

ODESSA NATIONALNIY MEDICAL UNIVERSITY

Department of Urology and Nephrology

METHODICAL WORKING of practical training for teachers

Academic discipline "Urology"

Topic 6. Traumatic injuries of lower urinary tract and male reproductive system. Urogenital fistulae in women.

**Level of higher education:** Second (Master's)

**Knowledge field:** 22 "Health Care"

**Specialty:** 222 "Medicine"

**Program of professional education:** Medicine

Approved  
methodological meeting on the chair  
28. 08. 2023  
Protocol № 1  
Head. Chair prof. F.I. Kostev

Odesa 2023

## **THEME: Traumatic injuries of kidneys and upper urinary tract.- 2 hours.**

### **1. Relevance of the topic.**

In connection with urbanization, and scientific and technological revolution the level of domestic and industrial accidents increased for the causes of injury mortality is the second or third place (alternating with cancer).

Damage to the kidneys often combined with damage to the abdominal cavity or second bodies. Recognition of the damage the kidneys or the question in the presence of associated injuries of second bodies, it is sometimes difficult problem. If the damage the kidney may be irritation of peritoneum, the presence of blunting in the gentle abdomen, limited excursions of the thorax, signs of internal bleeding. Especially difficult diagnosis in cases where the patient is unconscious due to shock or intoxication. Carefully collected history mechanism injury, urine allow the doctor, usually a surgeon to quickly find and invite to consult a urologist, and even better time to perform excretory urography.

In some cases, kidney damage surgeon on the operating table during a laparotomy in a patient with symptoms (or combined), abdominal organ injuries and acute abdomen. In this situation, the absence of urological surgeon must decide what to do and best to do everything necessary.

Damage to the kidneys is often associated with fractures of the ribs. At the turn of the X, XI, XII edges doctor - or a trauma surgeon, pulmonologist should check the state of the kidneys.

Fractures of the pelvis is often combined with extraperitoneal injuries of the bladder and urethra. First aid the patient in such situations often performs trauma, which in the absence of a urologist should be able to perform retrograde urethrography or cystography, perform the operation.

Among the injuries of different organs and tissue damage of the urogenital tract of between 1-3%, while among men this type of injury occurs in 4 times more frequently than in women. Among the injuries of all genitourinary injuries urethra frequency occupies the first place. Taking into account the possibility of disability and complications from kidney and urinary organs of knowledge of the characteristics of damage to the urethra physicians of all specialties is important. Trauma of the external genitalia, among other things, has implications for reproductive and sexual function of men.

Only a partial list of these situations has shown the need to explore the theme of students and physicians in a wide range of professions.

### **2. The objectives of training.**

#### **2.1. Learning Objectives (to the level of assimilation).**

a) **I-level** student should read:

- The level of injury in Ukraine and in the region, the frequency of injuries of the kidneys, urinary tract and male reproductive organs;
- Ways of reducing injury and disability;
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b) **II level**, a student should know:

- Mechanisms of damage of the urogenital tract;
- Classification of damage organs;
- Clinical signs, depending the degree of injury that's organs kidney;
- Diagnose injuries and differential diagnosis of combined injuries urinary organs;
- Conservative and surgical treatment of injuries of the urogenital tract;
- Types of ureteral injuries, their clinical symptoms;
- Diagnosis and treatment of ureteral injury;

- Classification and clinical signs of damage to the bladder;
- Diagnosis, differential diagnosis and treatment of injuries of the bladder.
- Mechanism of injury and their classification in trauma urethra;
- Clinical features and diagnosis of urethral injury;
- Treatment of urethral injuries;
- Stricture urethra: causes, diagnosis and endoscopic techniques, conservative and surgical treatment;
- Mechanisms of injury of the penis, their classification and clinical symptoms;
- Diagnosis and treatment of injuries of the penis;
- Classification and clinical signs of injury scrotum and its organs;
- Diagnosis and treatment of injuries of the scrotum and testes.

c) **III level** - to give students an opportunity to learn skills, techniques for their implementation:

- To learn methods of analysis of patient (history, the feeling of the kidneys in three positions, palpation and percussion of the bladder);
- Be able to recognize the X-ray signs of trauma kidney, ureter, bladder;
- Be able to perform retrograde cystography and urethrography;
- To plan the survey, the scheme of conservative therapy and substantiate the need and extent of surgical treatment of patients with trauma kidney, urinary bladder.

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d) **IV level** - Creative, which includes search, discovery research students way of doing things, new know (for the most able students, for members of the Students' Scientific Society)

#### **Topics abstracts:**

1. Iatrogenic injury of the kidneys, ureter, bladder and urethra.
2. Features of damage ureter and urinary bladder in obstetrical and gynecological practice. Urinary fistula ureter, bladder;
3. Features of clinical signs of kidney damage, bladder and urethra in children;
4. Make an analysis of trauma patients that were treated at the urological clinic for 5 years;
5. Examine the effectiveness of the use of complex conservative therapy of renal trauma antioxidants, enzymes, ozone, etc.

#### **2.2. Educational goals.**

- During the sessions to develop the idea of depending on the fate of the patient (slowness of treatment, the reliability of disability or even death) that's knowledge of clinical signs and the ability to take urgent measures in trauma urinary organs;
- To form the imagination of the need for the ability to conduct and evaluate the X-ray examination of patients with suspected damage to the urinary organs;
- The contributions made by local military physicians during World War II in the diagnosis and treatment of genitourinary trauma. The role of the domestic medical science in the development of clinical examination and rehabilitation of patients after trauma.
- In the audience to develop the idea that during a natural disaster, industrial accidents and disasters and military operations increases the frequency of traumatic injuries of genito-urinary organs, and therefore knowledge of their diagnosis and treatment are required of all doctors and their patriotic duty.

### 3. Interdisciplinary integration.

Number of pores	Business Communication	Know	Know
<b>1. Previous discipline</b>			
	a) anatomy b) The regional anatomy with operative surgery	3.1.1. bud: shape, structure, topography retroperitoneum and relationships with neighboring organs; 3.1.2. The anatomy and topography of the ureter, especially in the pelvic part of the topography; 3.1.3. bladder: anatomy, especially topographic correlation with abdominal and pelvic organs. 3.1.4. Urethra: The Anatomy of particular topographical correlation with abdominal and pelvic	3.1.2.1.drenirovanie pelvic tissue by the method Buyalsky - Mac-Warter 3.1.2.2.Novokain blockade Shkolnikov 3.1.2.3. The regional anatomy urethra (the structure, circulation and innervation), scrotum, testes and the appendages, the penis. 3.1.2.4. Technology surgery on the urethra and external genitalia. c) propaedeutics internal diseases
	c) propaedeutics internal medicine	3.2.1. clinical symptoms (complaints and physical examination), laboratory signs of disease and damage kidneys and bladder	. Palpate the urethra, scrotum and its organs
<b>2.Follow discipline</b>			
	a) Surgery	3.3. radiological signs of damage to the urethra. 3.4. Indications for surgical treatment of scrotal organs when damaged.;	3.3.1. perform excretory urography or infusion 3.3.2. able to perform bladder catheterization for retrograde cystography. 3.3.3. perform retrograde urethrogram; 3.3.4. perform an operation audit, drainage of hematoma

			of the scrotum and the operation on the testicles.
	b) Traumatology	Same as a surgeon	Same as a surgeon 3.4.1. able to perform troakarnuyu puncture the bladder
	c) Obstetrics and Gynecology,	too, as a surgeon.	Same as surgery and trauma; 3.5.1. able to test Zeldovich suspected damage to the urinary bladder in obstetrical and gynecological operations

#### **4. Content classes: structural and logical scheme of the content.**

Basics classes	Characterization
<b>I. kidney damage</b>	
4.1.1. Classification	4.1.1. closed, open; 4.1.2. isolated; combined (60 %!!); 4.1.3. industrial, household, sports, iatrogenic
4.1.2. mechanism of injuries	Direct hit - most often, falling to his feet - a bud tipped to 12 ° rib, with pathological changes - hydronephrosis, tumors, the role of hydrodynamic impact - may damage the contralateral; Iatrogenic: retrograde pyelography, lumbar Novocain, needle biopsy, percutaneous nephrostomy, extracorporeal lithotripsy
4.1.3. classification of closed renal injuries	6 groups according to behold the vastness of traumatic injuries. Lightweight - without breaking the pelvis and cup: I - contusion; II - the gap parenchyma without breaking the capsule; III - the gap parenchyma and capsule. Heavy: IV - urogematoma - the gap CHLS, parenchyma and capsule; V - crushing the kidney (options: no damage to the capsule without damage CHLS); VI - separation of the vascular legs
4.1.4. clinic	Common signs: pain, hematuria, swelling. Pain 80-95%. Shock and anemia without gross hematuria V-VI century.; In the early period with hematuria - a sign of combined injury. Shock is sometimes combined with Article IV injury of the liver, spleen.
4.1.5. Diagnosis	Medical history: the direction and force of impact. Inspection: hemorrhages, bruises, local

	<p>tenderness, macro-or microhematuria, urogeatoma; symptoms of anemia.</p> <p>Ties - centers violations kidney structure and condition of perirenal fat. X-ray methods:</p> <p>a) Review: bones, muscles, gas, and b) i / v with AD more than 80 mm Hg. Art. better infusion c) retrograde (In the absence of ties), d) computed tomography. Radiographic symptoms: weakness, later filling CHLS; vnechashechnoe and extrarenal leaking contrast, the deformation of the cups and tubs.</p>
4.1.6. differential diagnosis	<p>combined injury (liver, mesentery and its blood vessels, intestines, spleen): early shock, early peritonitis, sometimes heavy. Laparoscopy, "sharyachy catheter. Laparotomy, especially V-VI gr., Condition monitoring of the second kidney (anomaly!)</p>
	<p>Light trauma I-III gr. - Conservative treatment: bed rest 8-14-20 days, analgesics, haemostatics, antibacterial, antioxidant, metaboliki. Indications for operation: a) massive gross hematuria, and b) urogeatoma c) shock, anemia, and d) combined injury; d) infected urogeatoma.</p> <p>Types of operations: 1) cross-linking, nephrostomy, hemostasis muscles, fiber, and 2) resection, nephrostomy, and 3) nephrectomy and 4) in combined injury - laparotomy, and then intervention in the kidney.</p>
4.1.8. Early complications:	<p>hematuria, suppuration, urogeatoma; biphasic gap kidney; secondary or late hematuria, after 1-2 weeks of acute pyelonephritis.</p> <p>Later: hydronephrosis, chronic pyelonephritis, sklerozuyuchy paranephric, hypertension, kidney stones.</p>
<b>II. Damage to the ureters</b>	
4.2.1. Classification	<p>Closed: a) hurt and b) an incomplete rupture or crushing wall of the ureter; c) a complete rupture, and d) separation of the ureter;</p> <p>Open: a) non-penetrating (only the muscular layer and mucosa of a whole), b) incomplete or parietal (muscle and mucosa), c) complete with divergent ends.</p> <p>Iatrogenic: banding, dispersal, separation here of the bladder or kidneys, removing the</p>

	segment, crushing
4.2.2. Clinic	The most common clinical signs of a combination of injuries of the abdominal cavity Symptoms of urinary infiltration: a pain in the lumbar region, fever, manifestations of intoxication, muscle tension, irritation parietal peritoneum, pasty with rectal or vaginal examination, swelling of the labia or scrotum. In open injuries, if not recognized in the 6-12 day observed urinary fistula.
4.2.3. Diagnosis	Excretory (infusion), often retrograde ureteropielografiya: formless uroplania, his level. Fistulography with fistulas. When anuria catheterization two ureters. Intraoperative: anatomic selection over.
4.2.4. Treatment	Goal: a) emptying uroplania, b) restoration of continuity. Conservative: contusion, laceration of the wall. During the operation: lateral damage - impose a 2-3 suture., A complete break obliquely U - shaped and additional nodes impose a primary suture. When infiltration in 2 stages: nephrostomy or ureterostomy and drains, and after 6-10 weeks, plastic or reconstructive surgery. When violations of the pelvic region - ureteroneocystostomy, and when the defect of the ureter plastic Boario or Demel or replacement segment of bowel, kidney autotransplantation
<b>III. Damage to the bladder</b>	
4.3.1. classification	of closed and open, isolated and combined, intraperitoneal and extraperitoneal
4.3.2/ the mechanism	The nature of the mechanism of injuries and conditions. Important force of hydrostatic pressure, with a value of surprise, speed of impact force. Inside iatrogenic: bougie, cystoscope, a metal catheter. Fracture of the pelvic bones - fragments.
4.3.3. Clinic	extraperitoneal: gross hematuria, urination disorders - not real urgency, tenesmus. Pain in the suprapubic region, dullness at percussion. Possible urinary retention. Intraperitoneal: an early symptom of pain in the pubic, and then across the abdomen. Quickly phenomenon peritonitis. Lack of

	urination, and when tamponade bubble-wall defect persists. When combined with the trauma of the pelvic bones, pallor, tachycardia, blood pressure reduction, accession infections - abscess, urosepsis
4.3.4. diagnostik	catheterization: extraperitoneal - no urine, or a weak stream, intraperitoneal urine with blood, often a lot of liquid up to 10% of the protein from the abdominal cavity. Sample Zeldovich. Retrograde tsistogramma: nonpenetrating or extraperitoneal, the fracture, the location of streaks. If a catheter into the bladder can not, you need to perform a downward tsistogrammu with excretory (infusion) urography. Differential diagnosis of abdominal organ injuries on hematuria, micturition disorder, and cystography.
4.3.5. treatment	A full of intraperitoneal rupture of an immediate operation:: audit, stapling, 3-way urethral catheter Tola, when urechysis - epitsistostoma. In extraperitoneal - extraperitoneal selection and stapling, 2 drainage during early operations and infiltration drainage through the obturator hole for Buyalskomu. When isolated bladder neck that's urethra to urethra, hold the catheter with a balloon that presses against the neck to the urethra
<b>Damage to the urethra</b>	
4.4.1.Mehanizm injuries	fracture of the pelvis - at the expense of fixing ties to the symphysis or fragments of bones (46-52%). The attack on the perineum. Birth injury, bougie, cystoscope
4.4.2.Klassifikation	Closed, open. Complete and incomplete. Posterior perineal trauma and the anterior urethra (often open).
4.4.3.Klinika	urethrorrhagia, pain when urinating, and sometimes urinary retention, hematoma of the perineum (urogematoma). Clinical manifestations depend on the nature here, the localization of lesions and intensity of urinary infiltration, up to phlegmon and urosepsis
4.4.4.Diagnoses	History and examination: the mechanism of injury, urethrorrhagia, violation of urination, hematoma. The main method of detecting location and extent of injuries - retrograde urography 10-30 ml of 30% solution of contrast medium



4.4.5 .. Treatment	Incomplete - conservatively, with retention of urine - troakarnaya epitsistostomiya. Primary suture to 6 hours. At the turn of the pelvic bones - are being withdrawn from the shock, epitsistostomiya (see injury of the bladder). In late hospitalization - epitsistostomiya, drainage streaks. When trauma urethra and rectum - suprapubic fistula and sigmoidostomy.
4.4.6.Striktura of urethra	Causes of the channel. Diagnosis: urethrography, bougie, ureteroscopy. Endoscopic and surgical treatment (methods Holtsova, Solovov, Rusakov). Bougienage
<b>Damage to the penis</b>	
4.5.1.Mehanizm and classification	isolated and combined, closed and open. Thermal: - burns, frostbite. Closed: contusion, fracture, sprain. Open: tear-bruises, stab-incised, gunshot
4.5.2.Klinika	Bruising: massive bruising, difficulty urinating, or total delay. Fracture: heavy damage, the sharp pain during erection, which is immediately terminated, and a member of the rapidly growing, it becomes cyanotic, curved. It may be damaged and the urethra - urethrorrhagia, urine retention, uroplania. Dislocation: displacement of the root member under the skin of the pubic area, perineum, scrotum, or thigh. Marginalized by his dressing, putting on things.
4.5.3.Diagnostika and treatment	Diagnosis and treatment stems from the history and clinical Bruising: the first few days cold compresses, bed rest, antibiotics, with 3-4 day - warm baths, absorbable funds. When you break cavernosa operation-allocation and suturing tunica albuginea defect. Dislocation: denudation of the root of the penis, stop bleeding, reduction of the root, suturing on the broken connection. In open injuries debridement, suturing, stop bleeding (flashing main vessels). When amputation eventually falloplastika (Bogoraz-Mayat, Shap Godvun).

<b>Damage to the scrotum and its organs</b>	
4.6.1.Mehanizm and classification	Private and public: tear-bruised, chopped, sliced and gunshot and combined. Damage in connection: with contusion, fall, bike riding or horseback riding, motor combined injury.
4.6.2.Klinika and diagnosis	hemorrhage with an increase in the scrotum, bruising may extend to the penis, perineum, thighs, anterior abdominal wall, even a minor injury testis is characterized by acute pain, often a shock. Gradually the picture orhoepididimita. The boys are often inverted testis, epididymis or testis gidatidy (swelling and redness). Diagnosis by examination, ehoskanirovanie.
4.6.3. treatment	In mild trauma: bed rest, tight swimming trunks cold compresses, Novocain, a week later thermal procedure. In severe trauma: the struggle with shock, as "under suspicion of subcutaneous rupture Egg - immediate surgery. All sharp processes in the organs of the scrotum and injuries are an indication for surgery "(O. Vozianov, VO Lyul'ko) volume depends on the extent and nature of the injury. Remove non-viable parenchyma, testing only at crushing or separation. Autoantitila and imunodepresanti. When isolated scrotal testes temporarily placed under the skin of the thighs or suprapubic region.

### **. 5. PLAN AND ORGANIZATION OF CLASSES**

Number number	Serial Milestones classes, their functions and content of training	goals and levels of assimilation	of the training and testing	of materials and methodical providing	Term (In minutes or%) of the total time
1	2	3	4	5	6
<b>1. Preparatory stage</b>					
1.1.	Organization classes				1-3 min
1.2	Setting educational goals and motivation Sm.p.2. Learning Objectives			Sm.p.1. Topical issue	
1.3	Control of the				

	initial level of knowledge				
1.3.1.	The mechanism of injury urogenital	I or II level of individual oral questioning	(See question 6.1.)	1. question for oral questioning 2. 5 tasks for competent solutions 3. Table 4. roentgenograms 5. visit the office ultrasound cistoskopy room	10-20% (□ 5%)
1.3.2.	Hospital trauma of urogenital system,	II or III level written theoretical problem	solving level II (See task 6.2.)		
1.3.3.	Diagnosis and differential diagnosis	lesions of the urogenital tract II or III level			
1.3.4.	Treatment, complications, injuries of the urogenital tract	II or III level			
1.3.5	Classification, mechanism and clinical damage the ureter.	. II or III level			
1.3.6	. Diagnosis and treatment of ureteral injuries	II or III level			
1.3.7.	The mechanism of injury and classification of bladder injuries	I or II level			
1.3.8.	Clinic and diagnosis of bladder injuries	II or III level			
1.3.9	Treatment of injuries of the bladder and urethra	II or III level			
2.	Main stage				
1	2	3	4	5	6
2.1.	Master the skills rengendiagnostiki	Level III	Practical Training	A set of X-ray	60-70%

2.2.	Master the technique of closure cord, palpation of the kidney		Demonstration of patient	Algorithm mastering technique of palpation of the kidneys	
2.3.	To outline scheme of examination of the patient, the diagnosis		Practical training	medical history, textual situational tasks (See 6.3.)	
2.4.	Conduct Curatio patient		Practical Training	Algorithm Curatio (See 6.2.)	
<b>3/.Final stage</b>					
3.1.1	Send radiological diagnosis	III level	3.1. individual control of the results of the study student radiographs	. X-rays	10-15%
3.1.2.	Decision atypical situational tasks		3.1. individual control of	Atypical situational tasks (See 6.3.)	
3.2.	Summarizing lessons				
3.3.	Homework: educational literature on the topic, the basic and additional (see8)			Approximate map of independent work with the literature (see 6.4.)	

## 6. **MATERIALS Technique for tutoring.**

### **6.1.1. Question for the preparatory phase of training** (control source of knowledge):

1. Classification and mechanism of kidney damage.
2. Clinical symptomatology and diagnosis of kidney damage.
3. Value rentenologicheskogo Survey (infuziynaya, retrograde urography, komyuternaya tomography) in diagnosis and differential diagnosis of renal injury.
4. Indications for conservative and surgical methods of treatment of injuries of the kidneys.
5. Early and late complications of kidney damage.
6. Mechanisms and classification of damage to the ureters.
7. Clinic and Diagnostics damage the ureters.
8. Treatment of ureteral injuries.
9. Mechanisms of injury and classification of bladder injuries.

10. Symptoms, diagnosis and differential diagnosis of lesions of the bladder.  
Treatment of injuries of the bladder.
11. The mechanism of injury and their classification in trauma urethra.
12. Clinical features and diagnosis of damage to the urethra.
13. Treatment of urethral injuries.
14. Urethral stricture: causes, diagnosis and endoscopic techniques, conservative and surgical treatment;
15. Mechanisms of damage to the penis, their classification and clinical symptoms.
16. Diagnosis and treatment of injuries of the penis.
17. Classification and clinical signs of damage to the scrotum and its organs.
- 18 / Diagnosis and treatment of injuries of the scrotum and testes.

### **6.1.2. Tests of control baseline level of knowledge (tickets 1-10)**

#### **Option 1**

Injuries to the kidneys, urinary tract and organs of the scrotum.

Select one or more correct answers

1. In the receiver urology department asked the patient 25 years old, who, after falling back from the height of blood appeared in the urine. What is the cause of haematuria?
  - a) damage to the bladder;
  - b) damage to the urethra;
  - c) damage to the ureter
  - d) damage to the kidneys;
  - e) damage to the prostate gland.
  
2. Priority actions of the physician in kidney damage and the development of retroperitoneal urogematomy:
  - a) antibiotic therapy;
  - b) Pathogenetic therapy;
  - c) stenting of the ureter
  - d) surgery (lumbotomy, stapling gap kidney);
  - e) symptomatic treatment.
  
3. In the receiver urology department sent the patient Yu, 42 years old, diagnosed with - traumatic rupture of urethra. Enter the main symptom of a complete rupture of urethra:
  - a) back pain;
  - b) urethrorrhagia;
  - c) retention of urine;
  - d) increase in body temperature;
  - e) withhold urine.
  
4. The most important method for diagnosis of closed injuries of the bladder:
  - a) cystoscopy;
  - b) ultrasonography (U.S.);
  - c) trehstakannaya urine sample;
  - d) ureteropielografiya;
  - e) retrograde cystography.
  
5. Damage to the ureter:
  - a) excretory urography;

- b) retrograde ureteropielografiya;
  - c) CT
  - d) Cystography
  - e) neither the one nor the other.
6. Patient 24 years old to consult a surgeon with a complaint of severe pain in the perineum and scrotum, urinary retention, urethrorrhagia. Anamnesis: got injured while riding a motorcycle off-road. Inspection revealed a hematoma in the perineum and scrotum, palpation sharply painful. At rectal examination revealed swelling and tenderness paraprostaticheskoy fiber, blurred contours of the prostate .. Your diagnosis?.
- a) The gap of the bladder
  - b) divide the posterior urethra
  - c) rupture of the anterior urethra
  - d) extraperitoneal rupture of bladder
  - e) tamponade of the bladder
7. Because of a train crash have large numbers of patients with various surgical and therapeutic pathology. You preside over the provision of skilled medical care. In some offices, it might be available?
- a) Department of Abdominal Surgery
  - b) Department of Maxillofacial Surgery
  - c) Therapeutic Division
  - d) intensive care unit
  - e) All the above offices
8. In the department of traumatology entered a man 25 years old with a fractured pelvis (RTA). A few hours later began to complain of the lack of urination in the presence of mind to do it and the pain in the suprapubic area. On examination the patient drew the attention of a crowded bladder, rectal examination when tilted up high "sitting" prostate. What method of examination is required for definitive diagnosis?
- a) intravenous urography
  - b) Ultrasonography of the small pelvis
  - c) X-ray study of the gastrointestinal tract
  - d) retrograde urethrography
  - e) CT scan
9. In the hospital, the parents brought 3year-old boy who had infringed the skin of the penis lock zipper.  
What?
- a) cutting the skin of the penis
  - b) to immediately open the lock zipper
  - c) a pain
  - d) cut below the zipper abuse
  - e) none of the answer is not correct

## Option 2

Injuries to the kidneys, urinary tract and organs of the scrotum.  
Select one or more correct answers.

1. The most accessible and informative method for diagnosis of closed injuries of the bladder:
- a) pelvic arteriography;
  - b) retrograde cystography;
  - c) cystoscopy;

- d) ultrasound of the bladder;
- e) palpation and percussion abdomen.

2. Damage to the urethra:

- a) excretory urography;
- b) retrograde ureteropielografiya;
- c) neither the one nor the other.

3. What is true for personal injury of the bladder?

- a) hematuria;
- b) strangury;
- c) polakiuriya;
- d) oligoanuria;
- e) none of the above.

4. To establish the source of hematuria should be done:

- a) cystoscopy;
- b) analysis of urine;
- c) excretory urography;
- d) prednisolone provocation;
- e) Try these.

5. Kidney Injury:

- a) infiltration of tissues by heart;
- b) urogematoma;
- c) symptoms of irritation of the peritoneum;
- d) edema of the scrotum;
- e) dysuria.

6. Damage to the urethra:

- a) excretory urography;
- b) retrograde ureteropielografiya;
- c) neither the one nor the other.

7. To establish the source of hematuria should be done:

- a) cystoscopy;
- b) analysis of urine;
- c) excretory urography;
- d) prednisolone provocation;
- e) Try these.

8. In the department of traumatology entered a man 25 years old, with a fracture of the pelvis (RTA). A few hours later began to complain of the lack of urination in the presence of mind to do it and the pain in the suprapubic area. On examination the patient drew the attention of a full bladder. Preliminary diagnosis?

- a) gap bladder
- b) rupture of the colon
- c) rupture urethra
- d) acute prostatitis
- e) tamponade of the bladder

9. In the urology department of the receiving patient turned 25 years old, who, after falling back from the height of blood appeared in the urine. What is the cause of haematuria?

- a) damage to the bladder;

- b) damage to the urethra;
- c) damage to the ureter;
- d) damage to the kidneys;
- e) damage to the prostate gland.

### Option 3

Injuries to the kidneys, urinary tract and organs of the scrotum.  
Select one or more correct answers.

.1. Intrapertoneal injury of the bladder:

- a) infiltration in the suprapubic region;
- b) progressive peritonitis;
- c) neither the one nor the other.
- d) both
- e) all the answers wrong

2. Causes of iatrogenic ureteral injuries:

- Extraction of stone extractor Dorma;
- Set the ureteral stent;
- Endoscopic ureterolitotripsy;
- Surgical interventions on the female genital organs;
- Nothing listed.

3. Symptoms of separation kidney:

- a) decrease in arterial blood pressure;
- b) thready pulse;
- c) increasing urogeatoma;
- d) hematuria;
- e) none listed;

tsistogrammoy. 4. Delivered by a patient with suspected kidney injury. Your actions?

- a) lumbotomy;
- b) perirenal blockade;
- c) conservative therapy;
- d) examination with subsequent treatment plan;
- e) none named.

5. What drugs are recommended after cross-linking the damaged testicle?

- a) antibiotics;
- b) glucocorticoids;
- c) analgesics;
- d) anti-inflammatory drugs;
- e) none of the above.

7. Specify the study will identify the source of hematuria:

- a) three glasses of trial;
- b) analysis of urine Amburzhe;
- c) test by Zimnitskiy;
- d) Sample Rapoport;
- e) test by Folgarda.



8. The patient, 25 years after kicking in the stomach hung in the hospital the next day with complaints of abdominal pain, malaise, fever to 38<sup>0</sup>, the inability to urinate. Seen from the state of medium gravity. Pulse 104 ud.v min. BP -120/80 mm Hg... Language dry, her stomach is involved in breathing. When the surface palpation over the heart shaped mild muscle tension and pain. Symptoms of peritoneal irritation clearly expressed. In urinary catheterization singled 500ml troubled with an unpleasant odor of urine. Indicate the most probable cause of the disease?

- a) The gap of the bladder
- b) contusion of abdominal wall
- c) subcutaneous rupture of the small intestine
- d) acute appendicitis
- e) retroperitoneal hematoma

9. Patient 18 years while playing football injured leg in the crotch, then appeared on the site of injury pain that increases with walking, perineum considerably swollen. When you try to urinate pain in the perineum increases, allocated a drop of blood.

What are the probable cause of urination disorders?

- a) gap bladder
- b) subcutaneous rupture of urethra
- c) a hematoma of perineum
- d) fracture of the pelvis
- e) injury of the penis

#### **Option 4**

Injuries to the kidneys, urinary tract and organs of the scrotum.

Select one or more correct answers.

1. Extraperitoneal rupture of the bladder.

- a) infiltration in the suprapubic region;
- b) hematuria;
- c) peritonitis
- d) all named
- e) there is nothing called

2. All of the named states with kidney injury, except for:

- a) hematuria;
- b) oliguria;
- c) urethrorrhagia;
- d) urogematomy;
- e) anemia.

3. Specify the study will identify the source of hematuria:

- a) trehstakannaya test;
- b) analysis of urine Amburzhe;
- c) test Zimnitskogo;
- d) Sample Rapoport;
- e) test Folgarda.

4. Penile fracture is characterized by:

- a) severe pain;
- b) a large hematoma;

- c) the appearance of a crunch during sexual contact;
- d) To strengthen erections;
- e) anything listed.

5. What is true for personal injury of the bladder?:

- a) hematuria;
- b) strangury;
- c) thauria;
- d) olioanuriya;
- e) Try these.

6. What drugs are recommended after cross-linking the damaged testicle?

- a) antibiotics;
- b) glucocorticoids;
- c) analgesics;
- d) anti-inflammatory drugs;
- e) none of the above.

.7. Specify the study allows to determine the source of hematuria:

- a) trehstakannaya test;
- b) analysis of urine Amburzhe;
- c) test Zimnitskogo;
- d) Sample Rapoport;
- e) test Folgarda.

8. Patient 57 years after the fall felt a sharp pain when urinating drew attention to the red color of urine. Urinalysis showed the presence of red blood cells. Ultrasound and X-ray examination showed no renal pathology. Your diagnosis?

- a) benign prostatic hyperplasia
- b) acute pyelonephritis
- c) damage to the urethra
- d) acute cystitis
- e) kidney injury

9. In the reception area brought the child complaining of severe abdominal pain, which gives the perineum. Constant urination and inability to implement it. There is a suspicion of bladder injury. What kind of research most appropriate?

- a) intravenous urography
- b) cystography
- c) cystochromoscopy
- d) laparoscopy
- e) cystoscopy

## Option 5

Injuries to the kidneys, urinary tract and organs of the scrotum.

Select one or more correct answers

1. Which of the following symptoms most commonly occurs when damage to the kidneys?

- a) reduction in blood pressure;
- b) swelling in the lumbar region;
- c) hematuria;

- d) renal colic;
- e) hyperthermia.

2. In which of these injuries can be renal colic?

- a) separation of renal legs;
- b) multiple breaks;
- c) renal injury;
- d) damage to the kidney subcapsular;
- e) hematoma perirenal fat.

3. What is always preceded by trauma intraperitoneal rupture of urinary bladder?

- a) fracture of the pelvis;
- b) emptying of the bladder;
- c) injury of the lower half of the abdomen;
- d) full bladder;
- e) a thin wall of the detrusor muscle.

4. In connection with chronic pyelonephritis pregnant in the active phase, CRF - II Stage, preeclampsia in gestational age 38 weeks performed the cesarean section. After the operation a catheter withdrawn from the bladder 250 ml of urine color "meat slops. What research should be done first before consulting a urologist?

- a) cystoscopy;
- b) analysis of urine Zimnitskiy;
- c) cystography;
- d) Sample Zildovicha;
- e) excretory urography with delayed

5. In some cases it is necessary drainage of the abdominal cavity?

- a) with symptoms of peritonitis;
- b) at all intraperitoneal injuries of the bladder;
- c) in the presence of blood in the abdominal cavity;
- d) the combination of damage to the urinary bladder with bowel injury;
- e) If the damage to the abdominal bladder was held more than 24 hours ago.

6 Penile fracture is characterized by:

- a) severe pain;
- b) a large hematoma;
- c) the appearance of a crunch during sexual contact;
- d) To strengthen erections;
- e) anything listed.

7. In some cases it is necessary drainage of the abdominal cavity?

- a) the presence of peritonitis;
- b) at all intraperitoneal injuries of the bladder;
- c) in the presence of blood in the abdominal cavity;
- d) the combination of damage to the urinary bladder with bowel injury;
- e) if damage to the abdominal bladder was held more than 24 hours ago.

8. . In the receiver urology department sent the patient Yu, 42 years old, diagnosed with - traumatic rupture of urethra. Enter the main symptom of a complete rupture of urethra:

- a) back pain;
- b) urethrorrhagia;

- c) retention of urine;
- d) increase in body temperature;
- e) withhold urine.

9 .. What drugs are recommended after cross-linking the damaged testicle?

- a) antibiotics;
- b) glucocorticoids;
- c) analgesics;
- d) anti-inflammatory drugs;
- e) none of the above.

## Option 6

Injuries to the kidneys, urinary tract and organs of the scrotum.

Select one or more correct answers

1. Name two of the most informative diagnostic method for finding and identifying kidney injury?

- a) Review urogram;
- b) ehoskanirovanie;
- c) retrograde ureteropielografiya;
- d) cystochromoscopy;
- e) infusion urography.

2. What is a subcapsular rupture kidneys?

- a) damage to the renal parenchyma with strain capsule;
- b) urogematoma;
- c) damage to the kidney with preservation of the surface capsule;
- d) damage to the vascular stalk kidneys;
- e) multiple injuries of the parenchyma, pyelocaliceal system and capsules.

3. Patient 25 years old, was taken to hospital with pain in the lumbar region to the right, gross hematuria. An hour ago he was struck a hard object. Pulse 80 bpm. in 1 minute, BP 120/70 mm Hg Palpation, ultrasound data and eksretornoy urography revealed urogematoma. What should be the therapeutic approach?

- a) bed rest;
- b) outpatient treatment;
- c) nephrectomy;
- d) lumbotomy, stapling gap nephrostomy;
- e) peace, the appointment Haemostatic and antibiotics.

4. Drainage of pelvic tissue Buyalskomu Mack Warter serve to:

- a) stop the bleeding;
- b) conversion of closed injuries of bones in the pelvis open;
- c) Preventing the emergence of urinary fistula;
- d) the audit of the bladder neck;
- e) emptying urogematomy to prevent pelvic cellulitis.

5. What are the two main symptoms of rupture urethra?

- a) urethrorrhagia;
- b) hematuria;

- c) a pain in the perineum;
- d) anuria;
- e) acute urinary retention.

6. What are the two main symptoms of rupture urethra?

- a) urethrorrhagia;
- b) hematuria;
- c) a pain in the perineum;
- d) anuria;
- e) acute urinary retention.

7. Which surgical approach for the wall, a closed-penetrative damage the urethra?

- a) epitsistostiya;
- b) waiting game with capillary punctures the bladder;
- c) attempt to introduce a permanent catheter;
- d) emergency surgery - the primary seam of the urethra;
- e) troakarna epitsistostiya.

8. Patient 57 years after the fall felt a sharp pain when urinating drew attention to the red color of urine. Urinalysis showed the presence of red blood cells. Ultrasound and X-ray examination showed no renal pathology. Your diagnosis?:

- a) benign prostatic hyperplasia
- b) acute pyelonephritis
- c) damage to the urethra
- d) acute cystitis
- e) kidney injury

9. To duty surgeon district hospital contacted the parents with a child who complains of severe abdominal pain that extends into the perineum. Constant urination and inability to implement it. There is a suspicion of bladder injury. What kind of research most appropriate?:

- a) excretory urography
- b) cystography
- c) cystochromoscopy
- d) all named
- e) there is nothing called

### Option 7

Injuries to the kidneys, urinary tract and organs of the scrotum.

Select one or more correct answers

1. What should I consider most important to address the question of the possibility of nephrectomy after trauma?

- a) the degree of blood loss;
- b) function of the contralateral kidney;
- c) availability urogematomy;
- d) the degree of damage to the kidneys;
- e) the general condition of the patient.

2. Which is most important study in the diagnosis of bladder rupture?

- a) politsistografiya;
- b) ultrasound;
- c) sedimentary cystography;
- d) cystography in the direct and lateral projections;

e) Review and excretory urography.

3. Patient P., 21, asked a hospital complaining of abdominal pain, more to the right in the lumbar-lower abdomen, nausea, vomiting once. While serving in the army was ill with acute glomerulonephritis. 2 hours before hospitalization before boarding a plane drank wine in large quantities. On arrival at the airport stumbled and fell. A hospital identified 250 ml urine intense pink color with a few small packages. What is the best diagnosis possible?

- a) exacerbation of glomerulonephritis;
- b) acute appendicitis;
- c) perforated stomach ulcer;
- d) acute cystitis;
- e) abdominal injury of the bladder.

4. In which of the combined damage should be suspected renal trauma?

- a) fracture of ribs;
- b) fracture of the clavicle;
- c) pelvis fracture;
- d) fracture endings;
- e) fracture of the spine.

5. The patient aged 42, is in trauma unit, where the delivered 2:00 ago after a serious road injuries in a state of shock. After removal of the shock (BP 155/60 mm Hg) made X-ray of the pelvis - fracture of the pubic and ischium on the right. Self is not urinating, bladder palpation at 5 cm above the pubis. The patient's plight. What operation is indicated the patient?

- a) troakarnaya cystostomy;
- b) catheter trohhodovim catheter Foley;
- c) primary suture of the urethra and cystostomy;
- d) cystostomy;
- e) with the cystostomy catheter Foley on the urethra.

6. Which surgical approach in patients with parietal, penetrative closed urethral injury?

- a) epitsistostomiya;
- b) waiting game with capillary punctures the bladder;
- c) enter a permanent catheter;
- d) emergency surgery - the primary seam of the urethra;
- e) troakarnaya epitsistostomiya.

7. Patient 18 years old, received a kick in the right half of the scrotal area for one day before treatment to the doctor. When viewed from the right half of the scrotum the size of two men fist (150x80 mm), intensely blue, the right testicle palpation not diferentsiruetsya. The patient was offered surgery audit bodies of the scrotum. What is the main complication is the latest reason for surgical treatment?

- a) pyesis hematoma;
- b) sexual dysfunction;
- c) Duration of temporary disability;
- d) auto-immune infertility;
- e) the threat inguinal-scrotal hernia.

8. Among the open lesions of the penis is most common:

- a) bitten by a wound;
- b) incised wound;
- c) stab wound;

- d) breaks and tears frenulum of the penis.
- e) All the above

9.B admitting department asked the patient, complaining of pain and a significant increase in the glans penis. The onset of illness relates to sexual intercourse. On examination revealed paraphimosis. Your tactics?:

- a) The right end of the penis
- a) a pain
- c) infringes on a section of the ring
- d) correct answer a) and c)
- e) the correct answer).

### Option 8

Injuries to the kidneys, urinary tract and organs of the scrotum.

Select one or more correct answers

1. Patient 18 years old, received a kick in the right half of the scrotal area for one day before treatment to the doctor. When viewed from the right half of the scrotum the size of two men fist (150h80 mm), intensely blue, the right testicle palpation not diferentsiruetsya. The patient was offered surgery audit bodies of the scrotum. What is the latest complication is the basis for surgical treatment?

- a) pyesis hematoma;
- b) sexual dysfunction;
- c) Duration of temporary disability;
- d) auto-immune infertility;
- e) the threat inguinal-scrotal hernia.

2. Among the open lesions of the penis is most common:

- a) bitten by a wound;
- b) incised wound;
- c) stab wound;
- d) ruptures and tears frenulum of the penis.
- e) none of the names

3. Within what time might rupture the urethra to hold the primary suture (primary plasticity)?

- a) the first 2 hours;
- b) the first 24 hours;
- c) 2 days;
- d) 3-4 days;
- e) 1 week.

4. Which therapeutic approach is advisable for kidney subcapsular injury?

- a) to monitor patients on an outpatient basis;
- b) emergency surgery;
- c) dynamic observation in hospital, compliance with bed rest for 8 days;
- d) massive hemostatic and antibacterial therapy;
- e) exclusion of physical stress for 3 months.

6. In the department receives patients after road trauma, hematuria. Tactics of the survey:

- a) tsitoskopiya;
- b) analysis of urine Zimnitskomu;
- c) excretory urography;
- d) isotope renography;

e) cystochromoscopy.

7. The patient aged 42, is in trauma unit, where delivered 2 hours ago after a difficult road trauma in a state of shock. After removal of the shock (BP 115/60 mm Hg) made X-ray of the pelvis - fracture of the pubic and ischium on the right. Self is not urinating, bladder palpation at 5 cm above the pubis. The patient's plight. What operation is indicated the patient?

- a) troakarnaya cystostomy;
- b) catheter trohhodovym catheter Foley;
- c) primary suture of the urethra and cystostomy;
- d) cystostomy;
- e) with the cystostomy catheter Foley on the urethra.

8. In the hospital receives a patient with scrotal trauma. When viewed from the left half of the scrotum enlarged, hyperemic. Bodies of the scrotum are not clearly defined. The treatment:

- a) jockstrap and cold on the scrotum;
- b) blockade by Lorin - Epshteynu;
- c) surgical treatment;
- d) antibacterial therapy, dynamic monitoring;
- d) compress on the scrotum.

9. To family doctor asked the patient, who for a long time had a penis in Schlege included polesosa. The penis is significantly increased in size, bluish-purple color. What is the pathophysiological mechanism of these changes?

- a) normal swelling
- b) violation of the arterial circulation
- c) fracture of the penis
- d) vein thrombosis of the penis
- e) none of the named

### Option 9

Injuries to the kidneys, urinary tract and organs of the scrotum.

Select one or more correct answers.

1. In the department receives a patient with scrotal trauma. When viewed from the left half of the scrotum enlarged, hyperemic. Bodies of the scrotum are not clearly defined. The treatment:

- a) jockstrap and cold on the scrotum;
- b) blockade by Lorin - Epshteynu;
- c) surgical treatment;
- d) antibacterial therapy, dynamic monitoring;
- e) compress on the scrotum.

2. In the hospital the patient was taken after a road traffic injuries with hematuria. Tactics of the survey:

- a) cystoscopy;
- b) sample Reyzelmana;
- c) excretory urography;
- d) isotope renography;
- e) cystochromoscopy.



3. After the kick in the crotch patient complains of pain during urination, hematuria. Tactics of the survey:

- a) excretory urography;
- b) urethrography;
- c) cystoscopy;
- d) isotope renography;
- e) computed tomography.

4. Once you hit the bottom half of the abdomen the patient complains of pain in the suprapubic region, a decrease of urine, hematuria. Tactics of the survey:

- a) cystoscopy;
- b) excretory urography;
- c) retrograde pyelography;
- d) cystography;
- e) isotope renography.

5. In a patient with a fractured pelvic bones an acute urinary retention. What kind of injury to the urinary organs need to think?

- a) injury of kidneys;
- b) the intraperitoneal rupture of the bladder;
- c) vnebryushnoy rupture of the bladder;
- d) ureterodialysis;
- e) acute renal failure.

6. Within what time might rupture the urethra to hold the primary suture (primary plasticity)?

- a) the first 2 hours;
- b) the first 24 hours;
- c) 2 days;
- d) 3-4 days;
- e) after 7 days

7. In the department asked the patient complaining of erection, which lasts for three days. First aid:

- a) recommend to achieve orgasm
- a) impose a pressure bandage.
- c) Introduce cavernosum adrenaline solution
- d) emptying the cavernous bodies through their puncture

8. Zhenshchina complains of abdominal pain, frequent calls to urinate. Sick third day. In the abdominal cavity is determined by the free liquid. To avoid intra-abdominal injuries of the bladder must be performed:

- a) secretion ugrammu
- c) ultrasound
- c) celiocentesis
- d) sample Zeldovich
- e) the taut rising tsistogrammu in direct and lateral projection

9. Kotoroe of these studies below contraindicated after the trauma of the perineum with urethrorrhagia?

- a) urethrography;
- b) excretory urography with delayed cystography;
- c) Cystoscope;
- d) Ultrasound of the kidneys and bladder;
- e) isotope renography.

## Option 10

Injuries to the kidneys, urinary tract and organs of the scrotum.

Select one or more correct answers

1. The patient, aged 34, complained of frequent urination with pain. The patient was a year ago perineal trauma. In connection with the trauma of the urethra. The latter operation was performed 3-4 months urinating, reduced caliber of the jet. Which tool can help in diagnosing and treating a patient?

- a) cystoscope;
- b) Uroflowmeter;
- c) Foley catheter;
- d) ehoskaner;
- e) bougie.

2. Which of the below-mentioned studies is contraindicated after the trauma of the perineum with urethrorrhagia?

- a) urethrography;
- b) excretory urography with delayed Cystography;
- c) Cystoscope;
- d) Ultrasound of the kidneys and bladder;
- e) isotope renography.

3. The most characteristic symptoms of kidney damage:

- a) leukocytosis;
- b) arterial hypertension;
- c) availability urogematomy;
- d) renal colic;
- e) hyperthermia.

4. Indications for urgent surgery for kidney damage:

- a) Combined kidney injury with damage to internal organs;
- b) increase of signs of internal bleeding;
- c) Increase urogematomy;
- d) intense hematuria;
- e) open kidney damage;

.

5. In a closed complete rupture of the bladder should:

- a) establish a permanent catheter for 7 days;
- b) urgent surgical treatment;
- c) antibiotics, analgesics and spazmalitiki.
- d) all answers wrong
- e) all the answers correct

6. After the kick in the crotch patient complains of pain during urination, hematuria. Tactics of the survey:

- a) excretory urography;
- b) urethrography;
- c) cystoscopy;
- d) isotope renography;

e) computed tomography.

7. The patient, aged 34, complained of frequent urination with pain. The patient was a year ago perineal trauma. In connection with the trauma of the urethra was performed operations of the last 3-4 months of difficulty of urination, reduced caliber of the jet. Which tool can help in diagnosing and treating a patient?

- a) cystoscope;
- b) Uroflowmeter;
- c) Foley catheter;
- d) ehoskaner;
- e) bougie.

8. To duty therapist delivered mechanic with degloving injury to the scrotum. Your actions?

- a) the tourniquet at the root of the scrotum
- a) impose aseptic dressing
- c) impose ointment bandage
- d) correct answer a) and b)
- e) none of the answer is not correct

9. Vsledstvie drop in patient XI rib fracture on the left. Three days later, increased pain in the sacrum on the left. Palpation of the left hypochondrium pain, the left kidney increased in size. What kind of research most appropriate?:

- a) ultrasound
- a) plain film of the abdominal cavities
- c) excretory urography
- d) computed tomography
- e) Dynamic scintigraphy

**6.2.1. Indicative map for the formation of practical skills.**

The task	sequence of actions	to implement the instructions
Catheter-tion of the bladder	<p><b>in women :</b></p> <p>A-1 status of patients on the gynecological chair, lying on his back with divorced and flexed hips</p> <p>A-2 Preparation of the operative field "- the urethra.</p> <p>A-3 Introduction of a catheter into the bladder</p>	<p>A-2.1. perineum and pubis, and the eve of the urethra is treated once every 1% iodine solution and once in an alcoholic solution of chlorhexidine;</p> <p>A-2.2. bred small labia to the side 1 st and 2 nd fingers of his left hand, which makes it possible to see the external opening of the urethra;</p> <p>A-2.3. swab moistened disinfecting solution, wipe the external urethral opening;</p> <p>A-3.1. right hand with sterile tweezers take a sterile catheter (tapered) at 2-3 cm above the side window;</p> <p>A-3.2. the other end of the catheter keeps the nurse (assistant manipulation), or bent and the end of the catheter is held between 4 th and 5</p>

	<p>A-4 Rinse bladder</p> <p>A-5 of the Introduction of drugs or the introduction of 15% solution of contrast medium for retrograde tsistogrammy</p>	<p>th fingers of the same right hand (pay attention to a catheter does not touch any sterile objects!)</p> <p>A-3.3. catheter well to moisten or lubricate the sterile (!) Vaseline or glycerine, polimiksinovoy or other ointment (in Tübach for wounds, mucous membranes);</p> <p>A-3.4. right hand to hold the catheter urethra to a depth of 5-8 cm before the expiration of urine;</p> <p>A-4.1. a 20 ml syringe or a syringe Jean gaining 20-50 ml of saline and injected into the bladder. Repeat several times to get a clean solution</p> <p>A-5.1. After washing the bladder syringe to the catheter to the bactericidal action of injected 20 ml of antibiotic, ekteritsida, mikrotsida or other medical fluid. For the X-ray injected 200-250 ml of contrast fluid (each vial of 20 ml dilute saline solution or distilled water to 100 ml).</p>
	<p><b>Men:</b> B-1, too, that A-1</p> <p>B-2, too, that and A-2</p> <p>B-3, too, that A-3</p> <p>B-4.5, too, that A-.4. 5</p>	<p>B-2.1. take the penis and the third chervertym his left hand and thumb and forefinger the same hands reveal sponges external orifice of urethra.</p> <p>B-2.2. well rubbed with external opening and the head of disinfecting solution</p> <p>B-3.1-3. same as A-2.1-3</p> <p>B-3.4. catheter to hold the bladder (20-25 cm). If, due to spasm of the sphincter of the perineum meet an obstacle, wait a few minutes, offer the patient to make a few breaths</p> <p>B-4.5, too, that A-5.4</p>
Curatio Patient	Complaints	<p>3. The nature and localization of pain (at the waist, abdomen, above the heart shaped, in the perineum).</p> <p>4. The presence of hematuria, urethrorrhagia.</p> <p>5. The nature of urination (frequency, pain during urination, a feeling of emptying of the bladder, the amount of urine at each micturition after trauma).</p> <p>6. Complaints that are due to injuries of other organs</p>
<b>The task</b>	<b>sequence of actions</b>	<b>implement the instructions</b>
I. retrograde urethrography (instilyatsiya urethra)	1.Position rentgen patient on the table, left leg extended, right - assigned laterally, her heel in the popliteal fossa леивой feet. Pelvic ring is preferably	<p>1. in the absence of damage of the pelvic bones. Used for damage and stricture of the urethra.</p> <p>2.1. They take a penis the third and fourth fingers of his left hand and thumb and forefinger the same hands reveal sponges</p>

	<p>slightly raise the right.</p> <p>2. The preparation of the operative field "- the urethra.</p> <p>3. Introduction of fluid into the urethra.</p> <p>Urethrogram</p>	<p>external orifice of urethra.</p> <p>2.2. Well wipe the outer opening and penis disinfectant.</p> <p>3.1. Solution before the introduction of heat to body temperature. For urethrography take 10-20 ml, diluted sm.1: 2.</p> <p>3.2. On the cannula syringe for, the introduction of pressurized fluid "dress" a piece of catheter (coracoid), a length of about 5 cm</p> <p>3.3. The catheter is well lubricated with sterile vaseline or gel other remedy (in tubes for wounds or mucous membranes).</p> <p>3.4. Catheter 3-4 cm into urethra. Penis tighten parallel to the axis of the femur.</p> <p>3.5. Enter the solution in the urethra without pressure, so as not to cause pain reaction.</p> <p>4.1. X-ray done at the end of the introduction of 20 ml of solution at the time of introduction. Do not forget to dress to reduce radiation exposure (before manipulation), a protective apron</p>
Curatio patient	complaints	<p>7. The nature and localization of pain (at the waist, abdomen, above the heart shaped, in the area)</p> <p>8. The presence of hematuria, urethrorrhagia</p> <p>9. The nature of urination (frequency, pain during urination, a feeling of emptying of the bladder, the amount of urine at each micturition after trauma).</p> <p>10. The complaints, which caused damage to other organs.</p>
	Anamnesis and life	<p>1. Time of injury, its nature, strength and direction.</p> <p>2. Sensations in the first minute and in the dynamics after the injury, by whom and what assistance was carried out.</p> <p>3. Were the first kidney and urinary tract?</p> <p>4. Time of haematuria, urethrorrhagia, their character.</p> <p>When, after the injury appeared first urge to urinate?</p>
	Unbiased survey	<p>1. The general condition of the patient (shock, collapse, alcohol and so on.)</p> <p>2. The patient's condition (stimulated, "psoas-</p>

		<p>symptom", the position of a frog, a symptom of "Vanya-Poly, scoliosis).</p> <p>3. The color of the skin, mucous membranes, the presence of scratches, bruises, hemorrhages, tumors, dark violet</p> <p>4. The presence of deformation (bulging lumbar region of the abdomen, above the heart shaped, in the perineum, scrotum or penis), crepitation (subcutaneous emphysema).</p> <p>5. Condition of bones and joints (spine, ribs, pelvis).</p> <p>6. By palpation the abdomen to determine the signs of irritation of peritoneum, the presence of fluid in the abdomen, swelling and a hypochondriac (by pararenalnoy hematoma). Palpate the suprapubic area, the urethra, perineum.</p> <p>7. Auscultation: the presence of lung sounds, bowel peristalsis.</p> <p>Macroscopic examination of urine.</p>
	Analysis of X-ray studies	<p>1. On plain film of the urinary system assess the condition of the bones of the skeleton (the presence of fractures, scoliosis, etc.), lack of contours on the affected side of the kidney, the disappearance of the contour of the psoas due urogematomy.</p> <p>2. On excretory urogram show: possible signs of kidney damage: (a weak and later fill the contrast pyelocaliceal system, extrarenal leaking contrast, a lack of contrast medium on the injured side).</p> <p>3. Find in Arteriogram signs of damage. If you suspect that injured bladder or urethra spend retrograde cysto-urethrogram or. In extraperitoneal rupture detected leaking rentgenkontrastnogo matter the contours of the body in the form of heterogeneous mass.</p>
	Evaluation of laboratory	<p>1) Complete blood count</p> <p>2) biochemical studies, the amount of which depends on the patient's condition and the need for surgical treatment.</p> <p>Urine.</p>
	Evaluation of instrumental examinations	<p>1) If you suspect a kidney injury - cystochromoscopy.</p> <p>2) If you suspect a rupture of his bladder catheterization.</p> <p>If you suspect a rupture urethra instrumental investigations are contraindicated.</p>

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### **6.3. Materials control the final phase of training.**

#### **Atypical situational problems.**

1. Patient 43 years old, was admitted to the hospital about pain in the left half of the lumbar region, which appeared after falling from a height of 2 m. After the injury during urination twice noted the presence of gross hematuria. Condition moderate. Blood pressure and pulse rate are responsible. From the side of the chest and abdominal cavities revealed no pathologic changes. There is a small painful swelling in the left lumbar region Specify a preliminary diagnosis and justify it.

2. Patient 25 years old, was admitted to the clinic about pain in the right lumbar region, macrohematuria with clots. Some time ago the patient had been struck a hard object in the specified area. The situation forced: there is scoliosis in the affected side. In the right hypochondrium is swelling and tenderness. Pulse 128 beats a minute. Arterial pressure was 85/50 mmHg signs of peritoneal irritation are absent, free fluid in the abdominal cavity is not defined. On excretory urogram left kidney of normal size. Pyelocaliceal system unchanged, arcade rentgenkontrastnogo substance of the ureter is not disturbed. On the right contrast agent in the projection of the kidneys and urinary tract were found.

Cystochromoscopy: from the mouth of the right ureter trickle bleed, indigo is not seen until 12 min. observation. Left - urine, stained indigo, entered the 7 min.

Your diagnosis? Therapeutic tactics? Is there a need for the implementation of any additional tests?

3. Patient 35 years old, was admitted to the clinic about pain in the suprapubic region, ischuria. Three hours ago, in a drunken state was hit in the suprapubic region. Despite the strong urge to urinate, after injury can not help. The situation forced - sits. There are a symptom of "Vanya's Poly. Rectal surveyed is the overhang of the front wall of the rectum. In the abdominal percussion determined by the free liquid.

Your previous diagnosis? Diagnostic and therapeutic approach?

4. In the patient's clinical and radiological signs diagnosed extraperitoneal rupture of the bladder. Which therapeutic approach?

5. Patient 40 years old, was admitted to the clinic about urethrorrhagia. An hour ago, fell from a height and hit his crotch on a vertical board

Your preliminary diagnosis? What are the methods of examination are shown?

6. Patient aged 42, is in trauma unit, where he was taken after a car accident in a state of shock. After the shock of vyvodeniya made a snapshot of the pelvic bones, which is installed pubic bone fracture on the left. Itself does not produce urine, palpable enlarged bladder in the external orifice of urethra, a blood clot.

What diagnostic and therapeutic approach?

7. The patient aged 42, went to the hospital after 1,5 hours after the fall and damage the perineum blow on the metal bar. Complaints of urinary retention, outflow of blood from the urethra. What kind of research will allow significantly determines the localization, the nature of the alleged damage to the urethra?

- a) general analysis of urine;
- b) Catheterization of the urethra;
- c) ureteroscopy;
- d) retrograde urethrography;

e) X-ray of the pelvis.

8. Patient 50 years old, hospitalized for open full damage to the urethra two days ago. What kind of surgery on the absolute indications must meet the patient in a matter of urgency?

- a) Primary uretrouretroanastomoz;
- b) primary surgical treatment;
- c) porotomy;
- d) cystostomy;
- e) "tunnelization" urethra.

9. Patient 20 years old, went to the hospital in connection with the injury scrotum, pain, increase in size and presence of hematoma. What kind of research will help deliver clinical diagnosis?

- a) palpation of the scrotal organs;
- b) X-ray;
- c) radionuclide scan of the testicles;
- d) transillumination;
- e) ultrasound scan of scrotum.

10. Emergency services in full damage urethra:

- a) Catheterization of the bladder;
- b) primary suture the urethra;
- c) cystostomy and drainage of hematoma.

11. The patient clinical and radiological signs diagnosed extraperitoneal rupture of the bladder. Which therapeutic approach?

12. Patient 40 years old, was admitted to the clinic about urethrorrhagia. An hour ago, fell from a height and hit his crotch on the metal bar.

Your preliminary diagnosis? What are the methods of examination are shown?

13. Patient aged 42, is in trauma unit, where he was taken after a car accident in a state of shock. Following the withdrawal of the shock made a snapshot of the pelvic bones, pubic bone fracture found on the left. Itself does not produce urine, palpable enlarged bladder in the external orifice of urethra, a blood clot.

What diagnostic and therapeutic approach?

14. The patient aged 42, went to a hospital after 1,5 hours after the fall and damage the crotch blow on the metal bar. Complaints of urinary retention, outflow of blood from the urethra. What study will reliably establish the localization, the nature of the alleged damage to the urethra?

- f) a general analysis of urine;
- g) urethral catheterisation;
- h) ureteroscopy;
- i) retrograde urethrography;
- j) X-ray of the pelvis.

15. Patient 50 years old, hospitalized for open full damage to the urethra two days ago. What kind of surgery on the absolute indications must meet the patient in a matter of urgency?

- f) Primary uretrouretroanastomoz;
- g) primary surgical treatment;
- h) porotomy;
- i) cystostomy;
- j) "tunnelization" urethra.



16. Patient 20 years old, went to the hospital in connection with the injury scrotum, pain, increase in size and presence of hematoma. What kind of research will put clinical diagnosis?

- f) palpation of the scrotal organs;
- g) X-ray;
- h) radionuclide scan of the testicles;
- i) transillumination;
- j) ultrasound scan of the scrotum.

17. Emergency services in full damage urethra:

- d) urinary catheterization;
- e) primary suture the urethra;
- f) cystostomy and drainage of hematoma.

### **Standards of responses to situational problems.**

1. The pain, gross hematuria, the presence of swelling in the left lumbar region, allow the doctor to suspect damage to the kidney. To address the question of the nature of changes in the kidneys must perform excretory urography, which will reveal signs of damage to the left kidney (weak and later filled radiopaque pyelocaliceal system, extrarenal streaks of contrast material or complete absence on the side of injury) and the state of the contralateral kidney.

2. Medical history and objective data, typical right kidney damage. Evidence of bleeding from the kidney, which is associated with injury, in connection with what is shown renal Angiography. In the absence of conditions for its performance of patients showed rapid treatment - lumbotomy. The nature of operations in the kidney depends on the degree of damage.

3. Pain over heart shaped, ischuria, which emerged after the injury forced position of the patient, presence of symptoms of "Vanya-Poly, the overhang of the anterior rectal wall, free fluid in the abdominal cavity characteristic of intraperitoneal rupture of the bladder. Shown retrograde cystography, which may reveal streaks radiopaque substance beyond the bladder, which is a sign of his break. The patient showed immediate operative treatment - laparotomy, suturing of the bladder rupture, epitsistostomiya (extraperitoneal access).

4. Extraperitoneal rupture of the bladder is an indication for surgery - cystostomy, audit bladder suturing gap, drainage of the bladder (epitsistostomiya) and perirenal fat of Buyalskomu Mack Warter or other means.

5. The fall in the crotch, followed by uretroragiey can think otravmaticheskoy rupture urethra. You must perform retrograde urethrography.

6. reveal any signs of damage left kidney (weak and later filling kontrasnym substance pyelocaliceal system, extrarenal streaks of contrast or lack of it on the side of injury) and the state of the contralateral kidney.

Medical history and objective figures in characteristic damage to the right kidney. Signs of bleeding from the kidney, which resulted in damage, in connection with what is shown renal angiography. In the absence of conditions for its performance of patients showed rapid treatment - lumbotomy. Type of surgery on the kidney depends on the degree of damage.

7. In a patient with fractures of the pelvic bones, obviously, is a complete rupture of urethra. Shown immediate urethrography. In the case of confirmation of the diagnosis - epitsistostomiya, primary suture of the urethra, drainage urogematomy.

8. The pain, gross hematuria, the presence of swelling in the left lumbar region, allow the doctor to suspect damage to the kidney. To address the question of the nature of changes in the kidneys need to perform excretory urography, which allows

9. Pain over heart shaped, ischuria, which arose after an injury forced position of the patient, presence of symptoms of "Vanya-Poly, the overhang of the anterior rectal wall, free fluid in the abdominal emptiness characteristic of intraperitoneal rupture of the bladder. Shown retrograde cystography, which may reveal streaks radiopaque substance beyond the bladder, is a sign of his break. Patients showed an immediate surgical treatment - laparotomy, suturing of the bladder rupture, epitsistostomiya (extraperitoneal access).

10. Extraperitoneal rupture of the bladder is an indication for surgery - cystostomy, audit of the bladder, stapling the gap, drainage of the bladder (epitsistostomiya) and perirenal fat of Buyalskomu Mack Warter, or other means.

11. The fall in the crotch with the next urethrorrhagia can think of traumatic rupture of the urethra. You must perform retrograde urethrography.

12. In a patient with fractures of the pelvis is obviously a complete breakdown of the urethra. Shown immediate urethrography. In case of confirmation of the diagnosis - epiitsistostomiya, primary suture of the urethra, drainage urogematomy.

#### **6.4. Materials for self-study students.**

##### **Orientirovochnaya map of the students with the educational literature.**

1. The mechanism of kidney damage, and their classification:

А Урологія. О. Возіанов, А. V. Lyulko.-Kiev, 2018 .- (a), p. 312-316, 323-324.

б Urology. Ed. N.A.Lopatkina.-M.2017 (b), p. 135-136, 147.

2. The clinical picture of renal injury.

Yes. 316-317, 324;

б.. 137-139.

3. Diagnosis and differential diagnosis of kidney damage.

Yes. 318-319, 324;

б.. 139-142, 147-149.

4. Treatment and complications of renal injury.

Yes. 319-323, 324-326;

б.. 142-147, 149-150.

5. The mechanism of injury, classification and symptoms of damage to the ureter.

Yes. 326-327, 333-334;

б.. 150-151, 152.

6. Diagnosis and treatment of ureteral injuries.

Yes. 327-333, 334;

b.. 151-152, 152-153.

7. Mechanisms and classification of lesions of the bladder.

Yes. 334, 339-340;

b.. 154-157, 162.

8. Clinic and diagnosis of injuries of the bladder.

Yes. 335-337, 340-341;

b.. 157-160, 163.

9. Treatment of injuries of the bladder.

Yes. 337-339, 341;

b.. 160-162, 163-164.

10. The mechanism of injury and their classification in trauma urethra:

Yes. Urology. O. Vozianov, A.V.Lyulko.-Kiev, -2018 .- sided 342-347.

b.. Urology. Ed. NA Lopatkina .- M. 2017 pp. 164-172.

10. Clinical features and diagnosis of damage:

a) p. 342-347

b) p. 164-172

12 Treatment of urethral injuries:

a) str.343, 346

b) str.164-172

13 stricture (narrowing) of the urethra: Causes, diagnosis and methods of conservative, endoscopic and surgical treatment:

a) p. 347-352

b) str.172-176

14 The mechanism of damage to the penis, their classification and clinical symptoms:

a) p. 352-356

b) str.178-180

15. Diagnosis and treatment of injuries of the penis:

a) p. 352-359

b) str.178-180

16Klassifikatsiya and clinical signs of damage to the scrotum and its organs:

a) p. 359-365

b) p. 176-178

17. Diagnosis and treatment of injuries of the scrotum and testis:

a) p. 359-365

b) str.176-178

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Basic: Urology/ by edit. S.P. Pasiechnikof.-Vinnitsa.- 2018/

1. Pasiechniko S.P v. Study guide for practical work for medical students, 2017
2. Smith's Genetal Urology, 17th edition, 2018. Emil A.Tanagho, Jack W.McAninch
3. E.M. Shimkus, S.E. Shimkus. Urology, 2015

Additional:

1. European Association of Urology Guidelines. 2017 edition.

## **9. The problem with Wirz and NIRS on this topic:**

1. Iatrogenic injury of the kidneys, ureter, bladder;
2. Features of damage ureter and urinary bladder in obstetrical and gynecological practice. Urinary fistula ureter, bladder;
3. Features of clinical signs of kidney damage and urinary tract in children;
4. Make an analysis of the stories of patients who were treated at the urological clinic for 5 years;
5. Learn efficient use of the complex conservative therapy of renal injury antioxidants, enzymes, ozone or another.

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## **Recommended literature.**

### **Basic:**

1. S.P. Pasechnikov; Urology: textbook/ Ed. S. P. Pasyechnikova, S. A. Vozianov, V. N. Lesovy [and others]. - View. 3rd – Vinnytsia: New Book, 2019.
2. Pasechnikov S.P. Modern problems of urology: [manual]: doctor's guide/ S.P. Pasechnikov, V.I. Zaitsev. - Kyiv: L-ry Health of Ukraine; 2017.
3. Stus V.P. Urology (practical skills for intern doctors) / V.P. Stus, S.P. Pasechnikov. Teaching and methodical manual. - Dnipropetrovsk: Akcent PP LLC, 2016.
4. Sarychev L.P. Symptoms of urological diseases: method. rec. For teachers / L. P. Sarychev, S. M. Suprunenko, S. A. Sukhomlyn, Ya. V. Sarychev. – Poltava, 2019.
5. O.V., Lyulko, O.F. Vozianov Textbook "Urology" 3rd edition. Thresholds Dnipropetrovsk. - 2012 p.
6. "Urology (Methodical development of practical classes for students)" edited by Professor V.P. Stus, second edition, supplemented. / A.P. Stus, Moiseinko M.M., Fridberg A.M., Pollion

- M.Yu., Barannik K.S., Suvaryan A.L., Krasnov V.M., Kryzhanivskiy O.Yu. - Dnipro: Accent LLC. - 2018. - 336c.
7. Urology: textbook for students. higher med. academic established: translation from Ukrainian publications / S.P. Pasechnikov, S.A. Vozianov, V.N. Lesovoy, F.I. Kostev, V.P. Stus, et al./ Ed. S.P. Pasechnikov - Edition 2. - Vinnytsia: Novaya Knyga, 2015. - 456 p.: illustr.
  8. Urology: textbook for students of higher medical education Institutions /S.P. Pasechnikov, S.O. Vozianov, V.M. Lesovoy (et at.); ed. by Pasechnikov. / S.P. Pasechnikov, S.O. Vozianov, V.M. Lesovoy (et at.) - Vinnytsia: Nova Knyha, 2016. - 400 p.
  9. EAU Guidelines, edition presented at the 28th EAU Annual Congress, Milan 2021. ISBN 978-90-79754-71-7. EAU Guidelines Office, Arnhem, The Netherlands.
  10. Alan W. Partin, Alan J. Wein, et. all - Campbell Walsh Wein Urology, E-Book (12th ed.) – 2020.
  11. Omar M. Aboumarzouk - Blandy's Urology, 3rd Edition – 2019.
  12. David Thurtle, Suzanne Biers, Michal Sut, James Armitage. - Emergencies in Urology – 2017. 4. Philipp Dahm, Roger Dmochowski - Evidence-based Urology, 2nd Edition – 2018.

Additional:

1. Boyko M.I., Pasechnikov S.P., Stus V.P. and others Clinical andrology // Doctor's guide "Androlog". - K.: LLC "Library "Health of Ukraine", 2013. - 222 p.
2. Sarychev L.P. Clinical anatomy and physiology of organs of the urinary and male reproductive system: method. rec. for teachers / comp. L. P. Sarychev, S. A. Sukhomlyn, S. M. Suprunenko. – Poltava, 2019. – 11 p.
3. Sarychev L.P. Symptoms of urological diseases: method. rec. for teachers / L. P. Sarychev, S. M. Suprunenko, S. A. Sukhomlyn, Ya. V. Sarychev. – Poltava, 2019. – 14 p.
4. Medical student's library. Urology. Edited by F.I. Kosteva. - Odesa, 2004. – 296p.
5. Atlas-guide to urology. Ed. A.F. Vozianova, A.V. Lulko Dnipropetrovsk, 2002.-T. 1,2,3
6. Urology / Ed. Prof. O.S. Fedoruk - Chernivtsi: Bukovyna State Medical University, 2011. - 344p.

**Information resources:**

University website <https://onmedu.edu.ua>

Library [library.odmu.edu.ua](http://library.odmu.edu.ua)

1. <https://uroweb.org/>
2. <https://www.nccn.org/>
3. <https://www.auanet.org>
4. <https://www.inurol.kiev.ua/>
5. <https://www.souu.org.ua/>