination, in 15 (42.8%) patients, urate stones were localized in the upper third of the ureter, in 9 (25.7%) in the middle third of the ureter, and in 11 (31.4%) in the lower third of the ureter. The size of the analyzed ureteral stones varied from 7 to 20 mm. The distribution of patients by stone size depending on localization in different parts of the ureter is shown in Table 1.

Table 1

Distribution of patients by stone size depending on localization

The size of stone	Up to 1.5 cm	1.1-1.5 cm	More than 1.5 cm
Localization of stone			
upper third of the ureter	4	8	3
middle third of the ureter	1	7	1
lower third of the ureter	3	8	0
<b>Total</b>	<b>8</b>	<b>23</b>	<b>4</b>

The table shows that in the bulk of patients - 23 (65.7%), the sizes of ureteral stones ranged from 1.0 to 1.5 cm. In 7 (20.0%) patients, ureteral stones were combined with stones in the collecting system kidney, 3 (8.6%) had a combination of calculi and calculi with stones in the calyx - pelvic system of the contralateral kidney. The combination of ureteral stones with single

or multiple stones of both kidneys was observed in 10 (28.6%) patients, and 15 (42.8%) patients had single ureteral stones.

20 patients had previously undergone various methods of surgical interventions - data on them are given in Table 2. Table 2 shows that 15 patients in anamnesis denied the presence of various methods of surgical intervention.

Table 2.

Previously transferred surgical interventions

The nature of the operations performed	Number of patients	
	Absolute	%
Endoscopic operations	10	28,5
DLT	4	11,4
Open surgical interventions	6	17,1
Lack of urological surgeries	15	42,8
<b>Total</b>	<b>35</b>	<b>100</b>

Recurrence of the disease was noted in 24 (68.6%) patients, 11 (31.4%) patients had stones for the first time. 21 (60.0%) patients had previously received litholytic therapy, 14 (40.0%)

patients had a history of spontaneous stone passage. Table 3 shows the distribution of patients according to the duration of the disease with urate urolithiasis.

Table 3.

#### Distribution of patients by the duration of the disease with uratelithiasis

Duration of the disease, in years	Number of patients	
	absolute	%
less than a year	11	31.4
From 1 to 5 year	14	40.0
From 6 to 10 year	5	14.3
More than 10 year	5	24.3
<b>Total</b>	<b>35</b>	<b>100</b>

28 (80.0%) patients were admitted to the clinic on an emergency basis, 7 (20.0%) patients were admitted as planned, during outpatient examination they revealed ureteral stones. 16 (57.1%) patients admitted on an emergency basis, and 1 (14.3%) patient admitted routinely due to renal colic, as well as an incipient pyelonephritis attack, underwent kidney

drainage by applying percutaneous puncture nephrostomy.

Upon receipt of urine in the sediment, uric acid salts were detected in 28 (80.0%) patients, and in 7 (20.0%) patients, no salts were detected in the urine sediment. The distribution of patients by urine acidity is shown in Table 4.

Table 4.

#### Distribution of patients by urine acidity on admission

Urine acidity	Number of patients	
	absolute	%
5.0-5.5	18	51.4
5.6-6.0	14	40.0
More than 6.0	3	8.6
<b>Total</b>	<b>35</b>	<b>100</b>

Table 3 shows that in 32 (91.4%) patients the urine reaction was acidic, and only in 3 (8.6%) patients the urine reaction was neutral. A bacteriological study of urine was performed in 24 (68.6%) patients, of which in 17 (70.8%) patients, urine obtained by nephrostomy drainage served as the material for the study, in 7 (29.2%) patients with spontaneous urination.

According to the bacteriological examination of urine, *Pseudomonas aer* was detected in four (16.7%) patients, Two (8.3%) patients revealed *Escherichia coli*, one (4.2%) patients revealed *Staphylococcus spp*, In 17 (70.8%) patients in the urine culture growth of bacteria have been identified.

All patients with bacteriuria received appropriate therapy according to the antibiogram.

Contact ureterolithotripsy was performed in planned patients, as well as in emergency patients after stopping the attack of pyelonephritis. It should be noted that this type of surgical intervention was used for technical (impossibility of removing the stone into the focus of the shock wave) and anatomical contraindications (overweight of the patient - more than 100 kg) to remote ureterolithotripsy, as well as for additional diagnostic purposes. All patients underwent surgery satisfactorily. At the same time, in 24 (68.6%) patients, given the combination of ureteral stones with large or multiple small kidney stones, long-term presence of a stone in the lumen of the ureter, migration of urate stone fragments during contact ureterolithotripsy into the calyx-pelvic system of the kidney, surgery was finished with the installation of an internal stent.

In 4 (11.4%) patients with stones in the upper third of the ureter and in 2 (5.7%) patients with stones in the middle third of the ureter during contact ureterolithotripsy, the bulk of large fragments of urate stones migrated into the collecting system of the kidney, and therefore he underwent distance lithotripsy in the postoperative period.

A total of 35 patients underwent 35 contact ureterolithotripsy, and 6 patients in the postoperative period underwent remote lithotripsy of calculus fragments migrated during

contact ureterolithotripsy into the collecting system of the kidney.

It should be added that in all 17 (100.0%) patients who underwent percutaneous puncture nephrostomy to arrest the attack of pyelonephritis, after contact ureterolithotripsy, the nephrostomy drainage was removed in the immediate postoperative period.

The period of stay of patients in the clinic was  $17.5 \pm 1.53$  days ( $p < 0.05$ ). The spectral composition of the removed stone fragments was studied in 28 (75.0%) patients, the data are shown in Table 5.

Table 5.

**The chemical composition of stones in patients after contact ureterolithotripsy**

Chemical composition of stones	Number of patients	
	Absolute	%
Anhydrous uric acid	13	46,4%
Uric acid dihydrate	4	14,3%
Ammonium urate	5	17,9%
Mixed composition of stones	6	21,4%
Total	28	100

Of six (21.4%) patients with a mixed composition of stones, in four cases there was a combination of anhydrous uric acid and ammonium urate, and in two cases, a combination of anhydrous uric acid and uric acid dihydrate.

In the postoperative period, out of 24 patients in whom contact ureterolithotripsy ended with the installation of an internal stent catheter, 4 (16.7%) had a clinical manifestation of reflux into the kidney, another 2 (8.3%) patients had dysuria, these complications in all patients docked conservatively.

### Conclusion

1. By ontaknaya ureterolithotripsy is the method of choice for the treatment of ureteral uric acid stones if you can not conduct remote ureterolithotripsy.
2. The undoubted advantage pin, lithotripsy is a possibility of installing in the operation of the final diagnosis (when unclear nature ureteral obstruction), and the ability to install an internal stent for better holding litholytic therapy (in the presence of stones in a counter lateral bud) and antiinflammatory FDI (in the presence of inflammatory changes in the place where the stone stands).

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