2020

SASP

AUA SELF-ASSESSMENT STUDY PROGRAM

American Urological Association
Education & Research, Inc.

American Urological Association Education and Research, Inc.
Office of Education

2020 Self-Assessment Study Program

Part 1 - Questions

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Special thanks and recognition go to those who gave of their time, effort, and knowledge to compose this examination. The views expressed in this educational material are not necessarily the views of the AUA but represent the opinions of the authors and the ABU Examination Committee.

Accreditation: The American Urological Association (AUA) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Credit Designation Statement: The American Urological Association designates this enduring material for a maximum of 20.00 *AMA PRA Category 1 Credits*™. Physicians should claim only the credit commensurate with the extent of their participation in this activity.

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Original Release Date: January 2020 **Expiration Date:** December 2022

Estimated time for study, test completion, and reference reading for each SASP is 20 hours.

Target Audience: This self-assessment program is designed for practicing urologists, Board candidates, residents and/or physician assistants.

Purpose/Need: Urologists and other health care providers need to assess their knowledge of urology. Identified gaps in this knowledge can lead to individualized, practical educational activities, which will result in improved patient care.

Method of Participation: Participants will receive a SASP booklet, answer sheet, and return envelope with cardboard insert. The SASP is designated for a maximum of 20.00 *AMA PRA Category 1 Credits*™. To earn credit, participants must read the educational material provided, designate answers for each of the 150 multiple-choice questions, and return the answer sheet for evaluation, answering 50% of the test questions correctly.

Learning Objectives: After completion of this continuing medical education activity, including this examination, participants will be able to:

- assess their knowledge of urology
- demonstrate an increased knowledge base of urology
- apply increased knowledge to improve quality of patient care
- evaluate strengths and weaknesses in urology upon review of their personalized participant profile
- develop a personalized study program

Evidence Based Content: It is the policy of the AUA to ensure that the content contained in this CME activity is valid, fair, balanced, scientifically rigorous, and free of commercial bias.

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- Limit content to evidence with no recommendations
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Self-Assessment Study Program

INTRODUCTION

This Self-Assessment Study Program is designed to provide practicing physicians, Board candidates, and residents with an assessment of their knowledge of urology and to be a valuable learning experience which should add significantly to their store of knowledge. In addition, expectations are that there will be an improvement in the quality of care delivered to their patients. Relative strengths and weaknesses in urology will be immediately apparent upon review of the personalized Participant Profile. All data concerning results of the Study Program are strictly confidential and elaborate security measures have been set up in the Office of Education to ensure that only the individual participant has access to their scores.

The Self-Assessment Study Program may be completed under either open or closed book test conditions. We urge participants to select the examination condition with which they are most comfortable. Open book implies the use of references and other resource materials. Closed book implies that reference materials are not used. To ensure a fair comparison, peer group reports are compiled separately for the "open book" and "closed book" groups.

Participants who desire CME must score a minimum of 50% and may take the SASP under either closed or open book test conditions. An additional answer sheet is provided to retake the examination for credit if the 50% benchmark has not been met.

The purpose of the program is self-assessment and learning, **NOT** an evaluation of the participant by the American Urological Association or any other agency. The examination is designed to be a valuable learning experience as well as a self-evaluation and therefore is considered to be a valid measure regardless of open or closed book conditions.

The examination items require a recall of medical knowledge and application of clinical experience. Time should be taken to consider each item carefully. We strongly recommend blocking out three to four hours to take the examination in one, or at most, two sittings. The examination should not be stretched over multiple sessions. Participants should select one answer that they feel is the best. At the completion of the exam, it is important for the learner to read very carefully the comments and recommended resources as to why the answer is deemed to be the "best answer".

Immediately after completion, participants return their answer sheet to the AUA Office of Education. **EACH WEEK** answer sheets are scored and personalized. Participant Profiles are compiled and mailed along with an evaluation or a second answer sheet to retake the exam. Certificate of Completion for CME credit is available online at AUAnet.org/University.

At the end of the year, peer group reports will be compiled. In order for scores to be included in the peer group data, completed answer sheets must be in the Office of Education before October 1, 2019. After the final weekly scoring, peer group reports will be sent to all participants who returned an answer sheet. Included in this report will be an overview of your personalized Participant Profile.

Finally, we hope that the Self-Assessment Study Program is found to be a stimulating, informative, and beneficial tool for Continuing Education as you strive for high-quality patient care.

INSTRUCTIONS

PLEASE READ CAREFULLY

I. ASSEMBLE MATERIALS

1) SASP PART I: 150 multiple-choice questions (front section of book).
   SASP PART II: Explanations, comments, and references (back section).
2) Answer Sheet: Two return address tabs should be attached to the bottom.
3) No. 2 Pencil: Answer sheets completed in ink will not be scored.
4) Exam Trustee Envelope: Should include protective cardboard.

II. PREPARE YOUR ANSWER SHEET

Please note: The stamped answer sheet tracking number (not to be confused with your AUA ID Number) is used by AUA Staff during scoring.

1) **Identification Information.** Complete the information by writing in numbers and blackening the corresponding grid numbers.

   A. **Years Out:** Write the number of years since you completed residency training. If this is less than 10 years, the first digit will be "0". If you are currently in residency, record this number as "99".
   B. **Up to 20 CME Credits:** Please mark the number of credits you wish to claim.
   C. **Book Year:** Write "20" here.
   D. **AUA ID Number:** Using leading zero(s), write your AUA ID Number.
   E. **Date:** Write the date you take the exam.
   F. **Teaching Load:**
      None indicates you devote all of your time to private practice. Although may have a clinic appointment with a medical school in the area, there is no interface with medical students, residents, or interns.
      Light indicates you devote the majority of your time to private practice; however, also have a faculty appointment which requires that you participate in rounds, conferences, or lectures approximately 5-10 times per year.
      Medium indicates in addition to private practice, you have an active teaching service which requires at least weekly contact with medical students, residents or interns.
      Heavy indicates you devote the majority of your time to a faculty appointment which includes daily contact with medical students, residents, or interns in the capacity of teaching or supervising their activities.
   G. **Exam Type:**
      Open book indicates that reference material will be used during the exam.
      Closed book indicates that no reference material will be used during the exam.

2) **Return Address Tabs.** Please use a permanent address when completing these tabs. Do not detach from answer sheet. One tab will be used to send your personalized Participant Profile. The other will be used to send your Peer Group Report in late 2020.

III. BEGIN THE EXAMINATION

1) Note that the sequence of questions on the answer sheet goes down the page and not across the page.
2) Block out 3-4 hours to read and answer the exam questions.
3) Mark ONLY ONE ANSWER.
4) Erase changes completely.

IV. AFTER COMPLETING THE EXAM

1) IMPORTANT!!!! Make a copy of your completed answer sheet.
2) Mail your answer sheet in the envelope provided with the protective cardboard. Do not fold the answer portion of the sheet.
3) Allow 3-4 weeks for the return of your personalized Participant Profile and Evaluation form, or a second answer sheet to retake the exam. Certificate of Completion for CME credit is available online at AUAnet.org/University.
4) Begin studying Part II of the SASP (back section of SASP booklet).

IMPORTANT!!! CME Credit Expiration Dates

Please note: CME Credits expire after three years of original release date.

Answers must be submitted by the CME credit expiration deadline to receive credit for that year. Refer to CME expiration dates below:

2020 SASP	December 31, 2022
2019 SASP	December 31, 2021
2018 SASP	December 31, 2020

2017 SASP and Prior Years are not eligible for CME credits.

All data concerning results of the study program are strictly confidential and elaborate security measures have been set-up in the Office of Education to ensure that only the individual participant has access to their scores. For additional information regarding this program, please contact: American Urological Association Education and Research, Inc. (All rights reserved.) Printed in USA 01/2020.

ABU Examination Committee
Common Urology Abbreviations

ACE	Angiotensin converting enzyme
ACTH	Adenocorticotrophic hormone
ADH	Antidiuretic hormone
AFP	Alpha-fetoprotein
AIDS	Acquired immune deficiency syndrome
beta-hCG	Beta human chorionic gonadotropin
BCG	Bacillus Calmette-Guerin
BEP	Bleomycin, etoposide & cisplatin
BPH	Benign prostatic hyperplasia
CIC	Clean intermittent catheterization
CAH	Congenital adrenal hyperplasia
CIS	Carcinoma in situ
CMG	Cystometrogram
COPD	Chronic obstructive pulmonary disease
CT	Computed tomography
CVA	Cerebrovascular accident
DDAVP	Vasopressin synthetic analog
DES	Diethylstilbestrol
DMSA	Dimercaptosuccinic acid
DRE	Digital rectal exam
DTPA	Tc-99m Pentetate
DVT	Deep venous thrombosis
EHL	Electrohydraulic lithotripsy
EKG	Electrocardiogram
EMG	Electromyogram
ESRD	End-stage renal disease
5-FU	5-fluorouracil
FSH	Follicle stimulating hormone
GFR	Glomerular filtration rate
GnRH	Gonadotropin releasing hormone
HIV	Human immuno deficiency virus
HPF	High power field
^{125}I	Iodine^{125}
ICSI	Intracytoplasmic sperm injection
I.V.	Intravenous
IVC	Inferior vena cava
IVP	Intravenous pyelogram
IRB	Institutional Review Board
KUB	Kidney, ureter, bladder
LDH	Lactate dehydrogenase
LH	Luteinizing hormone
LH-RH	Luteinizing hormone releasing hormone
LPP	Leak point pressure
LR/NS/D5W	Lactated Ringer's/Normal saline Dextrose 5% water
LUTS	Lower urinary tract symptoms
M-VAC	Methotrexate, vinblastine, Adriamycin (doxorubicin), cisplatin
MAG-3	Mercaptoacetylglycine
MIBG	Iodine-131-meta-iodobenzylguanidine
MRI	Magnetic resonance imaging
MVC	Motor vehicle collision
NPO	Nothing by mouth
NSAIDS	Nonsteroidal anti-inflammatory drugs
NSGCT	Nonseminomatous germ cell tumor
PCNL	Percutaneous nephrolithotomy
PDE-5	Phosphodiesterol inhibitor 5
PET	Positron emission tomography
PGE-1	Prostaglandin E-1
PIN	Prostatic intraepithelial neoplasia
PSA	Prostate specific antigen
PT	Prothrombin time
PTT	Partial thromboplastin time
PUV	Posterior urethral valve
PVR	Postvoid residual
QD, QHS	Dosing
XRT	Radiation therapy
RBC	Red blood cell count
RCC	Renal cell carcinoma
LR/NS/D5W	Lactated Ringer's/Normal saline Dextrose 5% water
RPLND	Retroperitoneal lymph node dissection
RTA	Renal tubular acidosis
SIADH	Syndrome of inappropriate antidiuretic hormone
SSRI	Selective serotonin reuptake inhibitors
SWL	Shock wave lithotripsy
TPN	Total parenteral nutrition
TRUS	Transrectal ultrasonography
TUIP	Transurethral incision of prostate
TUMT	Transurethral microwave therapy
TUNA	Transurethral needle ablation
TUR	Transurethral resection
TURP	Transurethral resection of prostate
TURBT	Transurethral resection of bladder tumor
UPJ	Ureteropelvic junction
UTI	Urinary tract infection
VCUG	Voiding cystourethrogram
VDRL	Venereal disease research laboratory
VEGF	Vascular endothelial growth factor
VHL	Von Hippel - Lindau
VUR	Vesicoureteral reflux
WBC	White blood cell count
XRT	Radiation therapy

Normal Laboratory Values

General Chemistry

Electrolytes

Na	135 – 145 mEq/L
K	3.5 – 5.0 mEq/L
Cl	120 – 130 mEq/L
HCO_3	22 – 26 mEq/L
Ca	8.5 – 10.5 mg/dL
PO_4	2.6 – 4.5 mg/dL

Blood Urea Nitrogen (BUN)	8 – 20 mg/dL
Creatinine	0.5 – 1.5 mg/dL
Creatinine Clearance	50 – 125 mL/min
Glucose (fasting)	70 – 100 mg/dL
Prostate Specific Antigen (PSA)	< 4 ng/mL
Serum Albumin	3.4 – 5.4 gm/dL

Acid Phosphatase	0 – 0.8 U/L
Alanine aminotransferase (SGPT)	10 – 55 U/L
Alkaline phosphatase	45 – 115 U/L
Alpha-feto protein (AFP)	0 – 10 IU/mL
Beta-hCG	0 – 10 mIU/mL
Amylase	50 – 120 U/L
Bilirubin	0 – 0.4 mg/dL
Lactate dehydrogenase (LDH)	110 – 210 U/L
Uric acid	3.6 – 8.5 mg/dL

Hemoglobin	13 – 18 g/dL
White Blood Count (WBC)	5 – 10,000/cu mm
Platelets	150 – 350,000/cu mm

Endocrine

Aldosterone	4 – 31 ng/dL
Calcitonin	0 – 28 pg/mL
Catecholamines	< 1000 ng/L
Cortisol	0 – 10 μg/dL
Epinephrine	0 – 110 pg/mL
17-Hydroxysteroids	3 – 14 mg/day
17-Ketosteroids	8 – 20 mg/day
Metanephrines	0 – 0.9 mg/day
Parathyroid Hormone (PTH)	10 – 60 pg/mL
Plasma Renin Activity (PRA)	0.5 – 1.6 ng/mL/hr
Testosterone	300 – 1000 ng/dL
Vanillylmandellic acid (VMA)	1.4 – 6.5 mg/day

Follicle Stimulating Hormone (FSH)	1 – 15 mIU/L
Luteinizing Hormone (LH)	3 – 18 mIU/L

Arterial Blood Gases

PO_2	75 – 100 mmHg
PCO_2	35 – 45 mmHg

1. A 12-year-old girl has recurrent UTIs. Physical examination is normal. An ultrasound shows a large, thickened bladder wall and bilateral hydroureteronephrosis. A VCUG demonstrates no VUR and a large PVR. The next step is:

A. MAG-3 renogram.
B. MRI scan of lumbosacral spine.
C. urethral pressure profile.
D. uroflow with EMG.
E. cystoscopy and urethral dilation.

2. An early manifestation of septic shock is:

A. bradycardia.
B. respiratory alkalosis.
C. high output renal failure.
D. decreased cardiac output.
E. decrease in plasma norepinephrine.

3. A four-year-old boy with PUV has a vesicostomy. Serum creatinine is 0.6 mg/dL. Ultrasound shows minimal hydronephrosis. Videourodynamics show a bladder capacity of 30 mL with a pressure of 14 cm H_2O when leakage occurs from the vesicostomy with no reflux. Undiversion is considered. The best management is resection of the posterior urethral valves and:

A. ileal augmentation cystoplasty.
B. ileal augmentation with appendicovesicostomy.
C. bladder cycling via the vesicostomy.
D. primary closure of the vesicostomy.
E. autoaugmentation cystoplasty.

4. Patients with VHL syndrome most frequently have:

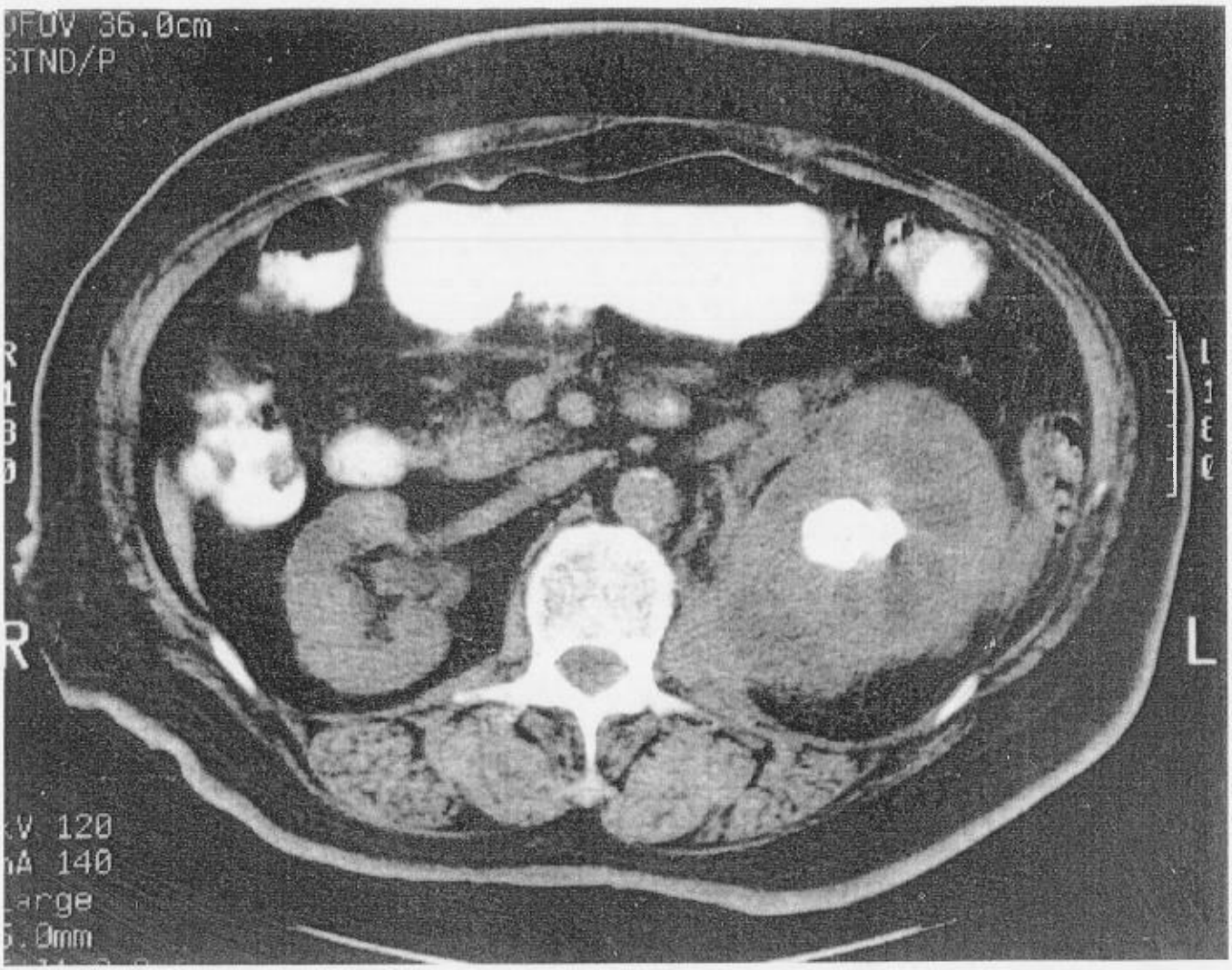
A. renal angiomyolipoma.
B. cafe-au-lait spots.
C. glioblastomas.
D. thyroid carcinoma.
E. retinal angiomas.

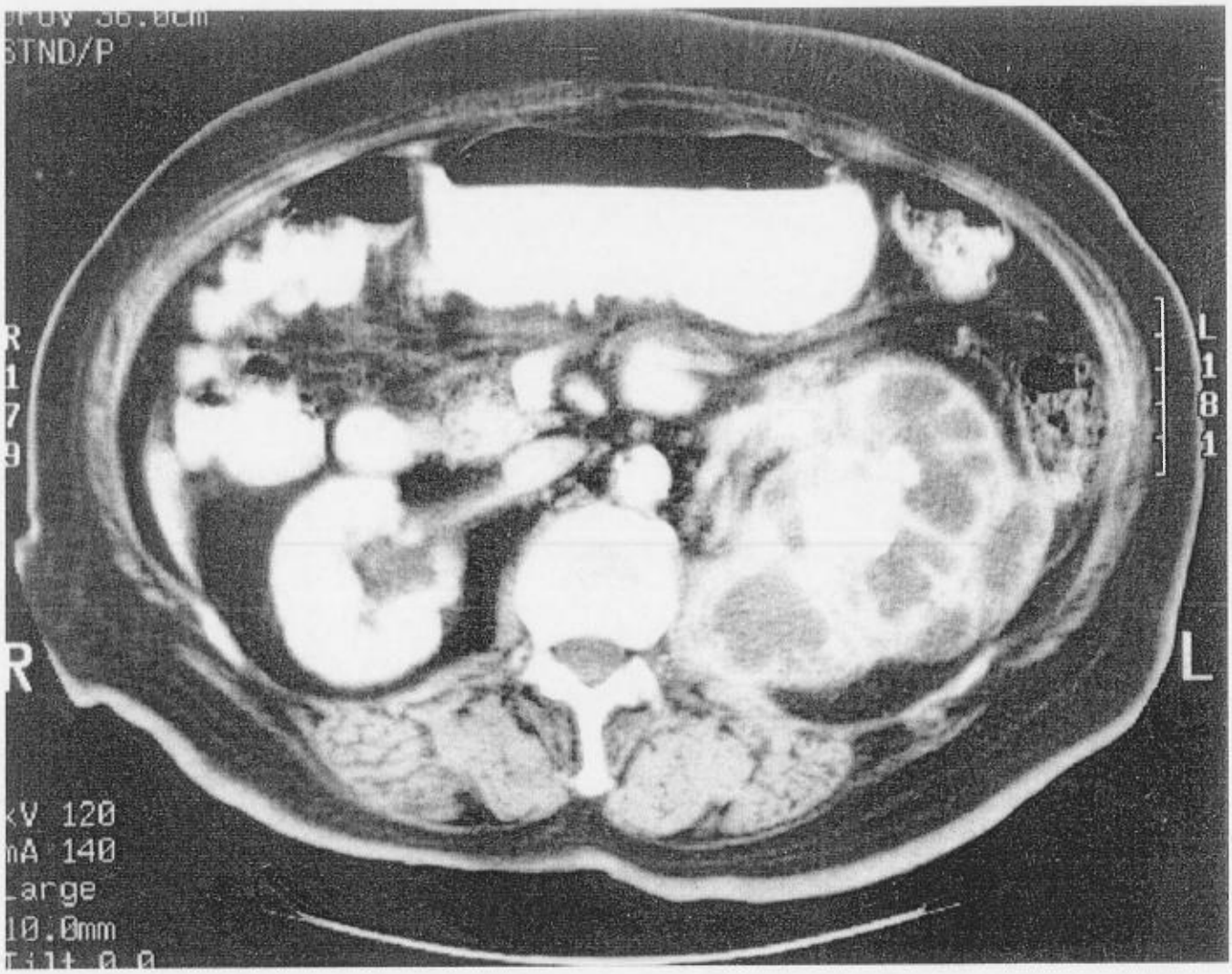
5. A 55-year-old woman on warfarin for recurrent pulmonary emboli has cystitis. The drug least likely to cause enhanced anticoagulation is:

A. tetracycline.
B. nitrofurantoin.
C. ciprofloxacin.
D. trimethoprim.
E. sulfamethoxazole.

6. A 55-year-old woman has flank pain, fever, and malaise. Her serum creatinine is 1.6 mg/dL. Abdominal CT scan is shown. The next step is:

A. long-term antibiotics.
B. percutaneous drainage.
C. PCNL.
D. nephrectomy.
E. nephroureterectomy.





7. One month after L5 laminectomy, a 30-year-old woman develops lower extremity weakness, a PVR of 300 mL, and an intermittent urinary stream. Videourodynamics demonstrates detrusor-sphincter dyssynergia. The most likely explanation is:

A. pseudodyssynergia.
B. recurrent lumbar disc herniation.
C. cauda equina syndrome.
D. undiagnosed multiple sclerosis.
E. permanent nerve injury from laminectomy.

8. A six-week-old boy was born at 27 weeks' gestation. His postnatal course has been complicated by respiratory distress, bronchopulmonary dysplasia, and a patent ductus arteriosus. He has required long-term diuretic therapy with furosemide. A KUB reveals calcifications in the mid- and upper abdominal regions consistent with bilateral renal calculi. The most likely mechanism for the formation of the stones is:

A. hypercalciuria.
B. hyperuricosuria.
C. obstructive uropathy.
D. type I RTA.
E. type II RTA.

9. The vascular supply of the omentum is most reliably based upon which artery:

A. splenic.
B. gastroduodenal.
C. right gastroepiploic.
D. short gastric.
E. left gastroepiploic.

10. Calcium reabsorption induced by parathyroid hormone and Vitamin D occurs primarily in the:

A. proximal convoluted tubule.
B. cortical collecting tubule.
C. medullary collecting tubule.
D. distal tubule.
E. thin descending limb of Henle.

11. A 39-year-old woman has dysuria and frequency. Urinalysis shows 30 WBC/hpf and midstream urine culture shows 10^3 CFU/mL coagulase-negative Staphylococci. The next step is:

A. phenazopyridine.
B. repeat midstream culture.
C. urine culture for mycobacteria.
D. antimicrobial therapy.
E. catheterized urine culture.

12. A 48-year-old man undergoes radical cystectomy with a Studer orthotopic neobladder. Three months postoperatively, he has urinary frequency and day and nighttime incontinence. A videourodynamic study (image shown) demonstrates a capacity of 300 mL, detrusor pressure at capacity is 10 cm H_2O, Valsalva LPP is 130 cm H_2O, and PVR is 75 mL. The next step is:

A. observation.
B. alpha-blocker therapy.
C. CIC every two to three hours.
D. placement of an artificial urinary sphincter.
E. augmentation of his orthotopic diversion.

13. A 14-year-old girl has primary amenorrhea. She is in the 25th percentile for height and has a webbed neck. Her karyotype is 45,XO. The most likely genitourinary abnormality is:

A. renal agenesis.
B. horseshoe kidney.
C. VUR.
D. UPJ obstruction.
E. vaginal agenesis.

14. A 58-year-old man has incontinence one year following radical prostatectomy. Urodynamic evaluation demonstrates normal bladder capacity and no detrusor overactivity. At 250 mL, Valsalva maneuver increases bladder pressure to 150 cm H_2O without evidence of urine leakage. The next step is:

A. remove catheter and repeat Valsalva maneuver.
B. repeat urodynamic study with suprapubic catheter.
C. uroflowmetry.
D. retrograde urethrogram.
E. cystoscopy.

15. A 28-year-old man with Kallmann syndrome is treated with hCG and FSH injections over two years. His serum testosterone and FSH levels are normal. His semen volume is 1.0 mL, sperm count is six million sperm/mL, and sperm motility is 90%. Well-timed sexual intercourse has not resulted in pregnancy for his wife, whose evaluation is normal. The next step is:

A. intrauterine insemination.
B. color Doppler scrotal ultrasound.
C. ICSI.
D. TRUS.
E. testis biopsy.

16. The parameter that most accurately measures renal function in a patient with an ileal conduit is:

A. creatinine clearance.
B. urinary concentrating ability.
C. fractional excretion of sodium.
D. acid loading.
E. proteinuria.

17. A four-year-old boy has renal failure due to membranoproliferative glomerulonephritis. He has undergone a bilateral orchiopexy and proximal hypospadias repair as an infant. He is at greatest risk for development of:

A. gonadoblastoma.
B. NSGCT.
C. Sertoli cell tumor.
D. Wilms' tumor.
E. RCC.

18. A six-year-old boy with left scrotal pain has a tender indurated epididymis and normal testes. Urinalysis is normal. An ultrasound shows normal testes with Doppler evidence of blood flow, an enlarged, hypervascular left epididymis, and normal kidneys. The next step is:

A. scrotal exploration.
B. radionuclide testicular scan.
C. VCUG.
D. oral antibiotic therapy.
E. NSAIDS.

19. A three-year-old boy lost one-half of his scrotal skin after a dog attack two hours ago. His testicles, penis, and urethra are spared. The next steps are tetanus immunization, antibiotics, debridement, and:

A. split-thickness skin graft.
B. full-thickness skin graft.
C. placement of testicles in the thigh.
D. scrotal closure with drainage.
E. secondary scrotal closure.

20. In a unilateral partially obstructed kidney, the aspect of renal function that is usually preserved is:

A. urinary concentration.
B. urinary dilution.
C. ammonia excretion.
D. potassium reabsorption.
E. sodium reabsorption.

21. A 23-year-old man underwent left transscrotal orchiectomy demonstrating a mixed NSGCT (70% embryonal carcinoma, 30% seminoma) with lymphovascular invasion. Tumor markers and metastatic evaluation are negative. In addition to RPLND and excision of the left spermatic cord and left scrotal scar, treatment should include:

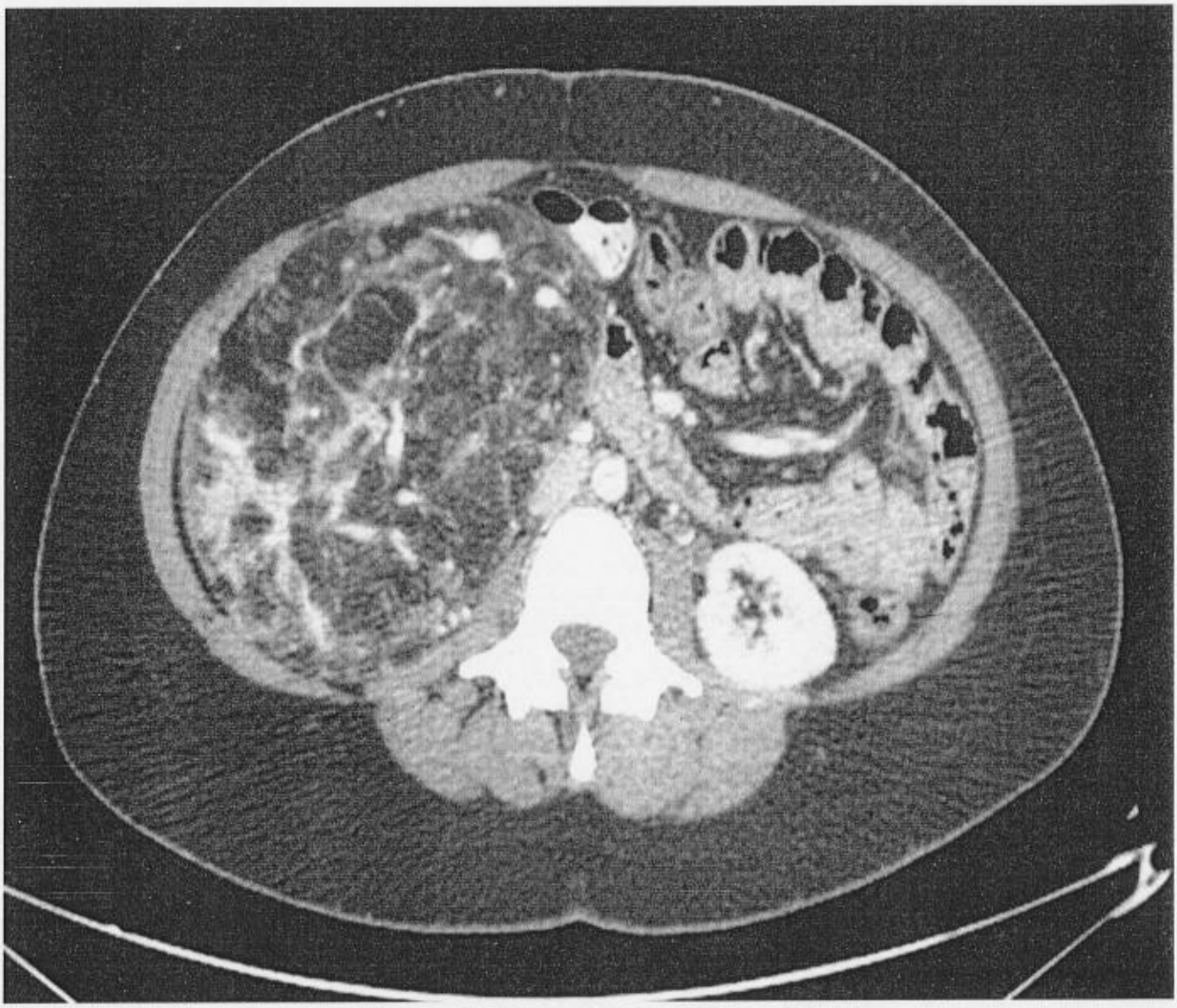
A. observation.
B. chemotherapy.
C. left inguinal sentinel lymph node biopsy.
D. left superficial inguinal lymph node dissection.
E. XRT to left hemiscrotum and left inguinal lymph nodes.

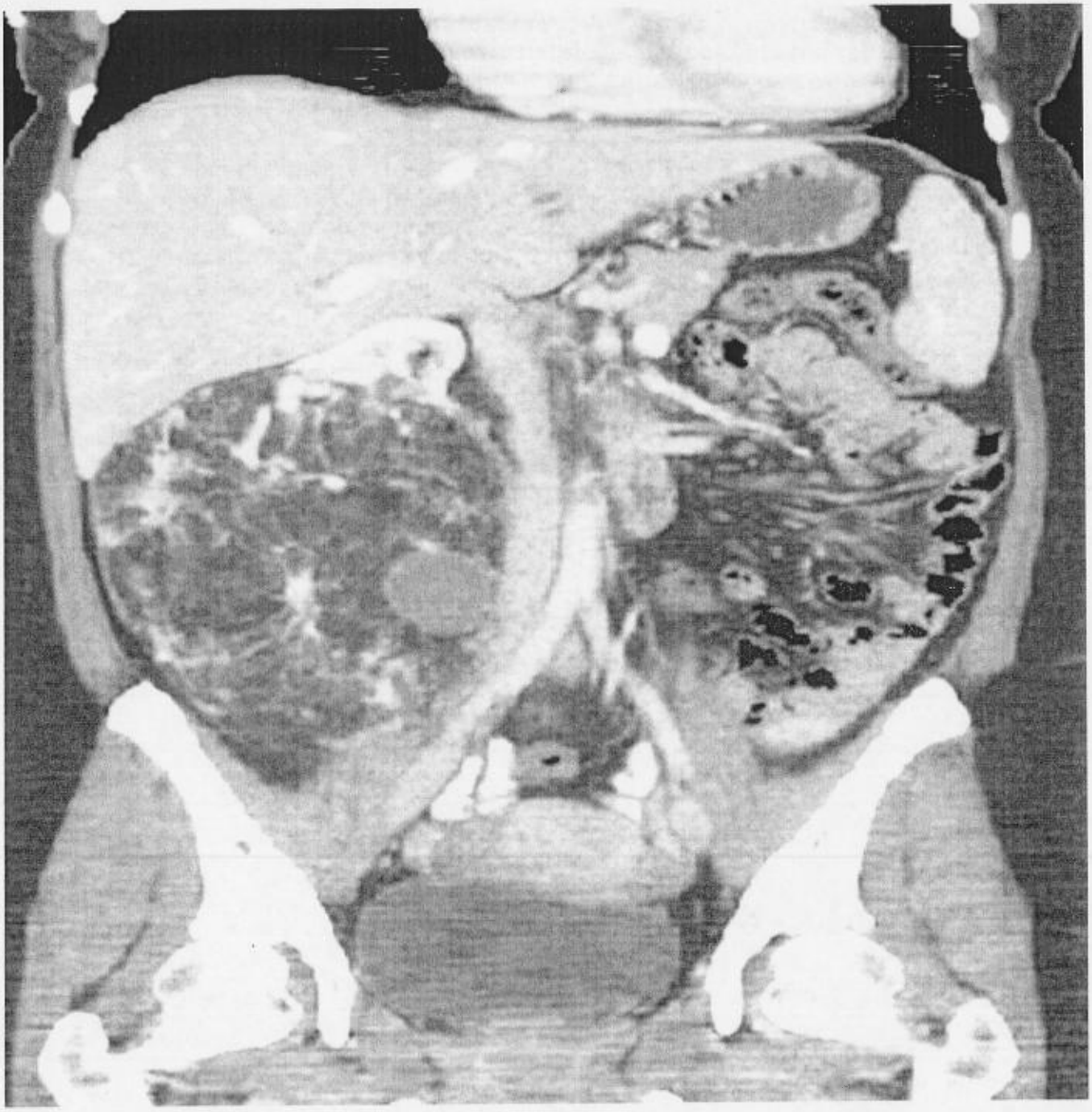
22. A 45-year-old man with a history of recurrent UTIs has two days of perineal discomfort, dysuria, and urinary frequency. Urinalysis reveals bacteriuria and pyuria. Physical examination reveals an enlarged prostate. He finished his last course of antibiotics one week ago. Before antibiotic treatment is restarted, the culture that should be obtained is:

A. midstream urine.
B. urine by suprapubic aspiration.
C. expressed prostatic fluid.
D. pre- and post-prostatic massage voided urine and prostatic fluid.
E. initial voided urine.

23. A 23-year-old asymptomatic woman has a palpable right-sided abdominal mass with serum creatinine of 0.9 mg/dL. CT scan is shown. The next step is:

A. follow-up CT scan in three months.
B. CT-guided biopsy.
C. angioembolization.
D. right nephrectomy.
E. neoadjuvant XRT followed by radical nephrectomy.





24. The stone composition most resistant to fragmentation by SWL is:

A. uric acid.
B. struvite.
C. calcium oxalate dihydrate.
D. brushite.
E. hydroxyapatite.

25. A 72-year-old woman has had six symptomatic UTIs over the past year. These infections return shortly after antimicrobial courses are concluded, and cultures have demonstrated significant colony counts of E. coli. Renal ultrasound is normal. The next step is:

A. ciprofloxacin prophylaxis.
B. nitrofurantoin prophylaxis.
C. oral low dose estrogen.
D. intravaginal estrogen.
E. lactobacillus.

26. A 60-year-old man with erectile dysfunction has an nonpalpable right testicle. Ultrasound reveals a 2 x 2 cm homogeneous ovoid mass at the right internal ring. The next step is:

A. observation.
B. hCG therapy.
C. percutaneous biopsy.
D. orchidopexy.
E. orchiectomy.

27. A 24-year-old paraplegic man manages his bladder with CIC. At a routine office visit, he has pyuria and bacteriuria. The strongest indication for antimicrobial therapy is:

A. > 10 WBC/hpf on urinalysis.
B. > 100,000 CFU/mL on urine culture.
C. increased urinary leakage between catheterizations.
D. presence of MRSA in urine.
E. malodorous urine.

28. A 45-year-old obese man with untreated sleep apnea develops nocturnal enuresis. He has no daytime incontinence. Physical examination is unremarkable except for mild lower extremity edema. Urinalysis is negative, and his PVR is 30 mL. The most likely etiology of the enuresis is:

A. increased secretion of ADH.
B. increased secretion of atrial natriuretic peptide.
C. detrusor overactivity.
D. mobilization of lower extremity edema.
E. hypercarbia induced drowsiness.

29. A 43-year-old woman has a 3 cm vesicovaginal fistula on the posterior bladder wall, 2 cm above the trigone, three years following pelvic XRT for cervical cancer. CT urogram demonstrates normal upper urinary tracts without evidence of recurrent disease. The next step is:

A. bladder biopsy.
B. bilateral percutaneous nephrostomies.
C. injection of fibrin glue.
D. transvaginal repair with gracilis interposition.
E. transabdominal repair with omental interposition.

30. A 30-year-old woman received a renal transplant two years ago. Her creatinine is 1.1 mg/dL and she has no proteinuria. She is planning a pregnancy and should be advised:

A. to proceed.
B. that a Cesarean section delivery will be required.
C. that a late delivery is expected.
D. that there is a greater risk of birth defects.
E. to reduce immunosuppression during pregnancy.

31. The intracavernosal administration of phenylephrine may cause:

A. hypotension and tachycardia.
B. hypotension and bradycardia.
C. supraventricular arrhythmia.
D. hypertension and tachycardia.
E. hypertension and bradycardia.

32. A 72-year-old man develops dyspnea and hypertension following adrenal-sparing nephrectomy. The preoperative CT scan shows aortic and renal artery calcification. A ventilation perfusion scan shows a low probability of pulmonary emboli. The best agent to treat the hypertension is a(n):

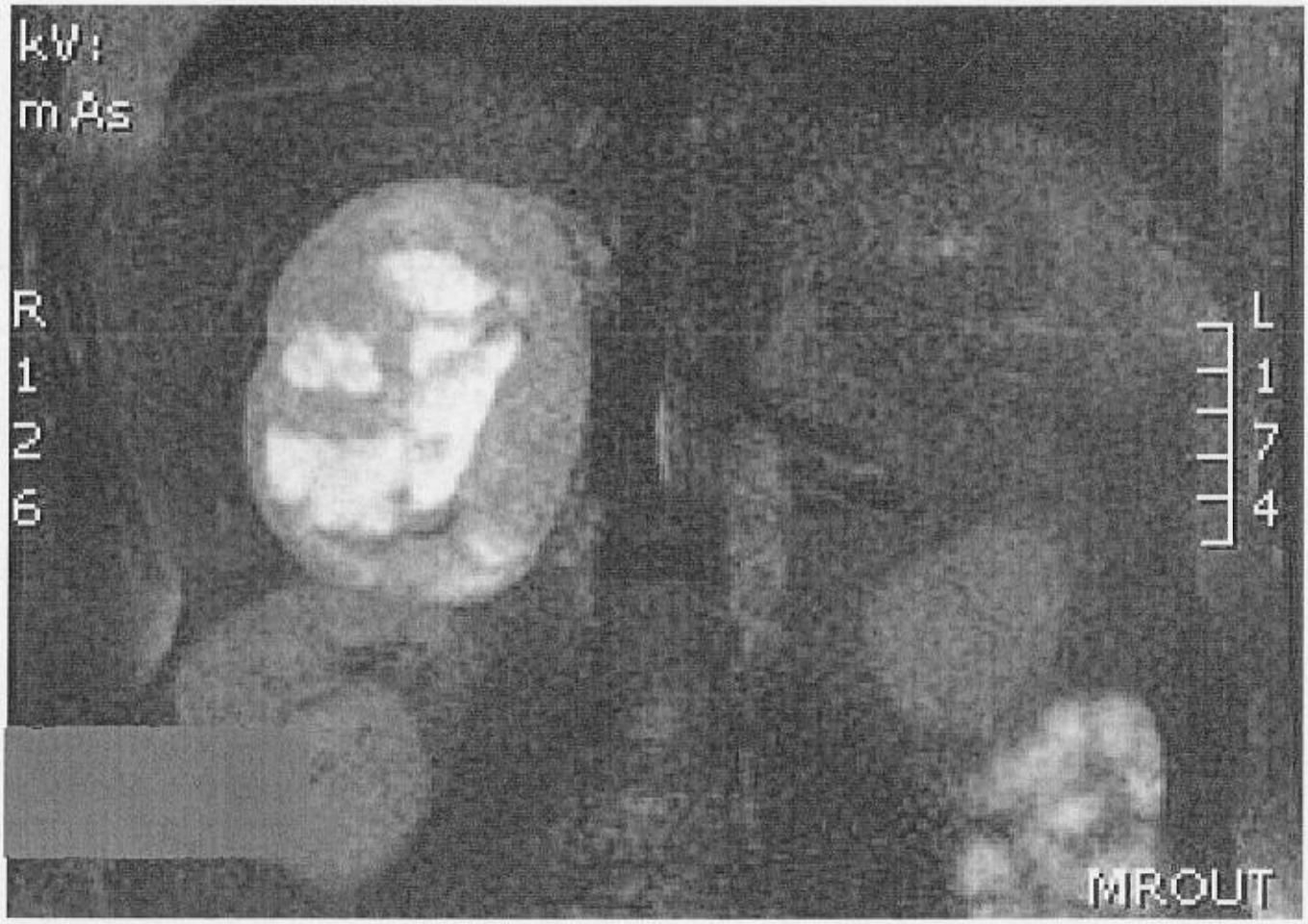
A. diuretic.
B. calcium channel blocker.
C. alpha-blocker.
D. ACE inhibitor.
E. angiotensin receptor blocker.

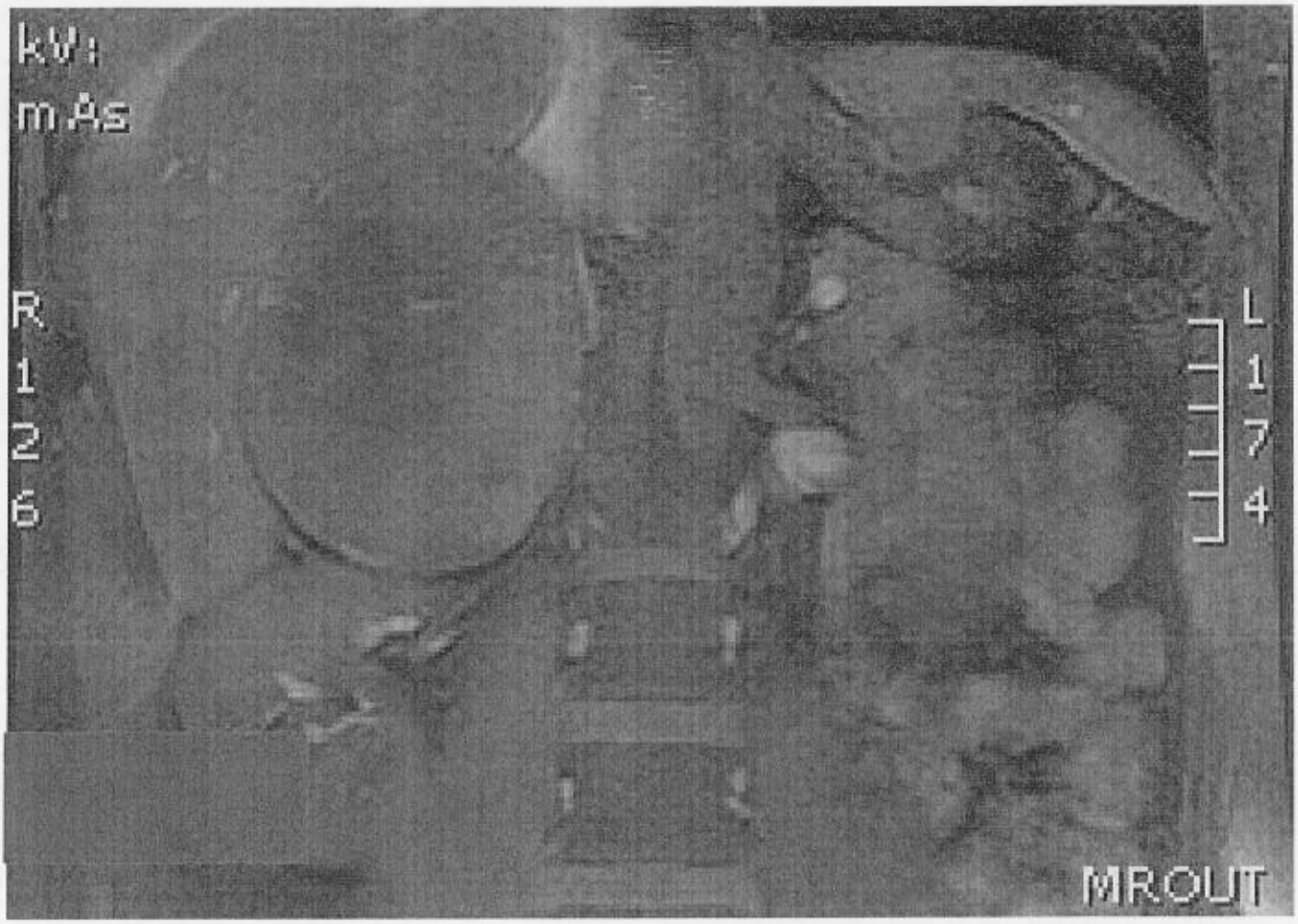
33. Unilateral renal agenesis is associated with an increased incidence of:

A. ipsilateral anorchia.
B. two vessel umbilical cord.
C. ipsilateral adrenal agenesis.
D. Müllerian duct abnormalities.
E. urethral anomaly.

34. A 63-year-old woman with unexplained weight loss has a negative endocrine evaluation and the MRI images shown. The next step is:

A. needle biopsy.
B. abdominal CT scan with contrast washout.
C. chest CT scan.
D. adrenalectomy.
E. radical nephrectomy with adrenalectomy.





35. A 32-year-old woman with a T5 spinal cord injury develops profuse sweating, hypertension, and bradycardia during urodynamic evaluation. The bladder is emptied but her symptoms persist with a blood pressure of 170/100 mmHg. The next step is to administer:

A. oral nifedipine.
B. sublingual nifedipine.
C. transdermal nitroglycerin.
D. I.V. atropine.
E. I.V. hydralazine.

36. A 32-year-old man desires a biological child. Both testes are 4 cm long and soft. Two semen analyses reveal azoospermia with volumes of 3.0 mL and 3.1 mL. Testosterone is 280 ng/dL, LH is 7.5 IU/L, and FSH is 8.5 IU/L. The next step is:

A. repeat semen analysis.
B. clomiphene citrate.
C. beta-hCG and recombinant FSH.
D. testis biopsy.
E. epididymovasostomy.

37. During a left laparoscopic pyeloplasty, the inferior mesenteric artery is accidentally ligated. Blood supply to the left colon will be primarily maintained by the:

A. left colic artery.
B. left colic artery and inferior hemorrhoidal arteries.
C. middle colic artery and superior hemorrhoidal arteries.
D. marginal artery and superior hemorrhoidal arteries.
E. middle colic and middle hemorrhoidal arteries.

38. A 31-year-old man sustains complete scrotal skin avulsion from a machinery accident. The skin is placed in ice saline and transported to the hospital with the patient. The next step is:

A. saline wet to dry dressings and delayed grafting.
B. reapplication of avulsed skin as a full thickness skin graft.
C. immediate split thickness skin grafting to the scrotum.
D. bilateral testicular thigh pouch creation.
E. thigh flap reconstruction of scrotum.

39. A 49-year-old man with diabetes and hypertension has an 8 cm solid renal mass. Preoperative cardiac angiography reveals a 90% occlusion of the right coronary artery and he undergoes bare metal stenting across the blockage. The minimum delay before surgery is:

A. two weeks.
B. four weeks.
C. three months.
D. six months.
E. 12 months.

40. A 72-year-old man with a large RCC has right hip pain. Bone scan shows multiple metastases and plain films of the right femur show a 4.0 cm lytic cortical lesion. The next step is:

A. XRT to the femur.
B. strontium-89.
C. open stabilization of the femur.
D. pazopanib.
E. ipilimumab and nivolumab.

41. A 67-year-old man underwent radical prostatectomy with pelvic lymph node dissection following three months of LH-RH agonist therapy. The pathologist will not be able to accurately describe:

A. tumor volume.
B. tumor stage.
C. nodal status.
D. Gleason score.
E. surgical margins.

42. The best treatment for a symptomatic 4 mm proximal submucosal ureteral stone fragment is:

A. stent placement.
B. SWL.
C. laparoscopic excision of the stone.
D. laser excision and stent placement.
E. ureteral reconstruction with buccal mucosa graft.

43. A five-year-old girl is wet within the first few minutes after voiding. She has mild perineal erythema. The next step is:

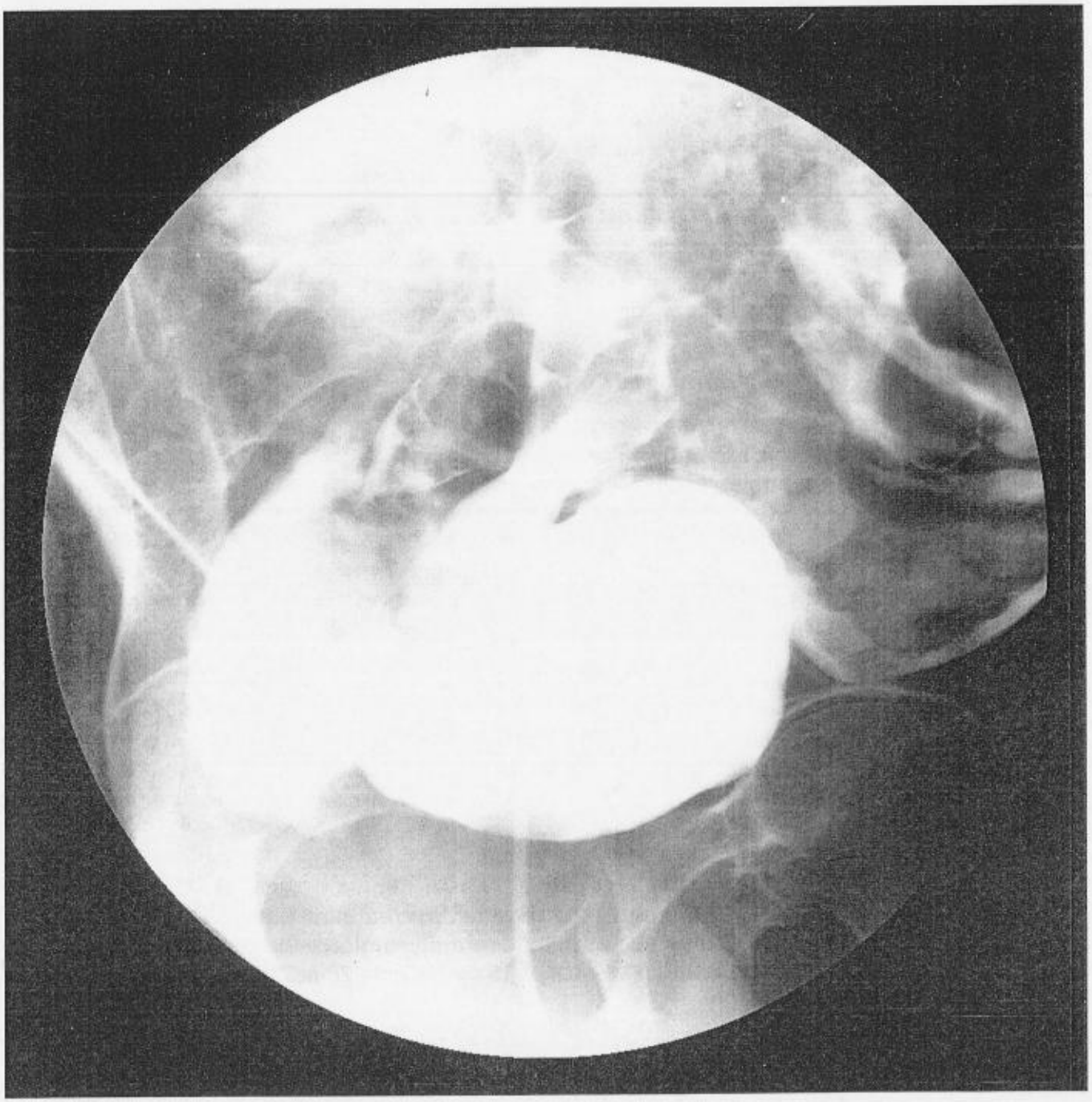
A. repositioning on the toilet.
B. use a timer to assure five minutes on toilet.
C. uroflow and PVR.
D. oxybutynin and timed voiding.
E. VCUG.

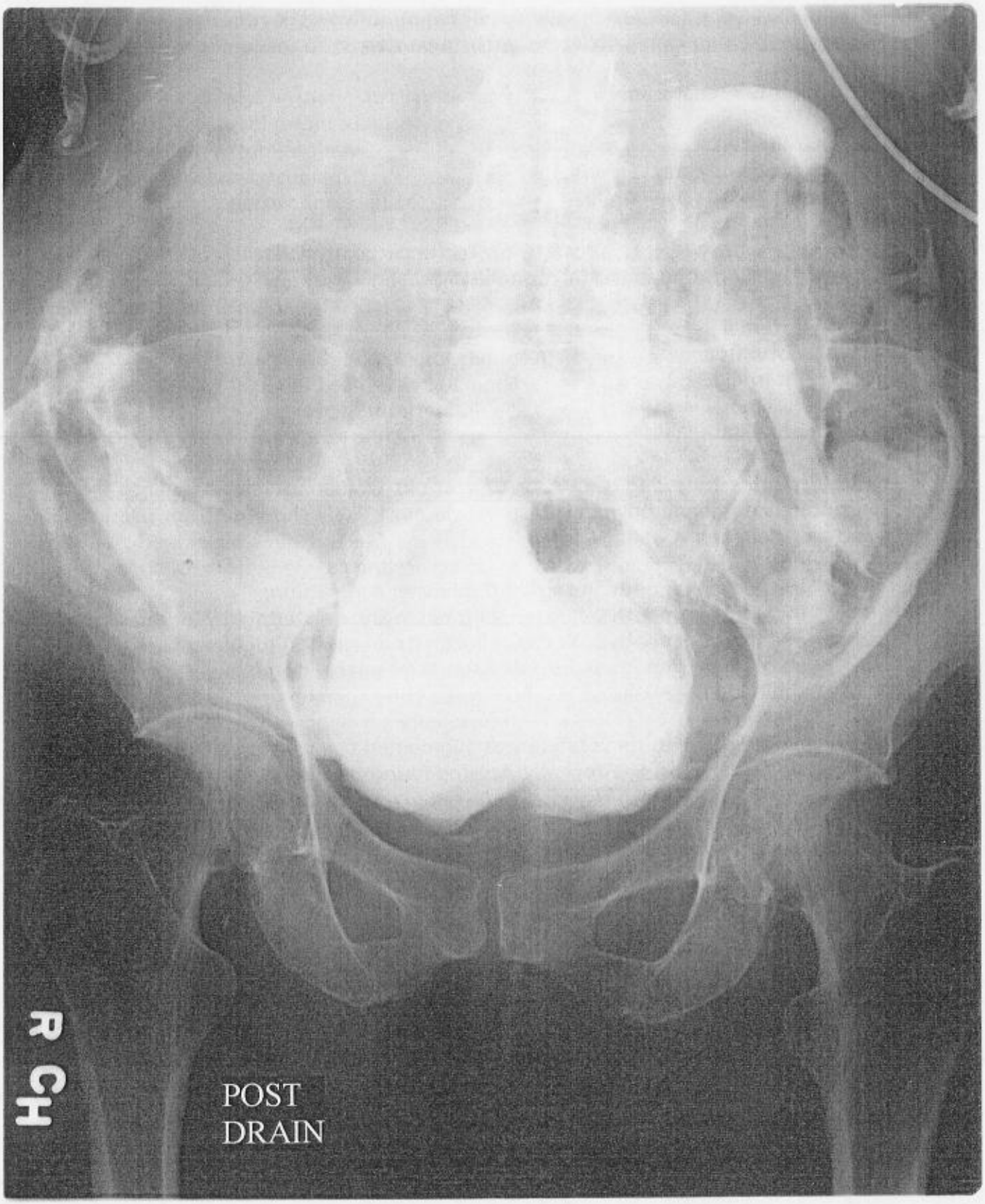
44. A six-year-old asymptomatic boy with PUV had neonatal valve ablation. He has worsening bilateral hydronephrosis and his serum creatinine has increased from 0.6 to 1.0 mg/dL over the past nine months. Videourodynamics reveal no VUR or evidence of residual valves, and filling pressures of 15 cm H_2O at 220 mL and 32 cm H_2O at 280 mL. The next step is:

A. voiding diary.
B. antimuscarinic.
C. alpha-blocker.
D. nocturnal indwelling catheter.
E. initiate CIC every four hours.

45. A 77-year-old woman undergoing TURBT for multiple papillary tumors has fat near the trigone and left ureteral orifice in an area of deep resection. She has abdominal distension and intraoperative cystogram is shown. The next step is:

A. complete TURBT.
B. terminate procedure and place 22 Fr catheter.
C. left ureteral stent.
D. percutaneous drain.
E. exploratory laparotomy.





46. A four-year-old girl voids normally but is continuously wet. A renal ultrasound shows normal-appearing kidneys bilaterally. The next step is:

A. MAG-3 renal scan.
B. VCUG.
C. MRI scan.
D. cystoscopy and vaginoscopy.
E. retrograde pyelogram.

47. In a man with high risk prostate cancer undergoing radical prostatectomy, the primary landing zone for nodal metastases is:

A. external iliac.
B. obturator.
C. internal iliac.
D. common iliac.
E. presacral.

48. Three months following a CVA, a 67-year-old woman develops urgency urinary incontinence. Videourodynamic testing will most likely show detrusor overactivity and simultaneous:

A. involuntary smooth and striated sphincter contraction.
B. involuntary smooth sphincter contraction and striated sphincter relaxation.
C. involuntary smooth sphincter relaxation and striated sphincter contraction.
D. involuntary smooth and striated sphincter relaxation.
E. sphincter bradykinesia.

49. A 13-year-old girl with spina bifida was augmented five years ago and is on CIC and antibiotic prophylaxis. She recently developed incontinence and has had two UTIs. The next step is:

A. change antibiotic prophylaxis.
B. instill antibiotics into bladder during CIC.
C. observe CIC technique and obtain catheterization diary.
D. bladder ultrasound.
E. videourodynamic evaluation.

50. A 60-year-old healthy woman with recurrent UTIs has free air in the bladder and a thickened bladder wall adjacent to a loop of thickened colon seen on CT scan. Cystoscopy demonstrates erythema in the bladder wall with no clear fistula. The next step is:

A. antibiotic suppression.
B. cystogram.
C. CT scan with small bowel follow through.
D. MRI scan.
E. general surgery consult/exploratory laparotomy.

51. A 33-year-old man with history of depression treated with a monoamine oxidase inhibitor complains of premature ejaculation. The recommended treatment is:

A. topical anesthetic spray prior to coitus.
B. tramadol prior to coitus.
C. daily clomipramine.
D. daily sertraline.
E. daily paroxetine.

52. A 60-year-old man is referred by his internist for evaluation of an elevated PSA. He has no voiding symptoms and his DRE is normal. The laboratory results are not in your chart. You should:

A. call the internist and ask for the results.
B. ask the patient to reschedule and return with his results.
C. obtain a release of information and fax to the internist's office.
D. assure that the patient signed a protected health information form at registration.
E. draw a PSA.

53. A 47-year-old man has a 3 cm hyperechoic renal lesion on ultrasound. The MRI sequence most likely to confirm the diagnosis of angiomyolipoma is:

A. T1-weighted image without gadolinium.
B. T1-weighted image with gadolinium enhancement.
C. T2-weighted image with fat suppression.
D. T2-weighted image with gadolinium enhancement.
E. magnetic resonance angiography.

54. A 72-year-old woman has urgency urinary incontinence. Examination demonstrates minimal prolapse, no leakage with cough, and vaginal atrophy. In addition to timed voiding and dietary modification, the next step is:

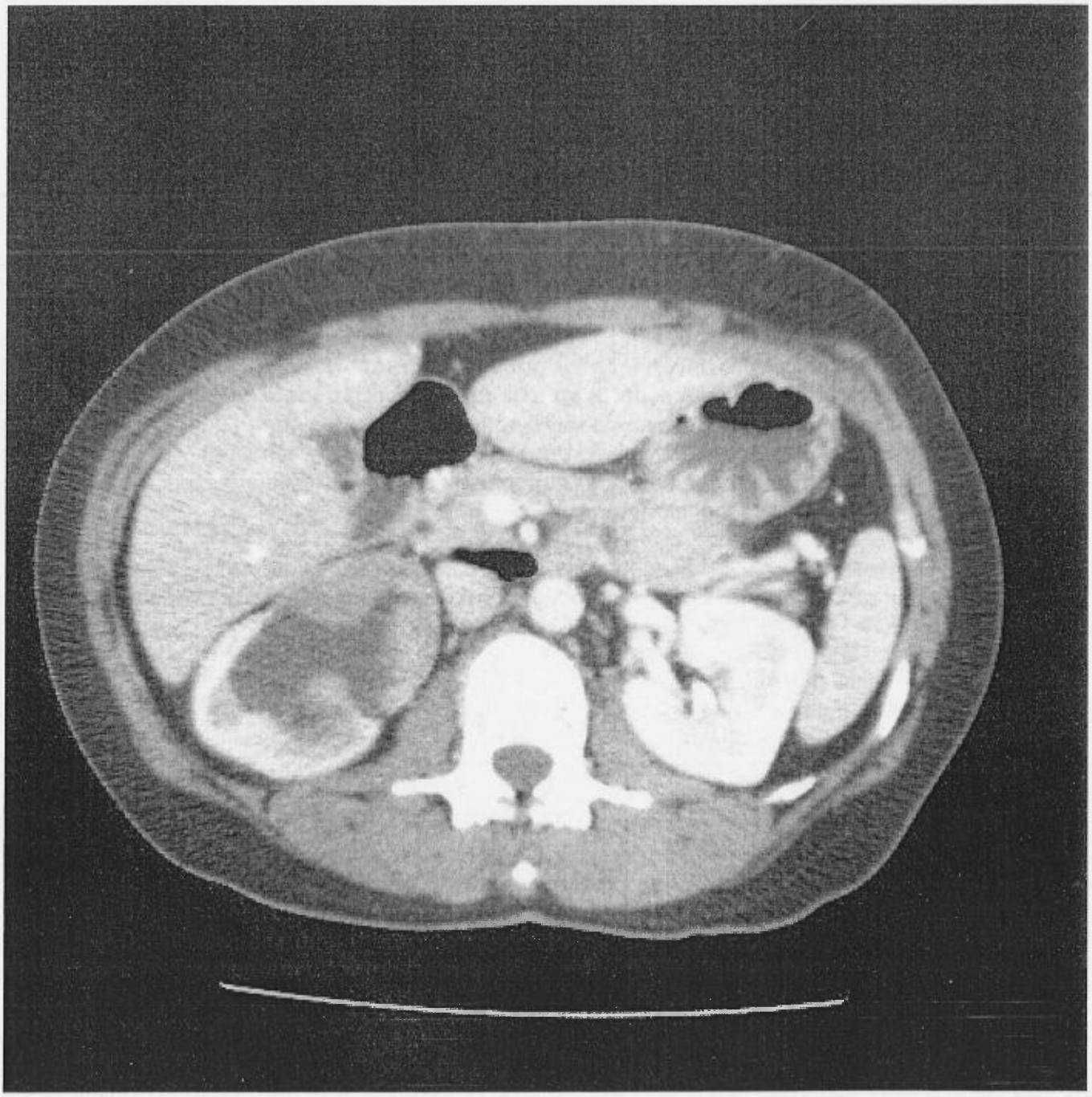
A. pelvic floor muscle training.
B. vaginal estrogen.
C. oral estrogen.
D. duloxetine.
E. periurethral injection.

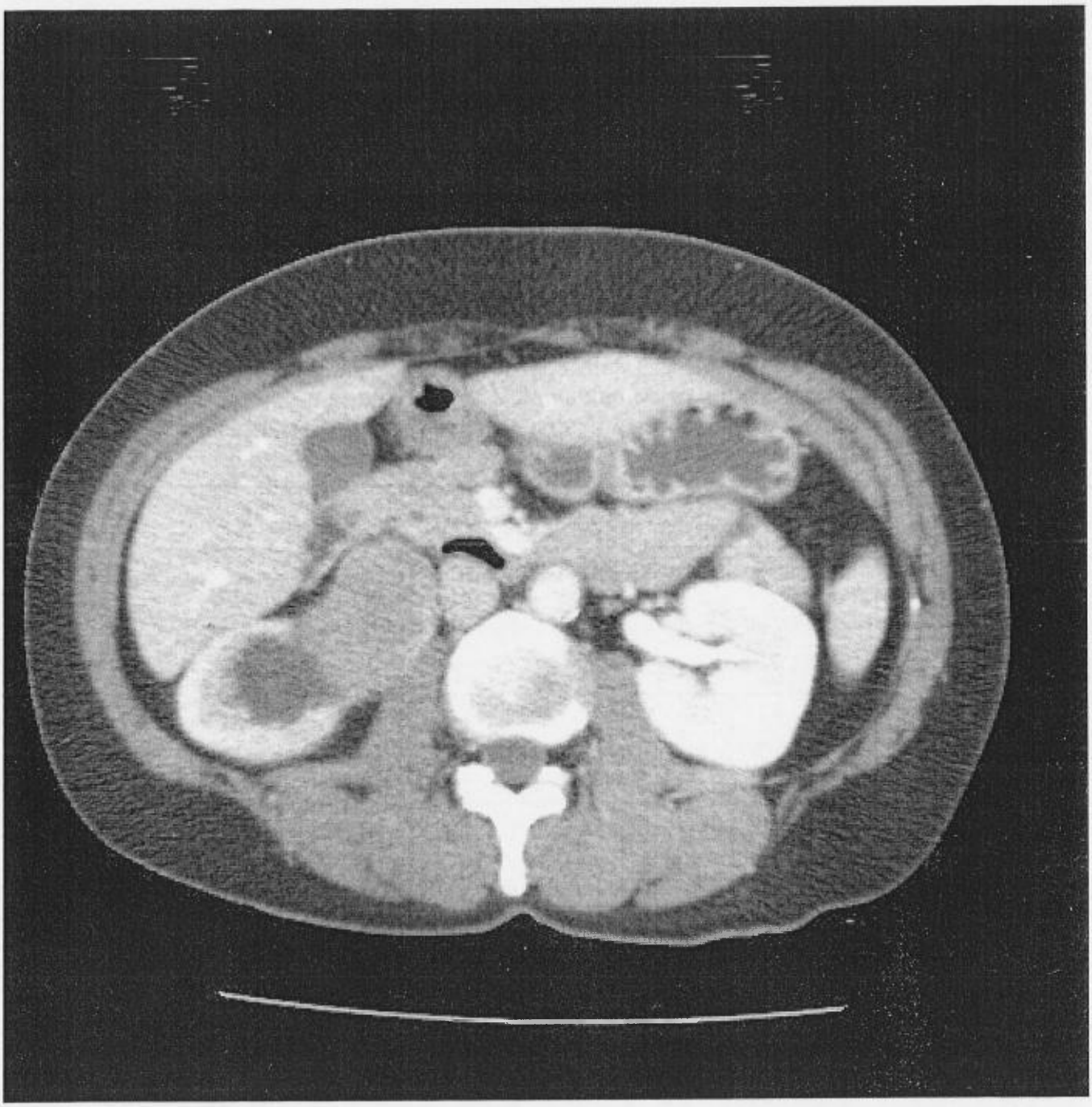
55. A 27-year-old man with a C5 spinal cord injury has recurrent problems with sediment and clogging of his indwelling urethral catheter despite frequent catheter changes. The next step is:

A. urine culture to identify urease producing organism.
B. daily acetic acid irrigation.
C. placement of a large lumen suprapubic tube.
D. non-contrast CT scan.
E. cystoscopy.

56. A 55-year-old woman with a history of ovarian cancer is evaluated for gross hematuria. She has a family history of intestinal cancer. CT scan is shown. Genetic testing is most likely to reveal a mutation in:

A. BRCA1.
B. MSH2.
C. PTEN.
D. TP53.
E. VHL.





57. A 65-year-old man has symptoms of cystitis, left flank pain, and fever to 39° C. Urinalysis reveals pyuria and culture shows a pan-sensitive E. coli. One month after appropriate antimicrobial therapy, he is asymptomatic and repeat urinalysis and mid-stream culture are negative. PVR is 45 mL. The next step is:

A. observation.
B. complete urodynamic studies.
C. prostatic localization cultures.
D. trimethoprim/sulfamethoxazole prophylaxis.
E. CT urogram and cystoscopy.

58. Two years after mid-urethral synthetic sling, pelvic examination of a 75-year-old woman reveals extrusion of a small amount of mesh along her anterior vaginal wall. She is continent and denies any other urinary or vaginal complaints. She is not sexually active. Urinalysis is normal. The next step is:

A. observation.
B. removal of extruded mesh.
C. removal of entire mid-urethral sling.
D. oral estrogen.
E. removal of exposed mesh and simultaneous sling replacement.

59. Erythropoiesis is stimulated by:

A. hypoxia.
B. increased serum CO_2.
C. cardiac erythropoietin production.
D. decreased afferent arteriolar pressure.
E. stimulation of renal medullary collecting duct cells.

60. In primary hyperaldosteronism, most patients have:

A. hypokalemia.
B. hypernatremia.
C. increased angiotensin II levels.
D. decreased renin levels.
E. significant volume expansion (> 1.5 kg).

61. An MRI scan of the head (1.5-Tesla) is recommended for a 44-year-old woman with an InterStim II sacral nerve stimulator. The next step is:

A. tell the patient she cannot have the MRI scan.
B. proceed with MRI scan with neurostimulator turned off.
C. proceed with MRI scan after the magnet switch has been disabled.
D. proceed with MRI scan after removal of lead.
E. proceed with MRI scan following removal of lead and generator.

62. Following PCNL for recurrent calcium-based stone disease, a 3 mm residual fragment is seen in a lower pole calyx on ultrasound. The next step is:

A. observation.
B. 24-hour urine.
C. stone protocol CT scan.
D. ureteroscopy.
E. SWL.

63. A 34-year-old man with sickle cell trait and hypertension has recurrent erections lasting two to three hours. He has tried oral sildenafil and baclofen with no improvement. He wishes to remain sexually active. The next step is:

A. oral pseudoephedrine.
B. oral estrogen.
C. oral bicalutamide.
D. daily intracavernous phenylephrine.
E. penile implant.

64. A transperitoneal exposure of the right renal hilum requires mobilization of the:

A. stomach.
B. duodenum.
C. hepatocolic ligament.
D. superior mesenteric artery.
E. inferior mesenteric vein.

65. A 58-year-old man is treated with brachytherapy for a T1c, Gleason 7 (4+3) prostate cancer. His pre-treatment PSA was 9 ng/mL. His PSA nadir at two years is 1.0 ng/mL, and his PSA subsequently rises to 4.5 ng/mL over the next year. The factor most predictive of prostate cancer mortality is:

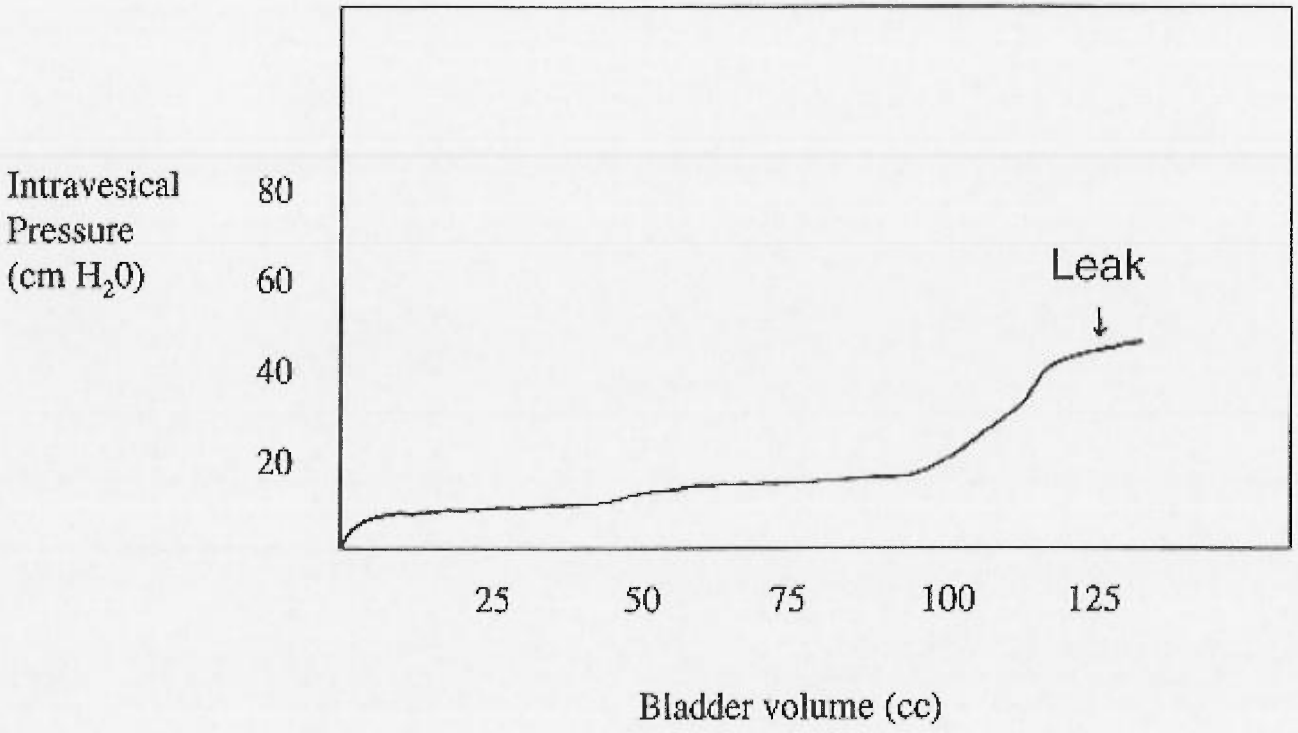
A. PSA nadir.
B. pre-treatment PSA.
C. PSA doubling time.
D. primary Gleason pattern.
E. time interval to recurrence.

66. Four years after successful placement of a sacral neuromodulation device, a 45-year-old woman has recurrence of her voiding symptoms. Interrogation of the device reveals an abnormal impedance in one of four electrodes on the lead and a battery life of eight months. The next step is:

A. add mirabegron.
B. re-program device.
C. place new lead.
D. replace entire device.
E. intradetrusor onabotulinumtoxinA.

67. A one-year-old girl with spina bifida has new onset grade 2 hydronephrosis. VCUG demonstrates bilateral grade 4 VUR. CMG is shown. The next step is prophylactic antibiotics and:

A. observation.
B. oxybutynin.
C. CIC.
D. intradetrusor onabotulinumtoxinA.
E. bilateral ureteral reimplant.



68. A 55-year-old healthy man diagnosed with prostate cancer is considering active surveillance. His PSA is 9 ng/mL and his prostate volume is 45 mL with normal DRE. Two of 12 biopsy cores are positive, with 25% of each core demonstrating Gleason 6 (3+3) prostate cancer. The factor that classifies his disease as National Comprehensive Cancer Network (NCCN) low risk as opposed to very low-risk is:

A. age.
B. number of cores with cancer.
C. PSA density.
D. PSA.
E. extent of cancer on biopsy.

69. Neurons in Onuf's nucleus are responsible for:

A. bladder sensation.
B. bladder relaxation.
C. bladder contraction.
D. internal sphincter contraction.
E. external sphincter contraction.

70. According to the 2013 AUA Guideline on follow-up for clinically localized renal neoplasms, the recommended surveillance for a pT2NxMx RCC after nephrectomy includes:

A. annual chest x-ray only.
B. abdominal CT scan and chest x-ray at one year only.
C. annual abdominal CT scan and chest x-ray for two years.
D. abdominal CT scan and chest x-ray every six months for three years.
E. annual abdominal CT scan for five years.

71. A 52-year-old woman has bothersome urinary frequency and urgency incontinence. Examination reveals stage 1 anterior vaginal wall prolapse and loss of urine with cough. Urinalysis and PVR are normal. The next step is:

A. behavioral modification and antimuscarinics.
B. transurethral bulking agent.
C. mid-urethral sling.
D. cystocele repair.
E. mid-urethral sling and cystocele repair.

72. During transabdominal exploration for left renal trauma, a large hematoma obscures the aorta. The best anatomic landmark to gain primary control of the renal vessels is the:

A. inferior mesenteric artery.
B. inferior mesenteric vein.
C. left renal vein.
D. superior mesenteric artery.
E. superior mesenteric vein.

73. Optimization of intravesical mitomycin C administration includes:

A. antibiotic prophylaxis.
B. NSAIDS.
C. urinary alkalinization.
D. hydration.
E. antimuscarinics.

74. The optimal flap to use during transvaginal repair of an apical, post-hysterectomy vesicovaginal fistula high in the vaginal vault is:

A. peritoneal.
B. Martius, based on the posterior labial artery.
C. Martius, based on the external pudendal artery.
D. greater omentum, based on the right gastroepiploic artery.
E. greater omentum, based on the left gastroepiploic artery.

75. A ten-year-old girl undergoes uncomplicated bilateral ureteral reimplantation for VUR with recurring febrile UTIs. She is treated for C. difficile colitis with oral metronidazole after surgery. Two weeks later, she has fever and abdominal pain. WBC is 20,000/cu mm, and serum creatinine 1.7 mg/dL. Renal ultrasound is normal. The next step is:

A. oral vancomycin.
B. I.V. metronidazole.
C. oral vancomycin and I.V. metronidazole.
D. stool transplant.
E. rectal instillation of vancomycin.

76. During mid-urethral sling placement, profuse vaginal bleeding is noted after suprapubic trocar passage. The next step is:

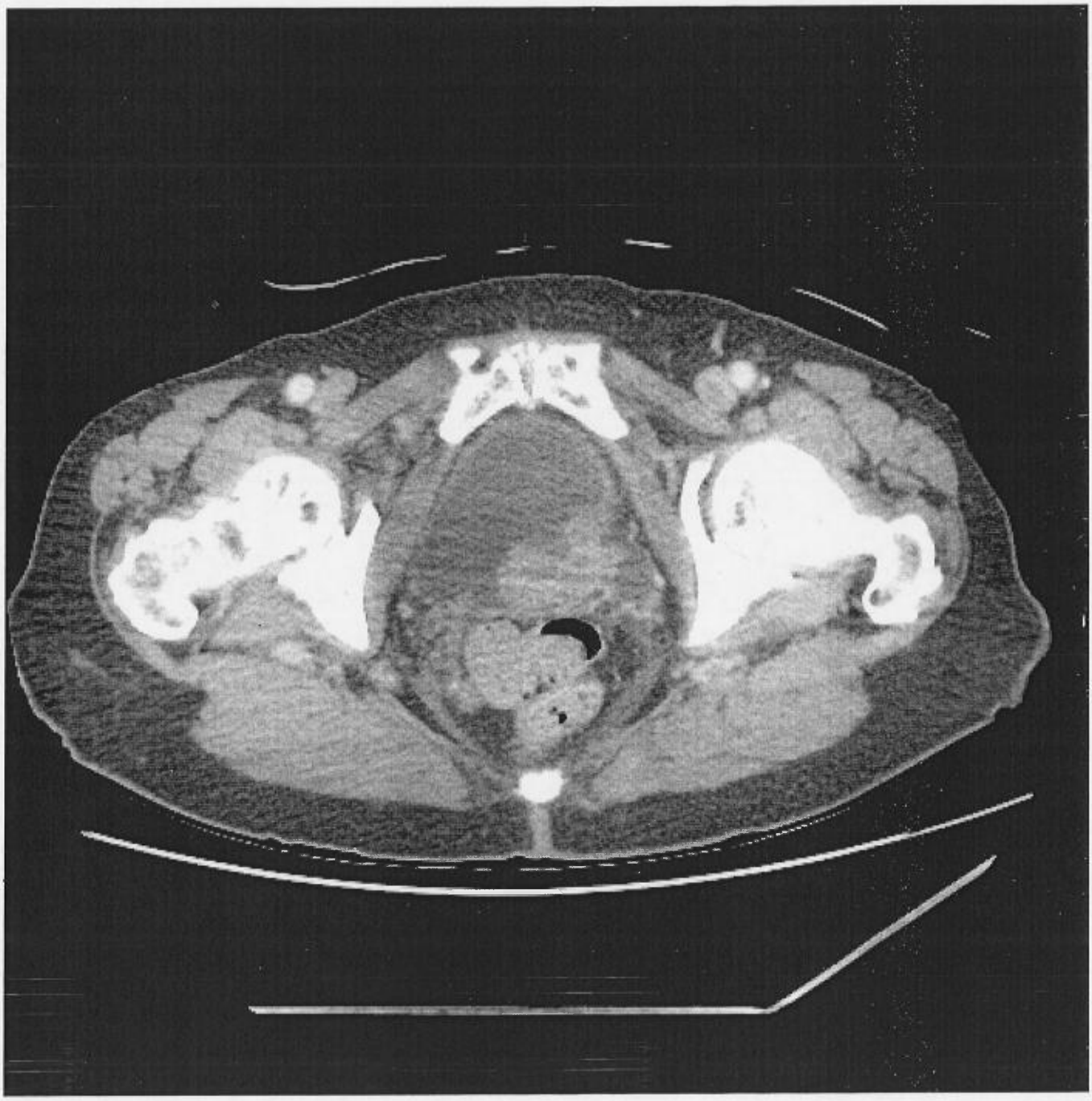
A. abandon procedure and place vaginal packing.
B. complete surgery and place vaginal packing.
C. obtain control of bleeding vaginally and proceed with sling.
D. obtain control of bleeding abdominally and proceed with sling.
E. angiographic embolization.

77. A 64-year-old man has a 90 degree dorsal penile curvature and a Sexual Health Inventory for Men (SHIM) score of 15 on sildenafil. The next step is:

A. penile plication.
B. incision and grafting procedure.
C. excision and grafting procedure.
D. penile prosthesis.
E. penile prosthesis with modeling.

78. A 75-year-old woman undergoes TURBT of the mass seen on the CT scan as shown. Pathology shows muscle-invasive urothelial carcinoma with areas of small cell carcinoma. Creatinine is 1.1 mg/dL and metastatic evaluation is negative. The next step is:

A. neoadjuvant gemcitabine and cisplatin.
B. neoadjuvant pembrolizumab.
C. 5-FU, mitomycin C, and XRT.
D. cisplatin, etoposide, and XRT.
E. radical cystectomy.



79. A ten-year-old boy with bladder exstrophy underwent bladder neck reconstruction, ileocystoplasty, and appendicovesicostomy two years ago. He complains of intermittent abdominal pain and hematuria. A KUB and ultrasound reveal multiple bladder calculi measuring 1-2 cm each. The best treatment is:

A. bladder irrigation.
B. SWL.
C. transurethral cystolitholapaxy.
D. percutaneous cystolithotomy.
E. convert to ileal conduit.

80. A 71-year-old man has newly diagnosed CIS of the bladder. BCG is currently unavailable due to a national shortage. The next step is:

A. surveillance cystoscopy in three months.
B. induction BCG when available.
C. intravesical mitomycin-C.
D. intravesical valrubicin.
E. radical cystectomy.

81. A 78-year-old man has a parastomal hernia two years after radical cystectomy and ileal conduit. The most likely predisposing factor is:

A. advanced age.
B. history of tobacco abuse.
C. history of radiation.
D. use of neoadjuvant chemotherapy.
E. ostomy lateral to the rectus muscle.

82. A 65-year-old woman undergoes a robotic sacrocolpopexy with polypropylene mesh using multifilament permanent sutures. Six weeks later, she develops low-grade fevers and difficulty ambulating. The next step is:

A. reassurance.
B. antibiotics.
C. MRI scan.
D. transvaginal ultrasound.
E. mesh removal.

83. During robotic prostatectomy, a periumbilical trocar is placed. Brisk arterial bleeding is noted around the port site. Bleeding subsides with anterior angulation of the trocar for 15 minutes but resumes once the trocar is manipulated. The next step is:

A. upsize trocar.
B. cauterization of peritoneal edges.
C. remove trocar and cauterize the tract.
D. utilize a port closure device.
E. open exploration.

84. A 70-year-old man is undergoing radical cystectomy and orthotopic urinary diversion for muscle-invasive high-grade urothelial carcinoma. During lymphadenectomy, an unexpected 1.5 cm external iliac lymph node is confirmed to be a metastasis. The next step is:

A. abort surgery and treat with chemotherapy and XRT.
B. abort surgery and treat with chemotherapy followed by cystectomy.
C. perform lymphadenectomy and treat with chemotherapy and XRT.
D. complete surgery and perform ileal conduit.
E. complete surgery as planned.

85. An 88-year-old man with advanced Parkinson's disease and a long-standing history of LUTS develops urinary retention. Pressure flow study shows a detrusor pressure of 8 cm H_2O with a maximum urinary flow rate of 2 mL/sec. DRE reveals a 40 gm prostate. The next step is:

A. bethanechol.
B. CIC.
C. suprapubic tube.
D. sacral neuromodulation.
E. TURP.

86. A 22-year-old woman has passed two calcium phosphate stones. Her 24-hour urine collection demonstrates: volume 1.89 L; citrate 145 mg (normal > 450 mg); and pH 6.7 (normal 5.8-6.2). Her serum potassium is 3.3 mEq/L, chloride is 109 mEq/L, and bicarbonate is 21 mEq/L. The next step is:

A. chlorthalidone.
B. potassium chloride.
C. potassium citrate.
D. sodium bicarbonate.
E. sodium citrate.

87. Following an MVC, a patient has a pelvic fracture. Urethral catheter placement returns bloody urine. CT cystogram demonstrates an extraperitoneal bladder injury. Non-operative management of the bladder injury can be pursued in the presence of:

A. a membranous urethral injury.
B. a bladder neck injury.
C. a rectal injury.
D. clot retention.
E. an intraperitoneal bladder injury.

88. An adult patient with acute renal failure has the following laboratory results: urine sodium 140 mEq/L (normal 20-40 mEq/L), plasma sodium 140 mEq/L, urine creatinine 60 ng/dL (normal 20-30 ng/dL), and plasma creatinine 3 ng/dL. The most likely cause of renal failure is:

A. dehydration.
B. sepsis.
C. aminoglycoside toxicity.
D. urinary retention.
E. NSAID toxicity.

89. A 34-week gestation male fetus has worsening bilateral hydronephrosis and new bilateral ureteral dilation with normal amniotic fluid. The bladder is full with a wall thickness of 5 mm. The next step is:

A. renal ultrasound at one month after delivery.
B. renal ultrasound and VCUG after delivery.
C. renal scan after delivery.
D. early delivery.
E. fetal MRI scan.

90. A 40-year-old man with ESRD requiring dialysis has muscle weakness. Serum potassium is 8 mEq/L. Serum potassium is most quickly lowered with:

A. Kayexalate via NG tube.
B. I.V. calcium gluconate.
C. I.V. bicarbonate.
D. I.V. glucose.
E. I.V. insulin and glucose.

91. A four-year-old girl has recurrent UTIs, urgency, frequency, and nocturnal enuresis. Ultrasound is normal and a VCUG shows a spinning top urethra, a small capacity bladder, and grade 2 right VUR. The next step is prophylactic antibiotics and:

A. timed voiding.
B. biofeedback.
C. antimuscarinics.
D. DDAVP.
E. endoscopic correction of VUR.

92. After resolution of spinal shock, men with a sacral spinal cord injury have:

A. no spontaneous erectile function.
B. reflexogenic and psychogenic erections.
C. preserved reflexogenic erections but no psychogenic erections.
D. no reflexogenic erections but preserved psychogenic erections.
E. a decreased response to PDE-5 inhibitors.

93. A 45-year-old man with LUTS has an AUA Symptom Score of 21 despite tamsulosin. He has a benign 25 gm prostate and his urinalysis is normal. A uroflow study reveals: maximum flow rate of 8 mL/sec, voided volume of 150 mL, and PVR of 95 mL. The next step is:

A. antimuscarinic.
B. videourodynamics.
C. TUIP.
D. UroLift™.
E. TURP.

94. A 54-year-old man develops a firm erection during a laser prostatectomy under spinal anesthesia. The resectoscope is removed, but after 15 minutes, the erection persists. The next step is:

A. resume resection.
B. intracavernosal phenylephrine injection.
C. perineal urethrostomy.
D. convert to general anesthesia.
E. abort procedure.

95. A 51-year-old man with a 2.0 cm palpable right inguinal node undergoes resection of a 4.0 cm penile verrucous carcinoma. The next step is:

A. observation.
B. right inguinal lymph node biopsy.
C. right inguinal lymph node dissection.
D. bilateral inguinal lymph node dissection.
E. bilateral inguinal and pelvic lymph node dissection.

96. A 54-year-old woman with hirsutism has Cushing syndrome. Her cortisol remains elevated after low-dose dexamethasone suppression. Both 17-ketosteroid levels and DHEA levels are significantly increased. The most likely diagnosis is:

A. functional adrenal adenoma.
B. ectopic ACTH production.
C. pituitary adenoma.
D. adrenocortical carcinoma.
E. anabolic steroid abuse.

97. A 55-year-old obese man undergoes radical cystoprostatectomy with Mainz pouch (cecum-terminal ileum neobladder). The pouch will not reach the urethral stump due to mesenteric tension. The next step is:

A. divide the ileocolic artery.
B. divide the right colic artery.
C. divide the middle colic artery.
D. convert to a continent cutaneous diversion.
E. create an ileal loop conduit.

98. Dietary calcium restriction will:

A. reduce urinary citrate.
B. increase urinary citrate.
C. reduce urinary oxalate.
D. increase urinary oxalate.
E. increase urinary pH.

99. A 62-year-old man receives induction BCG for diffuse CIS of the bladder. At cystoscopy six months later, the optimal way to detect persistent or recurrent CIS is:

A. random bladder biopsies.
B. bladder wash cytology.
C. fluorescent in-situ hybridization (FISH).
D. blue-light fluorescent imaging.
E. narrow band imaging.

100. A patient with recurrent calcium oxalate stones undergoes a 24-hour urine collection with the following results: calcium 150 mg (normal < 200 mg); oxalate 35 mg (normal < 40 mg); citrate 750 mg (normal > 550 mg); sodium 145 mg (normal < 150 mg); uric acid 925 mg (normal < 800 mg). The treatment most likely to reduce future stone formation is:

A. low oxalate diet.
B. low sodium diet.
C. allopurinol.
D. potassium citrate.
E. thiazide.

101. A 35-year-old man has extensive intraurethral condyloma. The next step is:

A. cryoablation.
B. CO_2 laser ablation.
C. intraurethral 5-FU cream.
D. intraurethral imiquimod cream.
E. intraurethral podophyllin.

102. The I.V. antibiotic prophylaxis recommended for radical cystectomy and ileal conduit in the AUA Best Practice Statement is:

A. first generation cephalosporin 30 minutes prior to incision and continued for 24 hours.
B. second generation cephalosporin 30 minutes prior to incision and continued for 48 hours.
C. third generation cephalosporin 30 minutes prior to incision and discontinuation within 24 hours.
D. ampicillin, gentamicin, and metronidazole 30 minutes prior to incision.
E. gentamicin and metronidazole 30 minutes prior to incision and continued for 48 hours.

103. A 38-year-old man has a fungating mass of the distal penis. Physical examination is otherwise normal, and metastatic evaluation is negative. Partial penectomy reveals a 5 cm poorly-differentiated squamous cell carcinoma arising from the urethra with invasion of both corpora cavernosum. Surgical margins are negative. The next step is:

A. observation.
B. bilateral superficial inguinal node dissection.
C. chemoradiation.
D. adjuvant radiotherapy.
E. chemotherapy.

104. A 34-year-old man has premature ejaculation and new onset erectile dysfunction. A penile duplex Doppler ultrasound demonstrates a peak systolic velocity of 38 mL/sec and an end diastolic velocity of 2 mL/sec. The next step is:

A. topical lidocaine spray.
B. paroxetine.
C. tadalafil.
D. intracavernosal injection therapy.
E. penile prosthesis.

105. The prostatic enzyme that is also found in the small intestine and salivary glands is:

A. prostate cancer antigen 3 (PCA3).
B. prostate specific membrane antigen (PSMA).
C. prostate stem cell antigen (PSCA).
D. prostatic acid phosphatase.
E. prostate specific protein.

106. A 52-year-old man with bladder cancer desires orthotopic diversion after cystectomy. His serum creatinine is 2.1 mg/dL, creatinine clearance is 40 mL/min, urine pH is 5.8 after an ammonium load, and his urine osmolality is 600 mOsm/kg after water deprivation. The next step is:

A. ileal conduit.
B. sigmoid colon conduit.
C. transverse colon conduit.
D. ileal orthotopic neobladder.
E. ileocolonic continent cutaneous pouch.

107. On postoperative day one, following a three-hour ureteroscopy performed under spinal anesthesia, a 47-year-old man is ambulating normally but complains of lower back pain radiating down both legs. The most likely diagnosis is:

A. cerebrospinal fluid leak.
B. epidural hematoma.
C. rhabdomyolysis.
D. compartment syndrome.
E. positional neuropathy.

108. The primary demonstrated benefit of vaccinating boys aged 10-12 years with the human papillomavirus 9-valent vaccine (Gardasil 9™) is a reduction of:

A. HIV co-infection.
B. genital warts.
C. penile cancer.
D. oropharyngeal cancer.
E. cervical cancer.

109. The medication with the greatest risk of polycythemia is:

A. oral anastrozole.
B. oral clomiphene citrate.
C. subcutaneous FSH.
D. subcutaneous human chorionic gonadotropin.
E. intramuscular testosterone cypionate.

110. Compared to partial nephrectomy, percutaneous cryoablation of a 2.8 cm peripheral posterior RCC is associated with:

A. improved nephron preservation.
B. fewer urinary fistulas.
C. increased risk of arteriovenous malformation.
D. higher local recurrence.
E. better cancer-specific survival.

111. A Tanner stage 2, 12-year-old boy has a grade 3 left varicocele that is present in both supine and standing position. The left testis is 8.5 mL and the right is 10.5 mL. The next step is:

A. follow-up in six months.
B. scrotal ultrasound.
C. abdominal ultrasound.
D. semen analysis.
E. varicocelectomy.

112. A ten-year-old girl with spina bifida and her father are considering surgical management of her urinary incontinence. The process of discussing the risks and benefits of surgery with the patient and confirming the desire to proceed with surgery is known as:

A. assent.
B. consent.
C. paternalism.
D. non-maleficence.
E. statutory minor principle.

113. After surgical resection of adrenocortical carcinoma, the most important factor associated with overall survival is:

A. hormonal activity.
B. tumor size.
C. T (tumor) stage.
D. R (margin) status.
E. adjuvant chemotherapy.

114. For optimal maintenance of ejaculation during a right-sided nerve-sparing RPLND, the surgeon should preserve:

A. preganglionic sympathetic fibers anterior to the vena cava.
B. postganglionic sympathetic fibers anterior to the vena cava.
C. preganglionic parasympathetic fibers posterior to the vena cava.
D. postganglionic sympathetic fibers posterior to the vena cava.
E. postganglionic parasympathetic fibers anterior to the vena cava.

115. Cardiac arrhythmias associated with SWL:

A. are more common with gated SWL.
B. occur more often in patients with history of coronary artery stenting.
C. resolve with cessation of SWL.
D. occur in less than 5% of patients.
E. are often related to the strength and number of shockwaves.

116. A 35-year-old man who underwent ileocystoplasty twenty years ago has numbness in the hands and feet, loss of balance, and postural hypotension. Serum testing will most likely show elevated:

A. bicarbonate.
B. calcium.
C. creatinine.
D. homocysteine.
E. potassium.

117. A 25-year-old woman with cerebral palsy has an 8 mm mid-ureteral calculus. Preoperative urine culture grew 100,000 CFU/mL pansensitive E. coli. She is asymptomatic and was treated with trimethoprim/sulfamethoxazole for five days prior to ureteroscopy. Upon passage of a guidewire, turbid urine drains from the ureteral orifice. The next step is:

A. proceed with ureteroscopy.
B. administer I.V. gentamicin and proceed with ureteroscopy.
C. remove wire and abort.
D. place ureteral stent and abort.
E. place percutaneous nephrostomy tube.

118. An asymptomatic two-year-old girl with resolved prenatal hydronephrosis is noted on pelvic ultrasound to have a 1 cm urachal remnant. The next step is:

A. observation.
B. VCUG.
C. antibiotics.
D. excision of urachal remnant.
E. excision of entire urachus.

119. The factor associated with the greatest risk of lethal prostate cancer is:

A. African-American ethnicity.
B. family history of prostate cancer.
C. BRCA1 mutation.
D. BRCA2 mutation.
E. MSH2 mutation.

120. Hypertension is a common side effect of:

A. cabazitaxel.
B. denosumab.
C. sipuleucel-T.
D. enzalutamide.
E. abiraterone.

121. A 70-year-old man is diagnosed with metastatic prostate cancer to bone. His bone mineral density is normal. In addition to an LH-RH antagonist, he should receive:

A. bicalutamide.
B. bicalutamide + denosumab.
C. abiraterone.
D. abiraterone + prednisone.
E. abiraterone + prednisone + zoledronic acid.

122. A 35-year-old woman with intermittent flank pain has ipsilateral moderate hydronephrosis on CT urogram and a normal diuretic MAG-3 renal scan. She undergoes a Whitaker test (perfusion pressure-flow study) with a renal pelvis/bladder differential pressure of 10 cm H_2O. The next step is:

A. observation.
B. repeat Whitaker test with diuretic administration.
C. diagnostic ureteroscopy.
D. endopyelotomy.
E. pyeloplasty.

123. A 13-year-old girl has a 2.5 cm stone in the left mid-pole of a horseshoe kidney. Anatomical consideration(s) for surgical treatment is/are:

A. ureters usually insert in a caudal, ectopic location in the bladder.
B. renal pelvises are positioned posteriorly.
C. calyces are fewer than normal.
D. calyces point posteriorly.
E. isthmus is located adjacent to S2-S4.

124. A 59-year-old man who had an uncomplicated vasectomy 12 years ago is trying to conceive with his 39-year-old wife. Neither have achieved a prior pregnancy. His scrotal examination is normal. Sperm retrieval with IVF/ICSI is preferred in this setting due to:

A. advanced paternal age.
B. advanced maternal age.
C. absence of sperm granulomas.
D. lack of prior conception by father.
E. lack of prior conception by mother.

125. A 35-year-old man with secondary infertility has decreased libido and energy. Two semen analyses reveal normal ejaculate volume azoospermia. LH is 0.2 mIU/mL, FSH is 0.3 mIU/mL, testosterone is 40 ng/dL, and prolactin is 10 ng/dL (normal < 20 ng/dL). The next step is:

A. clomiphene citrate.
B. FSH.
C. human chorionic gonadotropin.
D. TRUS.
E. MRI scan of brain.

126. A 30-year-old man with a maximum urinary flow rate of 12 mL/sec undergoes meatotomy for meatal stenosis. After opening the urethra to the coronal margin, the lumen is still narrow at 12 Fr. The next step is:

A. retrograde urethrogram.
B. urethral biopsy.
C. suprapubic cystostomy.
D. self-dilation with steroid ointment.
E. continue the urethrotomy proximally until normal urethral lumen.

127. A 35-year-old woman has passed two calcium oxalate stones in the past ten years. No renal calcifications are visible on a KUB. She would like to become pregnant. Her risk of stone formation during her pregnancy will be:

A. decreased.
B. unchanged.
C. increased in the first trimester.
D. increased in the second trimester.
E. increased in the third trimester.

128. Four years after radical prostatectomy for Gleason 8 (4+4) pT3bN1 adenocarcinoma, an asymptomatic 78-year-old man on leuprolide has a PSA increase from undetectable to 2.1 ng/mL, and then 3.4 ng/mL eight weeks later. Testosterone is 20 ng/dL, and metastatic evaluation is negative. The next step is:

A. apalutamide.
B. bicalutamide.
C. denosumab.
D. sipuleucel-T.
E. docetaxel.

129. A 14-year-old asymptomatic girl with multiple, non-obstructing, 3-4 mm renal calculi has a serum creatinine 0.5 mg/dL, Na 140 mEq/L, K 3.8 mEq/L, Cl 124 mEq/L, HCO_3 24 mEq/L, PO_4 3.2 mg/dL, Ca 10.8 mg/dL, and urine pH 6.0 (normal 5.8-6.2). The next step is:

A. parathyroid hormone level.
B. uric acid level.
C. 24-hour urine study.
D. increase fluid intake.
E. ureteroscopy with stone removal.

130. During robotic-assisted surgery, the bipolar grasper instrument stops working completely and is locked in place while grasping tissue. Conventional attempts at instrument removal are unsuccessful. The next step is:

A. power the system on and off.
B. push emergency stop and use tool wrench.
C. disable patient cart arm by pressing and holding the "home" button.
D. resect the tissue being held by the robotic grasper to facilitate disengagement.
E. convert to open surgery to safely dislodge the robotic instrument.

131. In patients with previously untreated metastatic clear cell RCC, the complete response rate of combination nivolumab and ipilimumab is approximately:

A. 1%.
B. 10%.
C. 20%.
D. 33%.
E. 50%.

132. A 17-year-old boy has a neurogenic bladder secondary to a T10 spinal cord injury with new-onset hydroureteronephrosis and VUR. He refuses CIC. The safest, long-term alternative to CIC is:

A. alpha-adrenergic blockers.
B. condom catheter.
C. chronic indwelling urethral catheter.
D. sphincterotomy.
E. intradetrusor onabotulinumtoxinA.

133. A 27-year-old man with a C4 complete spinal cord injury develops struvite stones five years after his injury. He is managed with a 14 Fr indwelling urethral catheter. The next step is definitive stone treatment and:

A. daily suppressive antibiotics.
B. CIC.
C. upsize urethral catheter.
D. suprapubic tube.
E. sphincterotomy and condom catheter.

134. Two weeks after a Caesarean section, a 29-year-old woman has constant drainage from the vagina. Cystoscopy is unremarkable and retrograde ureteropyelography reveals a ureterovaginal fistula 6 cm from the bladder. Retrograde stent placement is unsuccessful. The next step is:

A. observation.
B. antegrade stent placement.
C. ureteroureterostomy.
D. ureteroneocystostomy.
E. Boari flap.

135. According to the 2016 Centers for Disease Control Guideline for Prescribing Opioids for Chronic Pain, before initiating opioid treatment for chronic pain, physicians should routinely order:

A. electromyography (EMG) testing.
B. electroencephalography (EEG) testing.
C. cytochrome p450 pharmacogenomic testing.
D. sleep apnea testing.
E. urine drug testing.

136. The Holmium laser fiber settings that will lead to the least amount of retropulsion of a renal pelvis stone are:

A. increased pulse energy, increased frequency, short pulse width.
B. decreased pulse energy, increased frequency, long pulse width.
C. increased pulse energy, decreased frequency, short pulse width.
D. increased pulse energy, increased frequency, long pulse width.
E. decreased pulse energy, increased frequency, short pulse width.

137. Two hundred incontinent women are randomized into treatment and placebo groups to evaluate a new antimuscarinic medicine with a primary endpoint of complete continence. The most appropriate statistic test to evaluate the study is:

A. logistic regression.
B. ANOVA.
C. paired t-test.
D. Fisher's exact test.
E. chi-square test.

138. The best hemostatic agent to use during robotic-assisted partial nephrectomy in patients with a history of red meat allergy is:

A. Floseal®.
B. Surgiflo®.
C. Tisseel®.
D. BioGlue®.
E. Evicel®.

139. Following neoadjuvant XRT, a five-year-old boy undergoes en bloc resection of a large pelvic sarcoma, including the left ureter 2 cm above the iliac vessels. The most appropriate intraoperative management is:

A. nephrostomy tube diversion.
B. ipsilateral ureteroureterostomy.
C. Boari flap.
D. transureteroureterostomy.
E. ileal ureter.

140. A 45-year-old woman with a 2 cm obstructing renal pelvis stone is scheduled for a single-stage PCNL. She has a negative urine culture and no history of UTIs. To reduce the risk of postoperative sepsis, she should receive I.V. ampicillin and gentamicin perioperatively and:

A. cephalexin for seven days preoperatively.
B. nitrofurantoin for seven days preoperatively.
C. no additional oral antibiotics preoperatively.
D. ciprofloxacin for seven days postoperatively.
E. trimethoprim/sulfamethoxazole for seven days postoperatively.

141. A 62-year-old woman with right rib pain and 10 kg weight loss has a CT scan that shows a 6 cm left renal mass and multiple bone metastases. Serum studies are normal except for a hemoglobin of 11.4 mg/dL. Renal mass biopsy shows clear cell RCC. The next step is:

A. left cytoreductive nephrectomy.
B. pazopanib.
C. sunitinib.
D. pembrolizumab and axitinib.
E. cabozantinib and ipilimumab.

142. A 45-year-old man has an incidental finding of a 2 cm non-obstructing stone in his transplant kidney. His renal function is near baseline. The next step is:

A. no intervention.
B. SWL.
C. ureteroscopy.
D. PCNL.
E. pyelolithotomy.

143. A 55-year-old woman is incidentally diagnosed with fibromuscular dysplasia involving the distal renal arterial branches during abdominal imaging for flank pain which has resolved. Her blood pressure is well-controlled on two medications that she started ten years ago. In addition to continuing medication and routine blood pressure checks, the next step is:

A. no additional intervention.
B. duplex ultrasound surveillance.
C. renal scintigraphy.
D. percutaneous transluminal angioplasty.
E. surgical revascularization.

144. A 34-year-old C6 tetraplegic man with an indwelling 14 Fr urethral catheter that is changed monthly has new-onset hydronephrosis. The adjunct treatment associated with the best chance of upper tract preservation is:

A. low-dose prophylactic antibiotics.
B. changing to 16 Fr indwelling catheter.
C. changing indwelling catheter every three weeks.
D. changing to a suprapubic tube.
E. intravesical onabotulinumtoxinA injections.

145. Prior to placing an inflatable penile prosthesis, a 49-year-old man with an eight year history of erectile dysfunction (ED) should be advised that his maximal penile length will be:

A. 2 cm shorter than his erect length prior to ED onset.
B. unchanged from his erect length prior to ED onset, but there will be glans softening.
C. slightly larger than his erect length prior to ED onset pending regular device cycling.
D. difficult to predict due to the long duration of his ED.
E. the same as the preoperative length of the fully stretched flaccid penis.

146. A 54-year-old man has a 12-month history of urinary frequency and a sense of incomplete voiding. DRE reveals a 40 mL prostate with no nodules. His PSA is 0.8 ng/dL and the urinalysis is normal. The AUA Symptom Score is 12 with a disease-specific quality of life score of 1. The next step is:

A. observation.
B. PVR.
C. uroflowmetry.
D. alpha-blocker.
E. antimuscarinics.

147. A 29-year-old otherwise healthy man has perineal pain, constipation, and intermittent dysuria. DRE demonstrates pelvic muscle tenderness. Urinalysis is normal. The most likely urodynamic finding is:

A. low peak flow rate.
B. detrusor overactivity.
C. poor compliance.
D. detrusor sphincter dyssynergia.
E. large bladder capacity.

148. A 55-year-old man has LUTS and bothersome retrograde ejaculation on maximum medical therapy. He has a 60 gm benign prostate with a large median lobe on cystoscopy. The next step is:

A. bipolar TURP.
B. UroLift™.
C. water vapor therapy (Rezum™).
D. holmium laser prostate enucleation.
E. transurethral prostate vaporization.

149. During vasectomy reversal, a distal epididymovasostomy site is superior to more proximal sites because of:

A. higher patency rates.
B. higher pregnancy rates.
C. lower antisperm antibody formation rates.
D. lower late stenosis rates.
E. shorter operative times.

150. A 74-year-old woman with type 1 diabetes mellitus and ESRD undergoes an MRI scan with gadolinium contrast. She develops pruritus, decreased range of motion, increased skin tightness, and red patches along her ankles. The next step is:

A. racemic epinephrine.
B. corticosteroids.
C. diphenhydramine.
D. hemodialysis.
E. insulin.