

2023 - IID - MD4043 - Eksamen 1
Eksamensdato: 2023-05-24

1

Transposition of the great vessels presents with cyanosis in newborns. What other heart defects also present with cyanosis in newborns?

- A Critical aortic stenosis and atrial septal defect
- B Tetralogy of Fallot and critical pulmonary stenosis
- C Critical aortic stenosis and patent ductus arteriosus
- D Tetralogy of Fallot and atrioventricular septal defect

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After the first year of his life a 3-year-old boy has had several middle ear infections, pneumonia twice and a sinus infection once. He has coped with the usual vaccinations and was not particularly ill when he had chicken pox. He has always had small tonsils. The following tests are performed in the Pediatric Outpatients Clinic:

Leucocytes	12.5 x 10 ⁹ per liter	(4.0-14.0 x 10 ⁹ /L)
Hgb	12.5 g/l	(10.5-13.5 g/dL)
Trc	321 x 10 ⁹ per liter	(150-400 x 10 ⁹ /L)
Neutrophils	60%	(31-60%)
Lymphocytes	25%	(37-57%)
Monocytes	14%	(0-6%)
Eosinophils	1%	(1-4%)
IgG	0.5 g/L	(6.1-14.9 g/L)
IgA	0.1 g/L	(0.2-2.9 g/L)
IgM	0.3 g/L	(0.4-2.1 g/L)

Chest x-ray: Clear lungs, suspected bronchiectasis in the lower lobe of the right lung, normal width of the mediastinum.

An analysis was also undertaken of the lymphocyte concentrations.

What do you think the lymphocyte analysis showed?

- A Normal B-lymphocytes, normal CD4+ and normal CD8+ T-lymphocytes
- B Low B-lymphocytes, normal CD4+ and normal CD8+ T-lymphocytes
- C Normal B-lymphocytes, low CD4+ and low CD8+ T-lymphocytes
- D Low B-lymphocytes, low CD4+ and low CD8+ T-lymphocytes

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3

A 7-month old girl who was previously healthy and not disposed towards atopic disorders arrives in the emergency department. She has a temperature, nasal congestion and is short of breath, and during the past day she has become lethargic and is refusing to nurse.

When examined at the hospital she is pale and has a respiratory rate of 65/minute with subcostal and intercostal retractions. Capillary refill time < 2 seconds and pulse 140/minute. Oxygen saturation 90%. Over the lungs, there are crackles bilaterally and prolonged expiration.

Blood test results:

Blood test	Result	Ref. range
CRP	43 mg/L	< 5 mg/L
Hb	10.8 g/dL	10.8 – 13.5 g/dL
Leucocytes	7.8 x 10 ⁹	4.0 – 20.0 x 10 ⁹ /L
pH	7.30	7.35 – 7.45
pCO ₂	5.0	4.5 – 6.0
BE	-6	-3 - +3

She is given fluids and oxygen.

What other types of treatment should she have?

- A Saline nasal drops, saline inhalation
 - B Oral penicillin, saline inhalation
 - C Oral prednisolone and saline inhalation
 - D Saline nasal drops, inhalation of a beta-2 agonist
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You are contacted by a public health nurse who would like you to conduct a somatic examination of a 6-year-old boy who has attended a health chat in connection with starting school. He mentioned something about not not being happy at home and that his "mum spent a lot of time in bed" and that his dad could get angry.

When you examine the boy you see that he is overweight and has dirty clothing. The boy appears to be downcast and you find a lot of plaque on his teeth and a few teeth that have obviously been attacked by caries. Otherwise he has normal skin and organ status.

What should you do now?

- A You refer the boy to BUP (the child and adolescent psychiatric outpatients clinic) and ask them to consider sending a report of concern
 - B You refer the boy to the dentist for a caries assessment.
 - C You send a report of concern to the child welfare services and take the boy back for a check-up.
 - D You ask for a meeting with the parents in order to discuss the situation with them
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You have a 2-year-old girl in your office who has come to be examined because she is suffering from constipation. She has been out of sorts and has had a poor appetite during the past month. Sluggish, hard stools approx. every third day. When you examine her she is in a good state of general health, afebrile, normal findings over the heart and lungs, normal in the pharynx, no glandular tumours. Her abdomen is slightly asymmetrical with the right side being slightly more swollen. You palpate a swelling in the upper right quadrant that is difficult to define, but does not feel like the liver. A urine dipstick tests shows 4+ for blood. You suspect a tumour.

What type of tumour is most likely?

- A Neuroblastoma
 - B Lymphoma
 - C Wilms' tumour
 - D Rhabdomyosarcoma
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A 38-year-old woman due to give birth for the third time is admitted for a planned caesarian section during week 38 of her pregnancy because she has had two previous caesarian sections. A girl is born who starts screaming immediately after the birth. The pediatrician is called when the baby is 20 minutes old because she is having breathing difficulties. An examination shows a respiratory rate of 80/minute, pronounced pressing respiration and subcostal retractions. Oxygen saturation on the right side is 94%.

What sort of additional examinations should be carried out first in order to find the cause of the respiratory problems?

- A Chest x-ray, echocardiogram and bilirubin blood test
 - B Chest x-ray, blood gas and infection status blood tests
 - C Echocardiogram, electrocardiogram and pro-BNP blood test
 - D Spinal puncture, cerebral ultrasound and echocardiogram
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The on-duty pediatrician is called to the delivery room because of a difficult birth involving stuck shoulders (shoulder dystocia). When the pediatrician arrives in the delivery room the baby has just been born and has been laid down on the asphyxia table. The baby is atonic and is not breathing on its own. The midwife standing next to the baby reports that she cannot hear any heart sounds on auscultation.

What measure(s) should be carried out first?

- A** Commence bag-mask ventilation
 - B** Stimulate and undertake a further assessment after 1 minute
 - C** Administer 100% oxygen using a mask
 - D** Commence bag-mask ventilation and heart compressions
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A 2-year-old girl visits you, her GP, with her father. She had atopic eczema and a milk allergy when she was an infant and she still has eczema. Her father suffers from asthma himself and wonders if the girl could also have asthma. She has suffered from long-term respiratory tract infections with shortness of breath and after each infection she has had a persistent cough at night. She usually doesn't get rid of her breathing problems before the next infection occurs. She was admitted with rhinovirus bronchiolitis when she was 8 months old.

What is the most likely diagnosis and correct measure(s)?

- A** This is probably protracted bacterial bronchitis, but it is hard to assess this with asthma and you refer her to a pediatrician for assessment and for samples to be taken.
 - B** This is probably protracted bacterial bronchitis. You take a sample and start antibiotic treatment.
 - C** This sounds like asthma and I am prescribing a ventolin aerosol with a chamber that they can use when required.
 - D** This sounds like asthma and I am referring her to a pediatrician because she has a disposition to develop atopic eczema and using steroid inhalers on a regular basis or when required needs to be assessed.
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A 3-month-old boy. The mother contacts you, her GP. Normal pregnancy and birth in week 39. No neonatal complications. Breastfeeding exclusively and good height and weight developments. Social and smiles and babbles. The mother is contacting you, her GP, because he has had several bowel movements containing fresh blood and mucous in his nappy as well as daily vomiting. He screams a lot. They have interpreted this as being colic and have started seeing a chiropractor for treatment. Upon examination there are normal findings over the heart, lungs and abdomen. Dry skin, but no eczema.

What is the correct assessment and measure?

- A** Refer the child to a pediatrician for further investigation with suspected IBD
 - B** Presumably conditioned in reflux. Try treating for 2 weeks with an oral PPH (proton pump inhibitor) before further assessment
 - C** Milk protein allergy. The mother should try a milk-free diet before coming for a check-up in 2 weeks' time for further assessment.
 - D** Reassure the mother. Sporadic vomiting and variable faeces which sometimes contains blood and mucous are common in breastfed infants.
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10

You are a doctor at a health care centre and a child visits you for the 6-month-old check-up. You think that the child looks rather pale. Upon examination you find pale conjunctiva and splenomegaly. The parents are healthy and say that their child has been healthy up until the last few weeks. The birth was normal and the child has developed normally up until now. The child was fed on formula milk and has developed in accordance with the growth chart. You suspect anemia and this is confirmed by an Hb level of 6.7 g/dl (ref. 10.5-13.1 g/dL).

On the basis of the child's age and the history and findings, what type of anemia do you suspect?

- A** Iron deficiency anemia
 - B** Hemoglobinopathy
 - C** Hereditary spherocytosis
 - D** Physiologic nadir
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How long is immunity expected to last after 3 doses of tetanus vaccine in the child vaccination programme?

- A** 1-2 year
 - B** 3-5 years
 - C** 10 years or more
 - D** Lifelong
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You are a doctor at a health centre and MMR vaccines are planned for three 15-month-old children today. Ida's mother has said that they do not want their daughter to have the vaccine. Tiril is very snotty and is coughing, but her general state of health is good and she does not have a temperature. Siri has recently been diagnosed with juvenile arthritis and is taking immunosuppressive medication, and her mother has been told that live vaccination should be postponed.

Which of the 3 should receive the MMR vaccine today?

- A** Tiril receives the vaccine because a cold without a temperature is not a contraindication, while Ida and Siri have contraindications.
 - B** Tiril and Siri receive the vaccine because a cold without a temperature is not a contraindication and the MMR vaccine is a killed vaccine.
 - C** Ida, Tiril and Siri all receive the vaccine because vaccination is compulsory and there are no contraindications
 - D** None of them receive the vaccine since Tiril has a cold, Siri should not have live vaccines and Ida does not have parental consent
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13

A 3-year-old boy, previously healthy, has followed the ordinary vaccination programme. During the past week he has developed a severe red rash on his cheeks and today his mother discovered a pink rash on his back, neck and stretching side of the arms and thighs. The rash forms a lacy pattern. His general state of health is good and he does not have a temperature. Several of the children in the kindergarten have had similar rashes.

Which infectious agent is most likely?

- A** Herpes virus type 6
 - B** Coxsackievirus
 - C** Gruppe A streptococcus
 - D** Human parvovirus B19
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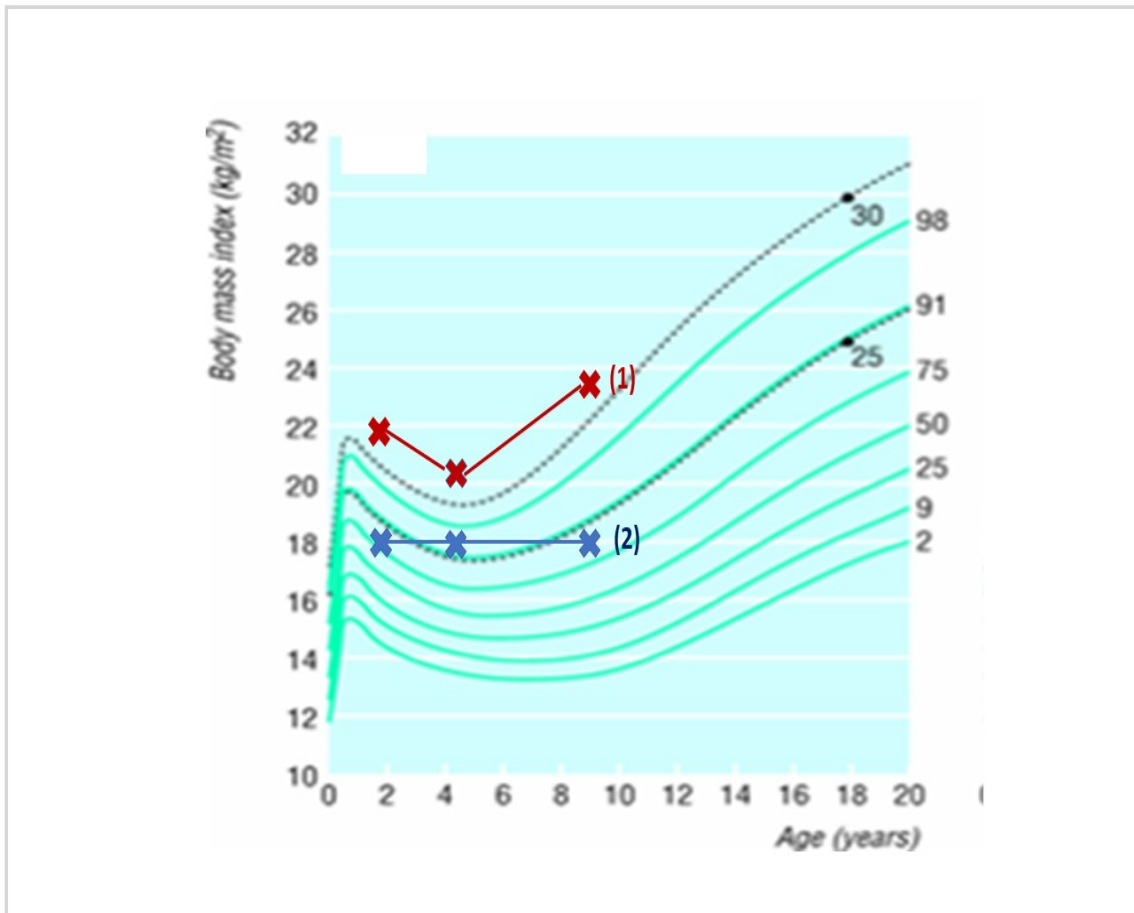
Children with Covid-19 are rarely seriously ill. However, in an increasing number of countries we have seen an increase in the number of cases of a rare inflammatory syndrome which manifests with a temperature and other symptoms 4-6 weeks after having had Covid-19. What are the most important symptoms of this Covid-19-associated syndrome in children, in addition to a temperature.

- A Cough, stomach pains and pneumonia
- B Stomach pains, a rash and arthritis
- C CNS affectation, hepatosplenomegaly and nephritis
- D Mucus-, cardiac and gastrointestinal affectations

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15

You work at a health centre and are assessing the weight development of some third grade pupils from the age of 2. The attached form for the body mass index (BMI) is used when charting normal weight, overweight and obesity. Which statement about the two development lines (lines 1 and 2) are most correct?



- A Development line 1 indicates that the child has been overweight since the age of 2 and has remained at the same level up until third grade.
- B Development line 2 indicates that the child's weight was normal at the age of 2, overweight at the age of 4 and normal in third grade.
- C Development line 2 indicates that the child's weight status has remained stable from the age of 2 and until third grade.
- D Development line 1 indicates that the child was obese at the age of 2, was much slimmer at the age of 4, but then developed much more pronounced obesity in third grade.

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You are a doctor in a children's clinic and a 3-year-old boy comes in who has been unwilling to stand up for around a week, has limped the few times he has wanted to walk, has complained mainly about his left leg, but has also mentioned his right leg and on a couple of occasions has pointed to his back as also being painful, and has otherwise clung to his mother and has wanted to be carried. He has otherwise been reasonably healthy previously, but recently he has been a bit listless and pale, has suffered from a number of upper respiratory tract infections this autumn and is still a bit snotty. CRP 11 at the primary care emergency room, only subfebrile. Upon clinical examination the boy is difficult, whiny and avoids examination, and he indicates general pain when examined, particularly in the knees and hips. On palpation you find no definite tenderness, limitation of movement or visible swelling or redness over the joints.

Which is the most sensible one of the following actions?

- A** Wait and then arrange for a further check-up and assessment in 1-2 weeks' time
- B** Carry out an ultrasound scan of his hips and knees today and wait with further investigations if normal, paracetamol if required
- C** Try NSAIDs for a week before follow-up and possibly further investigation
- D** Investigate his hematological status today before making any decisions about his future treatment

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Ursula is a previously healthy 9-year-old girl who stopped wearing nappies at the age of 3. During the last few years she has had a tendency to wet herself during the daytime, but also sometimes at night. During the same period she has had two bouts of cystitis which required antibiotics. She does not suffer from constipation. Her parents are desperate about this situation and have booked an appointment for their GP to examine her.

As her GP you take plenty of time to chat to Ursula. It turns out that she often holds herself and very rarely goes to the toilet when she is at school. A clinical examination reveals nothing abnormal, apart from the fact that her knickers smell of urine. Normal urine dipstick test.

What measures should you implement first?

- A** Reduce the intake of fluids during the evenings, commence Minirin nasal spray (antidiuretic hormone), check-up in one months' time
- B** Cultivate the urine sample, book an ultrasound scan of the urinary tract, refer for examination by the second line service (the Children's Department)
- C** Advice about avoiding drinking during the evenings, commence preventative antibiotics for 4 weeks, check-up in one months' time
- D** Advice about urinating at least every third hour + when required during the daytime, enough to drink, mainly during the daytime, check-up in one months' time

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18

Karl (8 years old) has always wet the bed at night. He also has a tendency to wet himself during the daytime. His mother is very concerned and takes him to the local doctor. At clinical examination, the doctor finds normal conditions apart from suspected constipation.

What is the most correct way to handle this situation by the doctor?

- A** Motivate the boy to take a laxative for a period of time and to go to the toilet regularly every day.
- B** Recommend that he drinks little in the evening, and start alarm mat treatment administered by the public health nurse.
- C** Reassure the parents by saying that this will disappear with time and that they can await the situation.
- D** Referral of the boy to ultrasonography of the urinary tract and to the Paediatric Dept. for further investigations and treatment.

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19

10-year old boy, previously healthy. Over the last 8 days has developed a temperature, listlessness and a worsening cough without expectoration. Examination by the doctor shows him to be pale, listless but not seriously debilitated. T_p 38.5, respiratory rate 28/minute. Normal BP and pulse. A few crackling sounds are heard over both lungs basally over the back. No attenuation on percussion. CRP 50 mg/L (ref: <5 mg/L).

Which microbe do you think has most probably caused the infection?

- A Streptococcus pneumoniae
- B Mycoplasma pneumoniae
- C Respiratory syncytial virus

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20

You work as a specializing doctor in the reception unit of the children's clinic which also has a regional child cancer department. You have received a 3-year-old boy who is pale, has quite a lot of petechiae and has had a moderate fluctuating temperature during the last 2 weeks. His blood tests show Hb 7.3 g/dL (10.5 - 13.1 g/dL), thrombocytes $34 \times 10^9/L$ ($228 - 435 \times 10^9/L$), leucocytes $130 \times 10^9/L$ ($3.7 - 14.7 \times 10^9/L$), granulocytes $0.5 \times 10^9/L$ ($1.7 - 7.1 \times 10^9/L$) and CRP 40 mg/L (< 5 mg/L). Suspected blast cells have been seen in the peripheral blood smear.

You suspect acute leukemia. The children's oncologist in charge has said that bone marrow tests under anaesthetic are being planned for the following day.

Which test is it absolutely necessary to carry out before the anaesthetic is administered the next day?

- A CT scan of the thorax
- B MRI of the thorax and abdomen
- C Chest x-ray
- D Ultrasound scan of the abdomen

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21

Ectopic pregnancy should be suspected when

- A The pregnant woman is not showing any symptoms of being pregnant
- B The pregnant woman has spent a long time becoming pregnant
- C The pregnant woman attends due to pain and bleeding during the first trimester
- D The pregnant woman attends due to pain during the 2nd trimester

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22

What is the most common histological type of cervical cancer

- A Neuroendocrine
- B Carcinosarcoma
- C Adenocarcinoma
- D Squamous epithelial carcinoma

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23

What are typical symptoms of ovarian cancer?

- A Rapidly developing diffuse abdominal symptoms, distended abdomen, pelvic pressure, urinary tract symptoms
- B Postmenopausal bleeding, dysuria and dyspareunia
- C Acute onset abdominal pain as a differential diagnosis of "acute abdominal pain"
- D A long history of diffuse abdominal symptoms and obstipation lasting for several months

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24

A 62-year-old woman visits the doctor's surgery in order to have a routine gynecological examination involving cervix cytology. She has no abdominal symptoms. When examining her vulva you see a brownish discolouration of the labium minus on the right side, see the photo below. What is the most correct thing to do?



- A** Prescribe Aldara and make an appointment for a check-up in 4-6 weeks' time
- B** Order an MRI of the abdomen/pelvis within 2 weeks
- C** Perform a punch biopsy and submit it for an urgent histological examination
- D** Refer to a gynecologist in the clinical pathway of vulvar cancer

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25

You are a GP and a 26-year-old woman visits you with vulvar itching. She is taking contraceptive pills. She says that she has thick, lumpy discharge. What is the most correct thing to do in this case?

- A** You examine her gynecologically, take a vaginal fungal culture test and prescribe antimycotics
- B** You examine her and perform a punch biopsy from the vulva in order to exclude a skin disease
- C** You ask the patient to do a self-test for chlamydia and start treatment if the test is positive
- D** You prescribe local antimycotics and encourage her to contact you again if her symptoms do not improve after a few days

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A 42-year-old woman visits you due to vulvar itching. She is taking contraceptive pills and has regular, but heavy bleeding. When you examine her you find whitish areas around the clitoris and labia minora. What is the most correct thing for you to do in your capacity as a GP?

- A** Ensure that a biopsy of the vulva is taken
 - B** Recommend switching from contraceptive pills to a hormonal coil
 - C** Recommend local antimycotic treatment
 - D** Prescribe a mild local cortisone preparation
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27

What is the gold standard for treating stress incontinence in women?

- A** Sacral nerve stimulation
 - B** Tension-free vaginal tape (TVT) surgery
 - C** Botox injections into the bladder
 - D** Anterior colporrhaphy
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28

You are a stand-in GP. A 16-year old girl visits you. She is suffering from migraine with aura. She also has ADHD and forgets things easily. She has not yet had intercourse, but has a boyfriend and would like to have effective birth control measures. What would be your first choice for this patient?

- A** Contraceptive implant
 - B** Mini pill
 - C** Contraceptive injection
 - D** "Small" hormonal intrauterine device (Kyleena or Jaydess)
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29

A 40-year-old woman comes to you in general practice. She has given birth to 3 children. She has now developed heavy, but regular menstrual bleeding. She wants an effective contraceptive. She has previously used contraceptive pills, and has been very satisfied with them. She smokes a couple of cigarettes a day. The patient has a body mass index of 24. Blood pressure is 120/70. What type of contraception would you rather recommend for this patient?

- A** Hormonal intrauterine device (Mirena)
 - B** Combined contraceptive pills
 - C** Progestogen implant (contraceptive rod)
 - D** Sterilization using Essure (hysteroscopically)
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30

A young couple (22-23 years of age) have actively been trying to become pregnant for 1 month. Intercourse frequency is 2-3 times a week. The chance of a successful outcome is not more than 25-30% for this couple.

What is the most probable cause for the success rate not being higher?

- A** Natural fertility is not higher than this for couples in their early twenties
 - B** The man has very reduced sperm quality
 - C** The couple have a problem with premature ejaculation
 - D** At examination both are testing positive for chlamydia. The woman may therefore have damaged Fallopian tubes
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31

Why does the menopause occur in women?

- A** The number of primordial follicles in the ovaries decreases sharply.
 - B** The production of oestradiol in women drops too much.
 - C** The hormonal interaction between the hypothalamus and the pituitary ceases.
 - D** The production of progesterone drops too much.
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32

As part of the investigation being conducted on a 48-year-old woman for increased vaginal bleeding, a hysteroscopy has been carried out and an endometrial biopsy has been performed at the same time. The histological examination of the endometrial biopsy shows simple atypical endometrial hyperplasia. What is the most correct thing to do next?

- A** Start her on estradiol vaginal tablets
 - B** Make arrangements for a check-up with a transvaginal ultrasound scan and a fluid sonogram in 6 months' time
 - C** Start cyclic progestogen treatment
 - D** Refer her for a hysterectomy at the University Hospital's Department of Gynecological Oncology
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33

You are the GP for a 28-year-old woman who pays you a visit. She gave birth 3 weeks ago and she is exclusively breastfeeding her baby. During the last 3 days she has developed a red, painful breast. When you examine her you find that the breast is red and tender without any signs of fluctuance. Temperature 38.5 °C. She has tried to empty the breast completely without success. What do you do?

- A** You write a prescription for Dicloxacillin for 10 days and instruct her to continue breastfeeding
 - B** You write a prescription for Dicloxacillin for 10 days and instruct her to stop breastfeeding temporarily
 - C** You refer the woman for an ultrasound scan at the breast/surgical endocrinology department.
 - D** You refer the woman to the maternity department for intravenous antibiotic treatment
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34

What is the incidence of spontaneous twins?

- A** 1 in 80 pregnancies
 - B** 1 in 80² pregnancies
 - C** 2 in 80 pregnancies
 - D** 2 in 80² pregnancies
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35

A woman in gestational week 28 is due to give birth for the second time. She has previously been generally fit and healthy and her pregnancy has been normal so far. Pre-pregnant BMI 26. An HbA1c test taken during her first pregnancy check-up was 37 mmol/l (normal). A glucose tolerance test was taken recently and she is now attending for the results, which show the following fasting values: 5.5 (ref. gestational diabetes: 5.3 - 6.9 mmol/l) and 2-hour value 7.5 (ref. gestational diabetes: 9.0 - 11.0 mmol/l). What is most important now to tell this pregnant woman?

- A** You tell to her that you will take a new HbA1c blood test. It is a good idea to have more information about her blood glucose levels over the course of the last few weeks. You also make arrangements for another glucose tolerance test to be carried out during the following week.
 - B** You tell her that you will refer her to the obstetric outpatients clinic, asking if she is in the process of developing gestational diabetes.
 - C** You reassure her. You tell her that since the fasting value is only borderline increased, it being fairly unlikely that she has developed gestational diabetes. You offer to follow-up her pregnancy more closely.
 - D** You provide her with dietary advice and inform her that she has gestational diabetes. You teach her how to monitor her blood glucose levels.
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You are a stand-in GP on a remote island and a 35-year-old woman who is pregnant in week 22 asks for your advice about her genital herpes simplex diagnosis. She received this diagnosis 3 weeks ago from the GP for whom you are standing in, and she has recovered from this now. However, she is worried that her partner has been unfaithful and about complications in her pregnancy. What would be the most correct things to say to her in this situation?

- A** That she would most probably have to have a caesarian section due to the risk of infecting the foetus
 - B** That she has most probably caught the infection from her partner. If she has frequent outbreaks, we would need to consider preventative antiviral treatment during her pregnancy.
 - C** That she could get rid of the virus with antiviral treatment
 - D** That herpes simplex is a sexually transmitted disease, although the time of catching the infection is uncertain. If she has frequent outbreaks we would need to consider preventative antiviral treatment during her pregnancy.
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37

You are a GP and receive a visit from a 29-year-old pregnant woman who is due to give birth for the first time. She would like foetal diagnostic testing to be carried out using non-invasive prenatal testing (NIPT). She asks you for advice. You say that she must make her own decision about this, but that you can provide her with a bit of background information. What is the most correct advice to give her?

- A** Her age-related risk for trisomy 21 is approx. 1:1000. If her routine ultrasound scan in week 12 has normal findings, the risk for trisomy would be halved.
 - B** Her age-related risk for trisomy 21 is approx. 1:100. Normal findings during her routine ultrasound scan in week 12 would not change this risk.
 - C** Her age-related risk for trisomy 21 is approx. 1:1000. Normal findings during her routine ultrasound scan in week 12 would not change this risk.
 - D** Her age-related risk for trisomy 21 is approx. 1:100. If her routine ultrasound scan in week 12 has normal findings, this risk for trisomy would be halved.
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38

Testing for asymptomatic bacteriuria is

- A recommended as part of the general screening programme during the first trimester
 - B only recommended for women with recurrent urinary tract infections
 - C not recommended because it is very rare in Norway
 - D only recommended for women with gestational diabetes
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39

Blood samples for ABO-/RhD-typing are recommended for all pregnant women. What should preferably be done if a woman is RhD negative and is carrying an RhD positive foetus?

- A In such cases this is written in the patient's antenatal health card so that she can receive anti-D prophylactics if a blood sample taken from the umbilical cord after birth confirms an RhD positive newborn
 - B In such cases it is unnecessary to undertake any measures
 - C In such cases routine anti-D prophylactics should be offered in week 28
 - D In such cases this is written in the patient's antenatal health card so that one can consider giving her anti-D prophylactics if she suffers any traumas to the stomach
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Women who have previously had preeclampsia or given birth to a growth restricted fetus should receive extra follow-up during their next pregnancy. Which ultrasound examination is important for this group?

- A Doppler ultrasound scan of the uterine artery during gestational week 24
 - B Ultrasound scan with an assessment of the placental location during gestational week 32
 - C Ultrasound scan with measuring growth every other week from week 18 to 36.
 - D Ultrasound scan during the first trimester which includes measuring nuchal translucency
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You are a GP. The patient is a 34 years old, pregnant for the first time and in gestational week 12 after her last menstrual period. She has previously been generally fit and healthy and does not take any regular medication. Her pre-pregnancy BMI is 35. Good general state of health, no headaches. You take her blood pressure 3 times, with the following results: 150/95, 158/97, and 165/95, respectively. Urine dipstick test: protein 1+ (not morning urine). What is the correct thing to do in this case?

- A You put her on 24-hour blood pressure monitoring. You ask her to return the following day for the results to be read. You then consider referral to the obstetric outpatients clinic.
 - B You reassure her. You say that it is normal to have elevated blood pressure during the early stages of pregnancy. Based on physiological changes during pregnancy a woman's blood pressure will gradually drop once she enters the second trimester.
 - C You recommend that she should have her blood pressure checked again in one week's time
 - D You tell the patient that she has developed preeclampsia. You refer her to the obstetric outpatients clinic and ask for an assessment during the course of the day or the following day.
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42

Ida (29 years old) is pregnant for the first time. She has checked out various websites for pregnant women and is feeling very confused by all the information she finds. She has a BMI of 35 and wonders if it is correct that she has an increased risk for many of the complications of pregnancy. Which of the complications below is Ida at increased risk of getting based on her BMI?

- A Anaemia
 - B Breech delivery
 - C Early spontaneous miscarriage
 - D Precipitate labour
-

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43

Which treatment is the most effective in preventing postpartum bleeding?

- A** Early clamping of the umbilical cord when the child is born
 - B** Oxytocin receptor antagonist (Tractocile®) when the child is born
 - C** Oxytocin receptor agonist (Syntocinon®) when the child is born
 - D** Planned cesarean section
-

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44

Which 4 examination methods are most useful when diagnosing diseases in the thyroid and parathyroid

- A** Clinical examination, blood tests, MRI and fine-needle aspiration
 - B** Clinical examination, blood tests, CT scan and core needle biopsy
 - C** Clinical examination, blood tests, PET scan and core needle biopsy
 - D** Clinical examination, blood tests, ultrasound and fine-needle aspiration
-

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45

You are working as a GP and now have a 75-year-old man in your office. His wife discovered a lump on his neck two weeks ago. The lump has grown in size since then. The patient has developed a hoarse voice during the past week. He has recently been short of breath, particularly when he lies flat in bed. Upon examination you palpate a firm, fixated swelling corresponding to the right thyroid gland. Otherwise no findings. What do you do now?

- A** Refer him to the chest/surgical endocrine clinic for an examination of nodules in the thyroid gland
 - B** Refer him to the ear, nose and throat (ENT) outpatient clinic
 - C** Referral to the chest/surgical endocrine clinic for a patient pathway for thyroid cancer
 - D** Order thyroid hormone tests and arrange for a check-up in one weeks' time
-

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46

Triple diagnostics is a term that is used for diagnosing tumours in the breast. Triple diagnostics consists of:

- A** Clinical examination + mammogram/ultrasound + cytology/biopsy.
 - B** Clinical examination + PET scan + biopsy
 - C** Case history + MRI of the breast + biopsy
 - D** Case history + mammogram/ultrasound + diagnostic excision.
-

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47

A 28-year-old woman who is breastfeeding has developed a tender, red swelling in her breast during the last three days. You palpate a 3x3 cm swelling laterally in the breast. Leucocytes: 17 (normal 4-10) and CRP: 150 (normal <5). What is the likely diagnosis?

- A** Abscess.
 - B** Inflammatory breast cancer.
 - C** Galactoceles.
 - D** Fibroadenoma.
-

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48

A 43-year-old man is referred from the Department of Endocrinology to you in the Endocrine surgery outpatient clinic. At the Department of Endocrinology, he has been diagnosed with primary hyperparathyroidism. Parathyroid scintigraphy confirms a parathyroid adenoma caudal in the right thyroid lobe. You undertake an ultrasound scan which confirms the location of the adenoma. Which surgical technique is most suitable in this case?

- A** Minimally invasive surgery under general anaesthesia.
 - B** Right-sided hemithyroidectomy.
 - C** Full neck exploration.
 - D** Minimally invasive surgery under local anaesthesia
-

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49

A 50-year-old man is admitted with stomach pain and a CT scan is taken of his abdomen which by chance shows a large 5 cm adrenal tumour. It is heterogenous and hypervascular with a high density. It is decided that this should be surgically removed.

Which tests should you receive an answer to before you give the go-ahead for surgery?

- A** Metanephrines
 - B** ACTH and cortisol
 - C** Aldosterone and renin.
 - D** There is no need for any tests. The tumour must be removed anyway.
-

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50

A 40-year-old woman visits you, her GP, because she is suffering from fatigue and has low energy levels. Tests are taken which show free T4 levels of 15 pmol/l (ref. 12.2-19.6) and a TSH level of 4.7 mIU/L (ref. 0.5-4). Anti-TPO levels are normal. What would you do?

- A** Start on a low dose of levothyroxin (Levaxin), e.g. 25 mcg x1
 - B** Requisition an ultrasound scan of the thyroid as part of any further investigations
 - C** Start on a full dose of levothyroxin (Levaxin), 1.6 mcg per kilo of body weight.
 - D** Repeat the tests after 3-4 weeks
-

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51

A 50-year-old man is diagnosed with severe hypertension with a blood pressure of 180/100. He is not taking any regular medication. His aldosterone level is 240 pmol/l his renin level is 4 mIU/L, giving an aldosterone-renin ratio of 60 (normal <35). His tests are repeated with more or less similar findings. What would you have done next?

- A** Adrenal venous sampling
 - B** No need for any further investigation, but direct start-up with spironolactone.
 - C** CT scan of the adrenals
 - D** Saline infusion test
-

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52

A patient is diagnosed with hypercortisolism with typical clinical findings and confirmed biochemical hypercortisolism. No detectable ACTH <0.1 pmol/l (ref. <10.2 pmol/L). What would be the next step to take when investigating this patient?

- A** Sinus petrosus sampling
 - B** CT scan of the whole body
 - C** CT scan of the adrenals
 - D** MRI of the pituitary gland
-

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53

A 71-year-old woman has had type 2 diabetes for 8 years. No cardiovascular disease, BMI 24.1 kg/m². She is taking Metformin 1 g x 2 and NPH insulin (Insulatard/Humulin) 18 U x 2. She attends the GP's surgery for a diabetes check-up.

Her HbA1c level is 63 mmol/mol (ref. 28-40). She monitors her blood glucose levels 3 times each day. During the past week she has had fasting glucose levels of 8-9 mmol/l, glucose before supper 9-10 mmol/l and before bedtime 12-15 mmol/l. You think that her HbA1c and blood glucose levels are too high and therefore want to adjust her insulin treatment. What do you do?

- A** You add fast-acting insulin and instruct her to inject 4 units when her blood glucose level is >10 mmol/l
- B** You switch from NPH-insulin to a long-acting insulin analogue - dosage 36 U x 1 (morning)
- C** You add fast-acting insulin and instruct her to inject 4 U before all meals.
- D** You increase her doses of NPH-insulin to 20 U x 2 and instruct her to increase them even more if her blood glucose levels before meals remain at >8 mmol/l.

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54

What is the most common cause of hypocalcaemia?

- A** Drug-induced
- B** Hypoparathyroidism
- C** Vitamin D deficiency
- D** Hypomagnesaemia

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55

A 20-year-old previously healthy man is admitted as an emergency case. He lives alone and was found by his work colleagues after he failed to turn up for work. The colleague who spoke to the ambulance personnel said that they had been worried about his weight loss and had noticed that he was always thirsty after starting his apprenticeship a few weeks ago. He was somnolent upon admittance.

His blood ketone test level is 6 mmol/l (normal <0.6 mmol/l, ketoacidosis >3.0 mmol/l). His arterial blood gas test showed a glucose level of 37 mmol/l (ref. 4-6.3), bicarbonate 2.7 mmol/l (21-27), pH 7.02 (7.38-7.46) and Na 124 mmol/l (137-145). You conclude that he has severe ketoacidosis and commence treatment in accordance with the procedures.

Which statement about treatment and follow-up of diabetic ketoacidosis is correct?

- A** One should stop the insulin infusions if the potassium levels are too low
- B** One should ensure that sodium levels are not corrected too quickly
- C** One should ensure that effective osmolality is not corrected too quickly
- D** The aim should be to correct glucose levels to the normal range within 12 hours

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56

A 82-year-old woman comes for an osteoporosis check-up. She has been treated with Alendronate and Calcigran forte 1000mg/800IE for almost 10 years. Her bone density test gives a T-score of -3.0 in the lumbar column, -2.7 in the femoral neck and -2.3 in total hip. She has not had any fractures during the last five years.

Which treatment would you now give this patient in addition to Calcigran forte for her osteoporosis?

- A** Teriparatide (PTH-analog)
- B** Continue taking Alendronate
- C** Denosumab (Prolia)
- D** Intravenous zoledronic acid

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57

A 57-year-old woman has had an MRI of her head as part of her tinnitus investigation. A large pituitary adenoma is found, which is reaching up to and lifting the optic chiasm and also growing into the left sinus cavernosus. Supplementary blood tests show a prolactin level of 19 400 mIU/l (ref. 63 - 533). A visual field test shows mild bilateral visual field defects.

Which treatment should primarily be chosen?

- A Treatment with a dopamine agonist
- B Pituitary surgery within 1-2 weeks
- C Pituitary surgery before post-operative radiation treatment
- D Treatment with a dopamine antagonist

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58

Which statement is correct in respect of late-onset diabetic complications?

- A If a diabetes patient manages to switch from poor blood glucose control (e.g. HbA1c 90 mmol/mol) to good blood glucose control (e.g. 50 mmol/mol) within a very short time, this will reduce the risk of late-onset diabetic complications.
- B Strict blood glucose control is compulsory for everyone with diabetes, regardless of whether or not this results in more hypoglycaemic episodes
- C Some people are more susceptible to developing late-onset diabetic complications and will develop complications even when blood glucose levels are reasonably well controlled, but for most diabetics it is correct that the lower the average blood glucose and HbA1c levels, the lower the risk of late-onset complications.
- D Patients with diabetes whose blood glucose levels are reasonably well controlled will not develop any late-onset complications

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59

A 30-year-old woman has been on holiday in Thailand. 5 days after returning home, she gets a high temperature (40 °C), severe headache, especially retro-orbitally, and has intense muscle and joint pain. During the past day she has developed a maculopapular rash on her torso. She says she got several mosquito bites at midday while she was on a shopping spree in town. She has drunk sterile water and not eaten any salad or unwashed vegetables. She has had the flu vaccine.

What is the most likely diagnosis?

- A Typhoid fever
- B Dengue fever
- C Malaria
- D Rickettsiosis

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60

Many sepsis patients suffer from impaired consciousness. This is also an important criterion in the definition of sepsis (SOFA score).

What is the most common physiological explanation behind this symptom in sepsis patients?

- A Impaired temperature centre in the hypothalamus when a high temperature
- B Side effect of noradrenalin
- C Reduced blood flow in the brain
- D Inflammation in the brain with encephalitis

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61

A 65-year-old man is admitted with the following: BP 80/50, pulse 125, respiratory rate 35. You discover that he has a swollen, red knee joint and you think that it could be the focus of the infection. Which type of antibiotic treatment would you initiate for this patient?

- A Penicillin i.v. + gentamicin i.v.
- B Cloxacillin i.v. + gentamicin i.v.
- C Ampicillin i.v. + gentamicin i.v.
- D Penicillin i.v. + ciprofloxacin i.v.

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62

Basic infection control precautions are a set of key concepts in respect of infection control. Basic infection control precautions are defined as a set of precautions to prevent the spread of infections in health institutions.

Which statement is the most correct about basic infection control precautions?

- A Basic infection control precautions should be used for all patients at all times
- B Basic infection control precautions should primarily be used when there is contact with bodily fluids
- C Basic infection control precautions are primarily used for patients with MRSA or other resistant microbes
- D Basic infection control precautions should be used by nurses in their daily activities with patients

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63

A 39-year-old healthy woman with a BMI of 32 kg/m² is in week 12 of her first pregnancy, which has been uncomplicated. A blood test showed an HbA1c level of 56 mmol/mol. How should the woman be followed up?

Reference range for HbA1c: 28 - 40 mmol/mol

- A She should be referred immediately to the relevant specialist
- B She should be checked more frequently by her GP (approx. every 2nd week), including monitoring her HbA1c levels
- C A glucose tolerance test should be carried out
- D She should attend the usual pregnancy check-ups

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64

A 53-year-old overweight woman with south-east-Asian ethnic origins and a suspected high clinical risk of developing diabetes mellitus (DM) has a blood test showing a HbA1c level of 55 mmol/mol. What is the recommended follow-up for this patient?

Reference range for HbA1c: 28 - 40 mmol/mol.

- A A glucose tolerance test should be carried out as soon as possible in order to clarify if the patient has DM.
- B Annual HbA1c tests should be carried out due to her elevated risk of developing DM.
- C Fasting blood glucose levels should be measured as soon as possible in order to clarify if the patient has DM.
- D Another HbA1c test should be carried out as soon as possible in order to clarify if this patient has DM.

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65

You are the on-call doctor in a department of medicine. You receive a call from a nurse on the ward about a patient who has been administered intravenous ampicillin and gentamicin for suspected pyelonephritis. The patient is improving after commencing treatment, but the nurse informs you that they have received the results of the bacteriological culture taken of his urine sample:

Growth of 100000 (10⁵) CFU/ml *Escherichia coli*

Sensitive to gentamicin, piperacillin-tazobactam and meropenem

Resistant to ampicillin, cefotaxime and ceftazidime

How should you interpret these findings, and what consequences do they have for treating the patient?

- A Significant bacterial growth with a resistance profile consistent with MRSA bacteria. You want to continue gentamicin and initiate infection control measures.
- B Significant bacterial growth with a resistance profile consistent with ESBL-producing bacteria. You want to change the treatment to meropenem and initiate infection control measures.
- C Non-significant bacterial growth with a resistance profile consistent with ESBL-producing bacteria. You want to continue ampicillin and gentamicin and do not initiate any infection control measures.
- D Significant bacterial growth with a resistance profile consistent with ESBL-producing bacteria. You wish to continue gentamicin and start infection control measures.

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66

You are working in a GP's office and receive a 78-year-old woman displaying symptoms of a lower urinary tract infection. The patient takes her own mid-stream urine test which you send to the laboratory for a bacteriological culture. You commence treatment with pivmecillinam (Selexid). The next day you receive the following results from the urine test:

Growth of 1000 (10^3) CFU/ml *Enterobacter cloacae* and 100 (10^2) *Enterococcus faecium*

You call the patient who tells you that she no longer has any pain when urinating, but that she may possibly still have slightly more frequent urination

How should you continue to treat this patient?

- A Continue with the existing treatment since the patient is showing good clinical effects
- B Stop treatment since the growth of two microbes indicates a contaminated sample
- C Change her treatment to nitrofurantoin which could work on both bacteria
- D Change her treatment to trimetoprim which could work on both bacteria

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67

You are working in a GP's office and receive a 32-year-old man who moved from Kenya to Norway 16 months ago. He says that he has been suffering from blood in his urine for some time. Otherwise he has no symptoms. You remember from your medical studies that *Schistosoma haematobium* could cause hematuria and that the parasite is found in Kenya.

How should you instruct this patient in taking a urine sample for analysing *Schistosoma haematobium*?

- A The sample should be taken in the evening (after 2000 hrs). Collect approx. 20 ml of the middle part of the flow of urine in the test tube.
- B The sample should be taken in the morning (first urination of the day). Collect approx. 10 ml of the middle part of the flow of urine in the test tube.
- C The sample should be taken in the middle of the day (between 1000 and 1400 hrs). Collect approx. 10 ml of the middle part of the flow of urine in the test tube.
- D The sample should be taken in the middle of the day (between 10.00 and 14.00 hrs). Collect approx. 20 ml of the end of the flow of urine in the test tube.

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68

In your capacity as a GP you are contacted by a public health nurse about one of your elderly patients who is suffering from frequent urinary tract infections. During the past 12 months she has had several courses of antibiotics for suspected lower urinary tract infections, but her symptoms always return shortly after completing each treatment. During the same period several urine samples have been taken for bacteriological culture. You go through the old test results and see that there are two microbes which keep appearing:

Staphylococcus epidermidis og *Candida albicans*

How would you best interpret this growth, and how should it affect your assessment of any further treatment?

- A The urine samples have only shown secondary pathogenic microbes. You will therefore consider optimisation of the sampling method, including using a disposable catheter, and other causes of the symptoms.
- B The urine samples have only shown secondary pathogenic microbes. You will therefore consider treating these due to the recurrent symptoms.
- C The urine samples have only shown doubtful pathogenic microbes. You will therefore consider treating these due to the recurrent symptoms.
- D The urine tests have only shown doubtful pathogenic microbes. You will therefore consider optimisation of the sampling method, including using a disposable catheter, and other causes of the symptoms.

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69

A 36-year-old woman with known primary hypertension contacts you, her GP, because she has recently become pregnant. She is taking a low dose of an angiotensin-2 antagonist. BP 135/85 mmHg. What is the correct thing to do?

- A** Discontinue her antihypertensive treatment and monitor her BP
 - B** Continue with no changes in her treatment
 - C** Replace her angiotensin 2-antagonist with labetalol (Trandate) and possibly a calcium antagonist
 - D** Increase her dose of her angiotensin-2 antagonist to the maximum dose
-

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70

When defining chronic kidney disease one wants to both specify the degree of reduced kidney function and the degree of risk of progression to severe/dialysis-dependent kidney failure. Which of the following proposals is most suitable for defining chronic kidney disease in patients in general practice?

- A** GFR measured as plasma clearance of radioactive-labelled EDTA
 - B** Serum-creatinine and urine dipstick test measured twice at 3 monthly intervals
 - C** Estimated GFR and albumin/creatinine ratio in spot urine measured twice at 3 monthly intervals
 - D** Serum-creatinine measured twice at 3-monthly intervals
-

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71

A 40-year-old woman attends the renal outpatients clinic for a check-up. She has been diagnosed with glomerulonephritis after a kidney biopsy. She is being treated with an ACE-inhibitor due to high blood pressure and in order to reduce proteinuria. Her progress has been slow. At her last check-up she had the following results: creatinine 300 µmol/L (ref. 45 - 90), eGFR 19 ml/min (ref. ≥90), potassium 5.0 mmol/L (ref. 3.6-4.6). She says that she is slightly more tired than previously, but is doing a full-time job. What measures would now be best?

- A** Consider starting dialysis
 - B** Start looking into having a kidney transplant
 - C** Refer her for dialysis; AV (arteriovenous) fistula or PD (peritoneal dialysis) catheter
 - D** Continue the same treatment and re-assess her case when her eGFR is 15 ml/min
-

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72

A 42-year-old woman has been referred for a kidney biopsy due to appearance of nephrotic syndrome with substantial oedema. Her biopsy shows normal findings on light microscopy, but electronmicroscopy reveals flattened podocytes. What is the most likely diagnosis?

- A** Hypertensive nephropathy
 - B** IgA neuropathy
 - C** Minimal change nephropathy
 - D** Membranous nephropathy
-

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73

An 83-year-old man is diagnosed with hypertension (average of 165/89 at several consultations). He has previously been mainly fit and healthy and lives at home with his spouse. No regular medication. Normal findings in his blood and urine samples. Which measure is the most correct?

- A No indications for starting antihypertensive treatment because the overall cardiovascular risks are not particularly high.
- B Start treatment with low-dose thiazide, eg. Moduretic mite 1 tbl x1.
- C No indications for starting antihypertensive treatment due to the fact that he is over 80 years old.
- D Start treatment with a moderate dose beta blocker, e.g. Metoprolol 100 mg x1.

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74

A 70-year-old man had a small myocardial infarction 6 year ago. He has not had angina pectoris afterwards, but during the past year he has started to have mild dyspnoea on exertion and also experiences considerable pain and stiffness in his calves when he walks for 300 metres. He smokes 5 cigarettes per day and has a body mass index (BMI) of 27.5. He is not currently taking any medication. He has not had a medical check-up during the past 4 years. He is now seeking help for his complaints and after the consultation you have the following information:

Hb 13.5 g/dl (ref: 13.5 - 17.4);

s-cholesterol 5.7 mmol/l (ref: 4.4 - 8.6);

s-glucose 6.3 mmol/l (ref: 3.5-5.5);

s-creatinine 220 µmol/l (ref: 60 - 120);

Urine dipstick: Erythrocytes neg, leucocytes neg, albumin 3+;

His blood pressure is 170/82. You are thinking about starting treatment with Lisinopril 20 mg x1 (an ACE inhibitor) and discuss the problem with a colleague.

What should your colleague advise you to do?

- A The patient should start taking Lisinopril 10 mg x1 and his s-potassium and s-creatinine levels should be measured after 1 week
- B Possible renal artery stenosis and severe kidney failure are strong contraindications for using ACE inhibitors so the patient should instead start taking Norvasc 10 mg x1 (a calcium channel blocker)
- C The patient should start taking Selo-Zok 100mg x1 (a betablocker) and Furix 20mg x2 (a loop diuretic) due to his previous heart attack and in order to reduce his blood pressure
- D The patient probably needs to start dialysis over the course of the next month so he should be referred to a nephrologist who can provide urgent help in respect of preparing the commencement of dialysis

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75

A 71-year-old man has chronic stage 4 kidney disease, probably caused by hypertension. During the last couple of years his Hb levels have gradually dropped. The following results were obtained at his last check-up: low Hb 10.2 dl (ref. range 13.4-17.0). He has no symptoms and his hemofec test was negative. Upon examination the following values were obtained:

	Result:	Ref. range
Hb (g/dl)	9.7	13.4-17.0
MCH (pg)	27.9	27.1-32.6
MCV (fl)	83	81-95
Iron (µmol/l)	12	9-34
Transferrin saturation	15	15-57
Ferritin (µg/l)	80	20-167

What would be the correct measures to start with?

- A** Admit him for a transfusion
 - B** Start oral iron supplements
 - C** Start erythropoietin
 - D** Refer him for a gastroscopy, possibly supplemented with a colonoscopy if no focus for bleeding is found
-

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76

A 68-year-old previously healthy man is admitted with melena. He has had black faeces during the last few days and has felt unwell. BP on admittance 80/55, p 110.

Lab tests on admittance: Hb 7.3 g/dl (ref. range 13.4-17.0), creatinine 450 µmol/l (ref. range 60-105), eGFR 8 (ref. range ≥90)

A gastroscopy shows an ulcer that is treated and he is given a blood transfusion.

At his check-up 2 weeks later his creatinine level is µmol/l, eGFR 12

What is the most likely cause of his kidney damage?

- A** Acute tubulointerstitial nephritis
 - B** Membranous nephropathy
 - C** Acute tubular necrosis
 - D** ANCA vasculitis
-

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77

Angiotensin Converting Enzyme inhibitors (ACE inhibitors) have many different effects in various types of tissue, but their effects on the kidneys are central. What is their mechanism of action on the kidneys?

- A** ACE inhibitors dilate the efferent arterioles in particular, causing a reduction in intraglomerular pressure while the blood flow through the kidneys is kept relatively constant
 - B** ACE inhibitors dilate the afferent and efferent arterioles so that the patient has reduced hyperfiltration and a better prognosis
 - C** ACE inhibitors can cause acute damage to the kidneys because they reduce the supply of oxygen to the deeper parts of the medulla
 - D** ACE inhibitors constrict the afferent arterioles in particular, causing a reduction in intraglomerular pressure while reducing the flow of blood through the kidneys
-

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78

An 82-year-old woman with COPD, moderately overweight, type 2 diabetes mellitus and end-stage kidney failure with an eGFR of 10 ml/min.

Her nearest dialysis centre is a 2-hour journey each way.

Both she and her family want dialysis treatment.

What type of treatment would be best for her?

- A** Home hemodialysis (HHD)
 - B** Conservative treatment (no dialysis)
 - C** Hemodialysis (HD) at the hospital because PD is contraindicated in cases of diabetes mellitus type 2
 - D** Peritoneal dialysis (PD)
-

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79

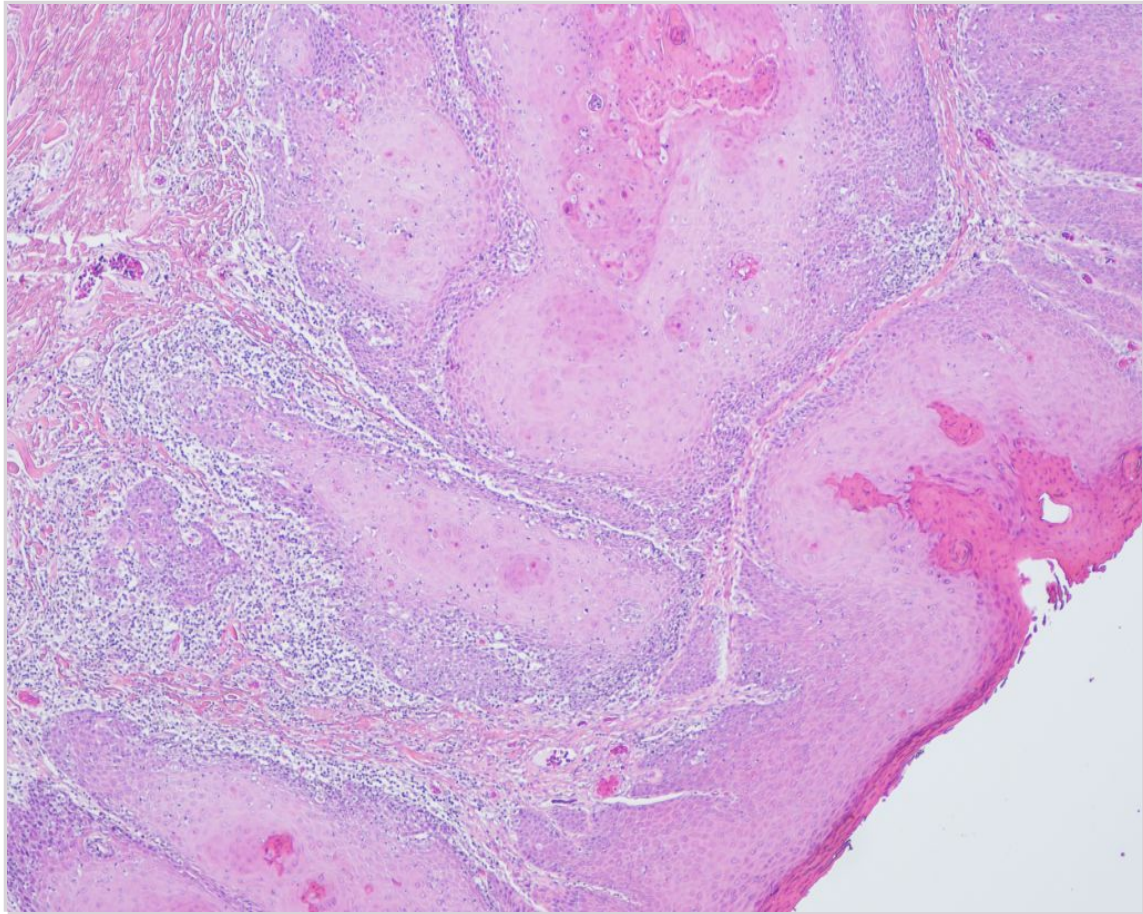
Various pathological processes can affect the glomeruli and produce different clinical pictures. What is typical for nephritic syndrome?

- A** Diffuse thickened glomerular basement membrane
 - B** Proliferative and inflammatory glomerular affectation
 - C** Focal and segmental glomerulosclerosis
 - D** Damage to the podocytes' pedicels
-

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80

A 69-year-old woman has suffered from lichen sclerosus for 15 years. She now has a sore on her left labia majora that will not heal. The area with changes is surgically removed. Below is a picture taken from the resected tissue (hematoxylin and eosin stained section which has been magnified 40 X). What is the most likely diagnosis?



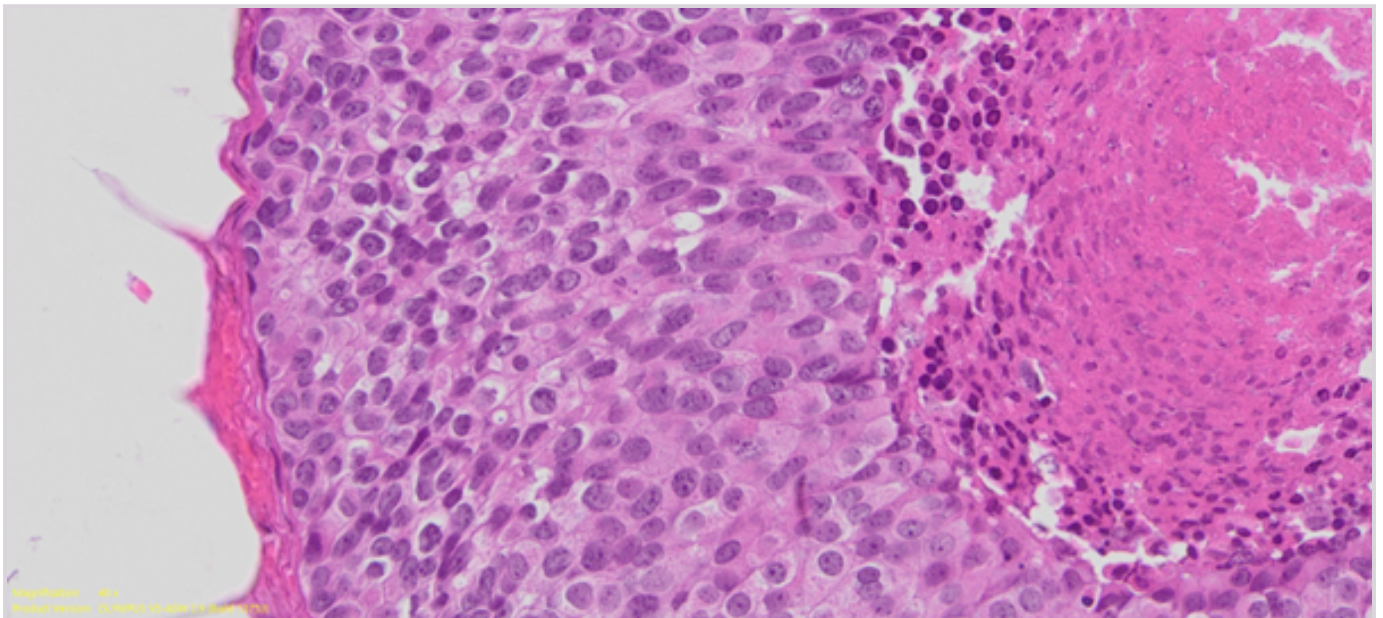
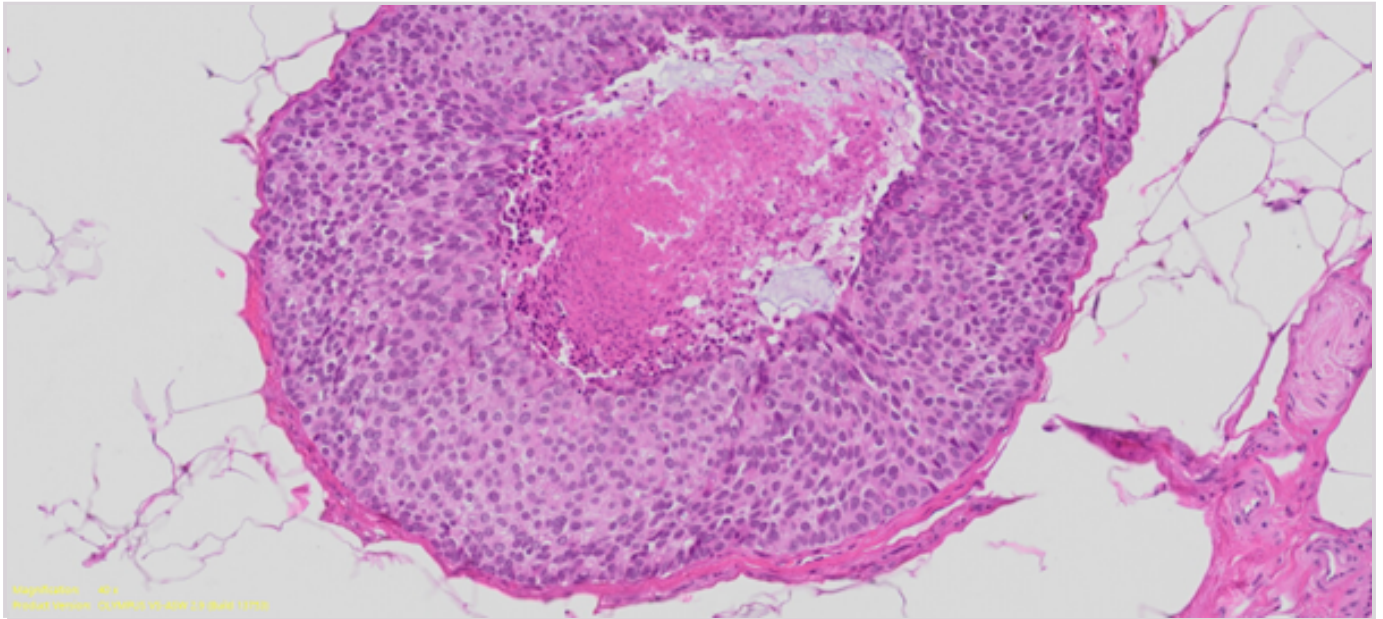
- A** Adenocarcinoma
- B** Lichen sclerosus and condyloma
- C** Plate epithelial carcinoma
- D** Plate epithelial hyperplasia and reactive epithelial cell changes

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81

A 60-year-old woman underwent surgery after calcifications were seen on a mammogram. Part of her breast was removed. Below are two photos with different magnification taken from the same breast lesion.

What is the diagnosis?



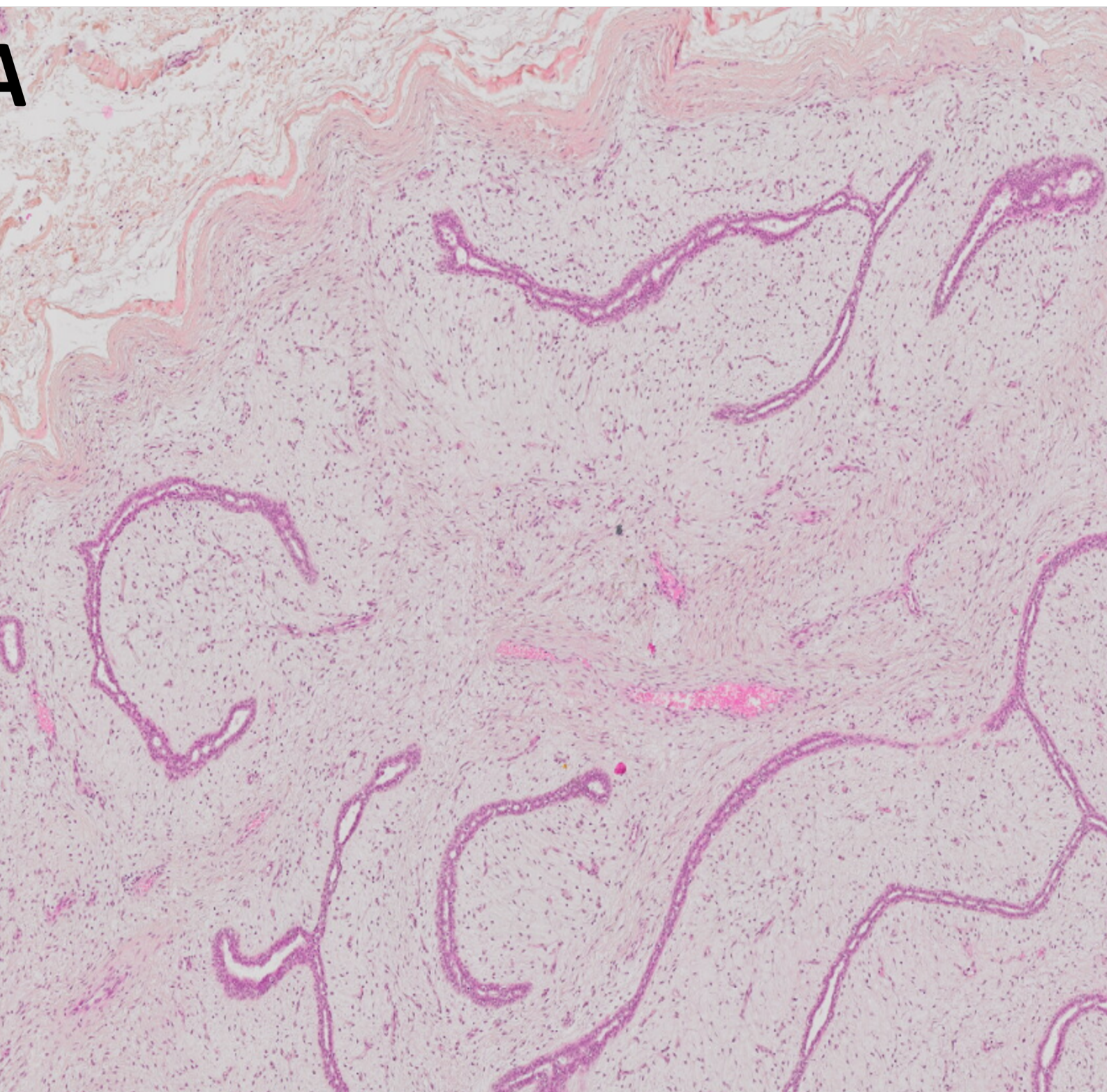
- A Infiltrating ductal carcinoma
- B Ductal carcinoma *in situ*
- C Mucinous carcinoma
- D Infiltrating lobular carcinoma

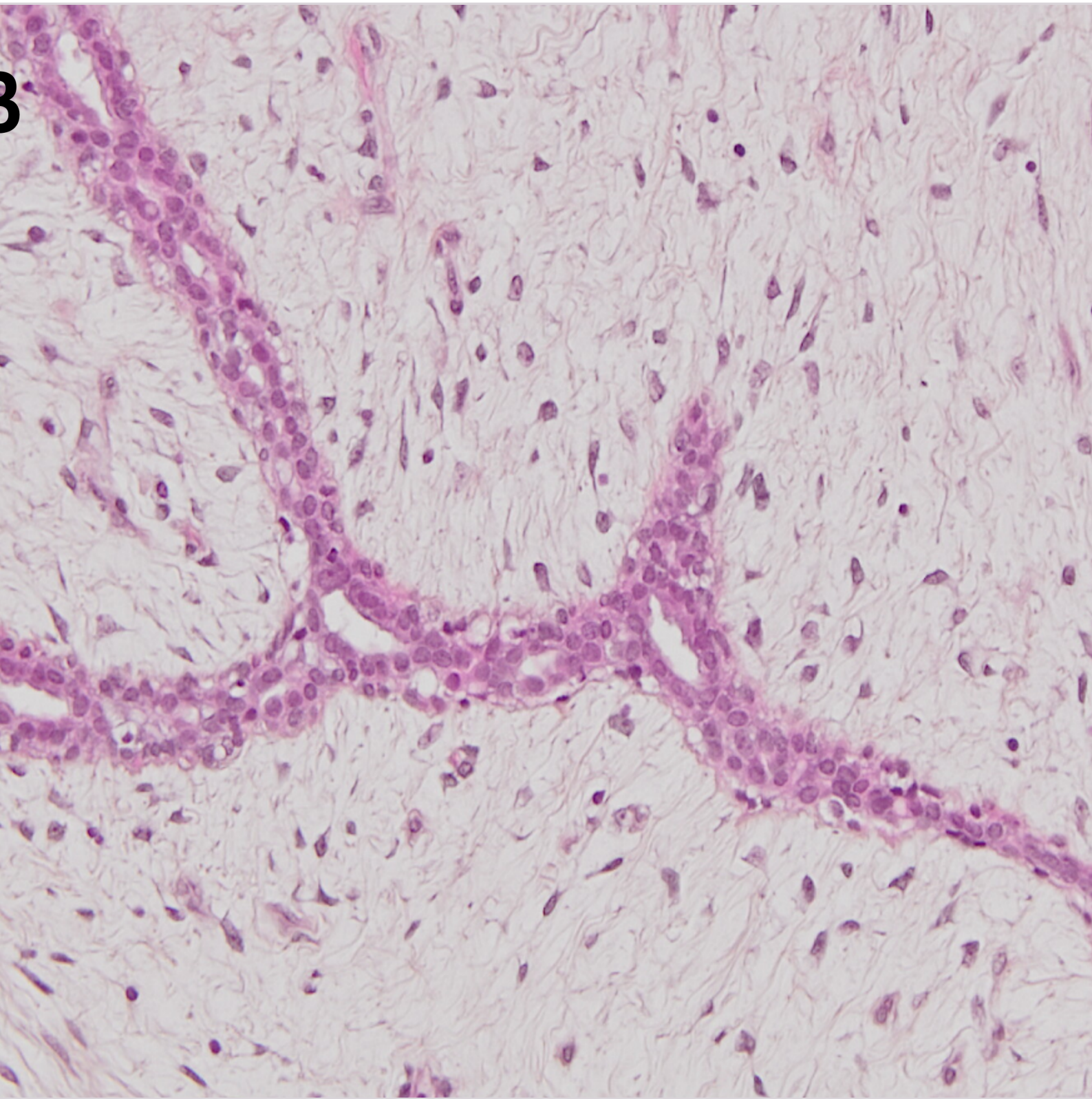
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82

A 34-year-old woman has a 3 cm diameter tumour in her left breast. It is surgically removed and the pictures show a hematoxylin-erythrosine-saffron (HES) stained histological section from the tumour. Photo A: low magnification. Photo B: high magnification. Which diagnosis best fits the findings shown on the photos?

A





- A Ductal carcinoma in situ (DCIS)
- B Infiltrating carcinoma
- C Fibroadenoma
- D Lobular carcinoma in situ (LCIS)

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83

What characterises serous borderline ovarian tumours?

- A The cyst contents are often mucilaginous.
- B There are small foci with infiltrative growth.
- C The cells contain copious light cytoplasm.
- D The epithelium is atypical.

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84

A 68-year-old man was referred for an examination due to hematuria and nagging pain in his back. Several biopsies were taken from changes in his bladder mucosa. The photos are from a histopathological section of the biopsy taken from the bladder mucosa (hematoxylin-erythrosine-saffron (HES), A x200; B x100).
What do the photos show?

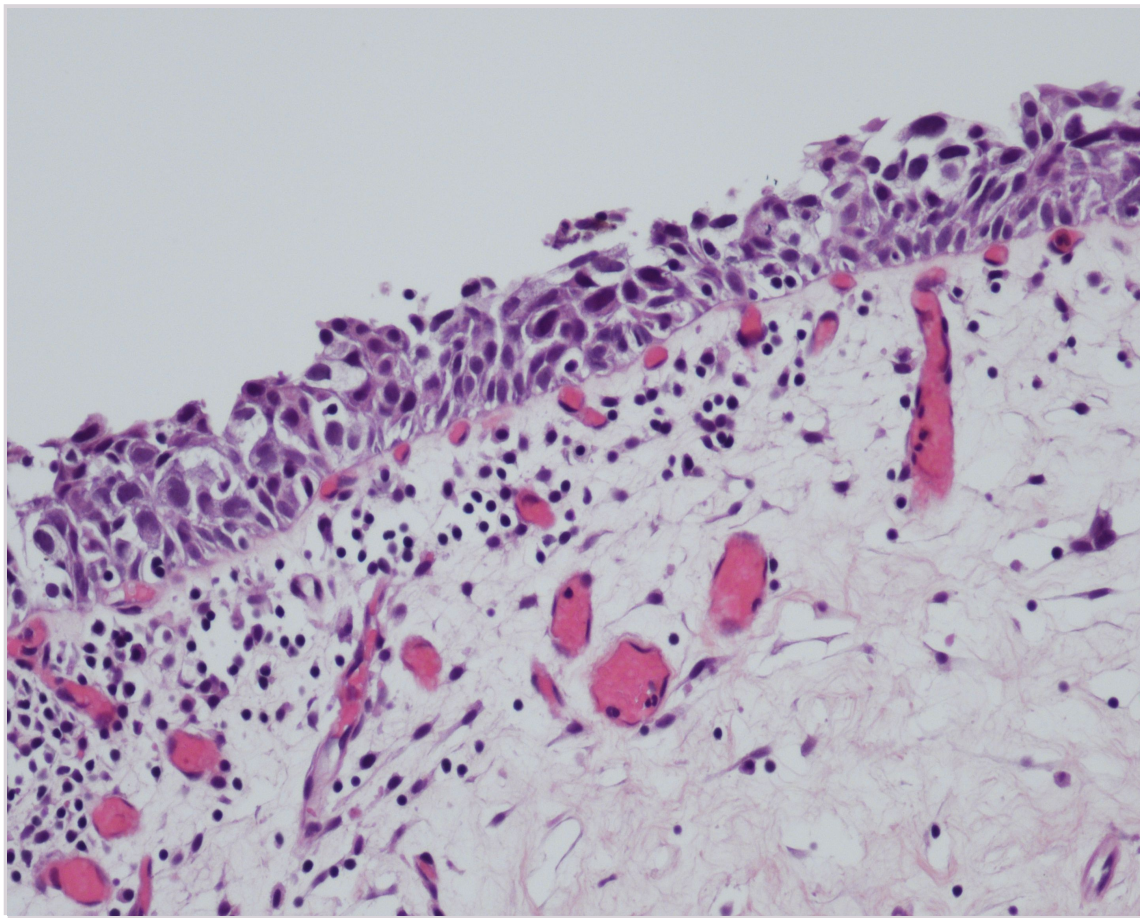


Photo A

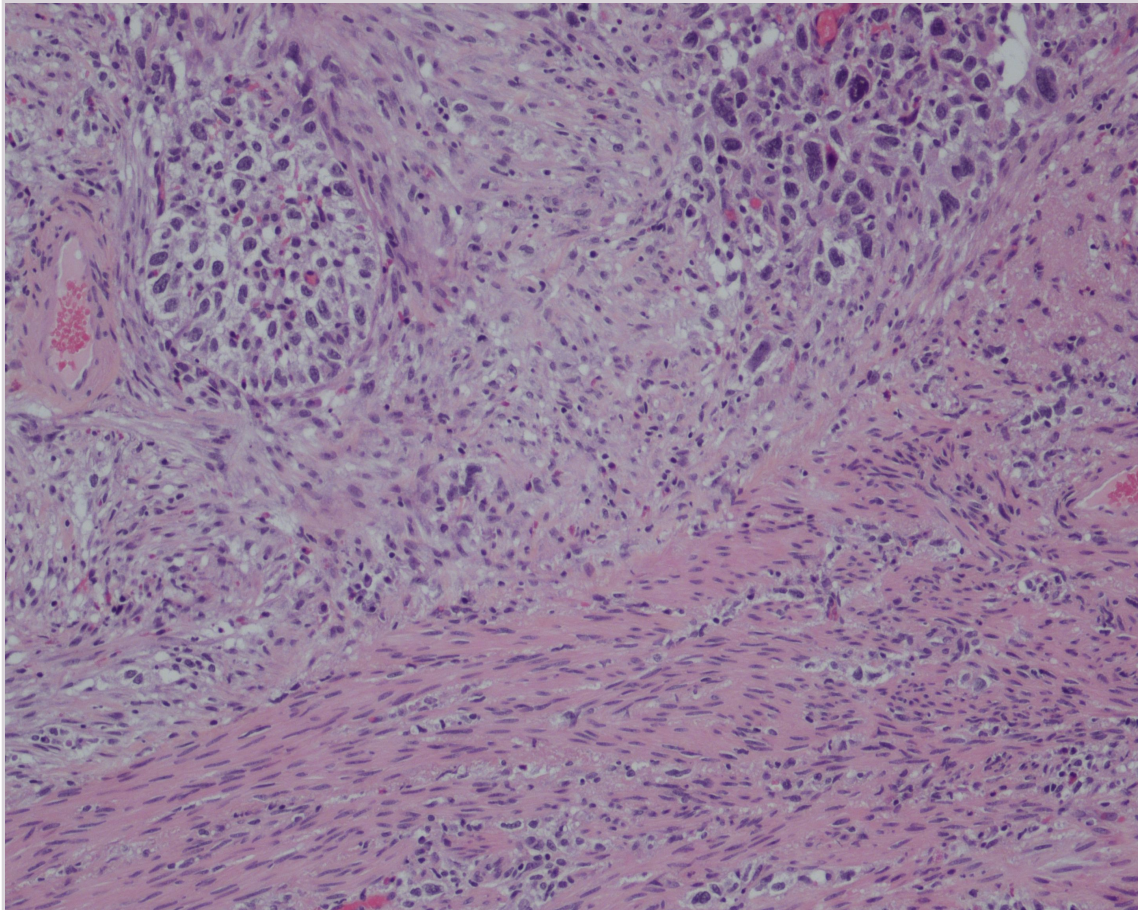


Photo B

- A** Biopsies from the urinary bladder with granulomatous inflammation.
- B** Biopsies from the urinary bladder with carcinoma in situ and poorly differentiated infiltrating urothelial carcinoma.
- C** Biopsies from the urinary bladder with chronic inflammation and reactive changes.
- D** Biopsies from the urinary bladder with papillary urothelial neoplasm of low malignant potential (PUNLMP).

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85

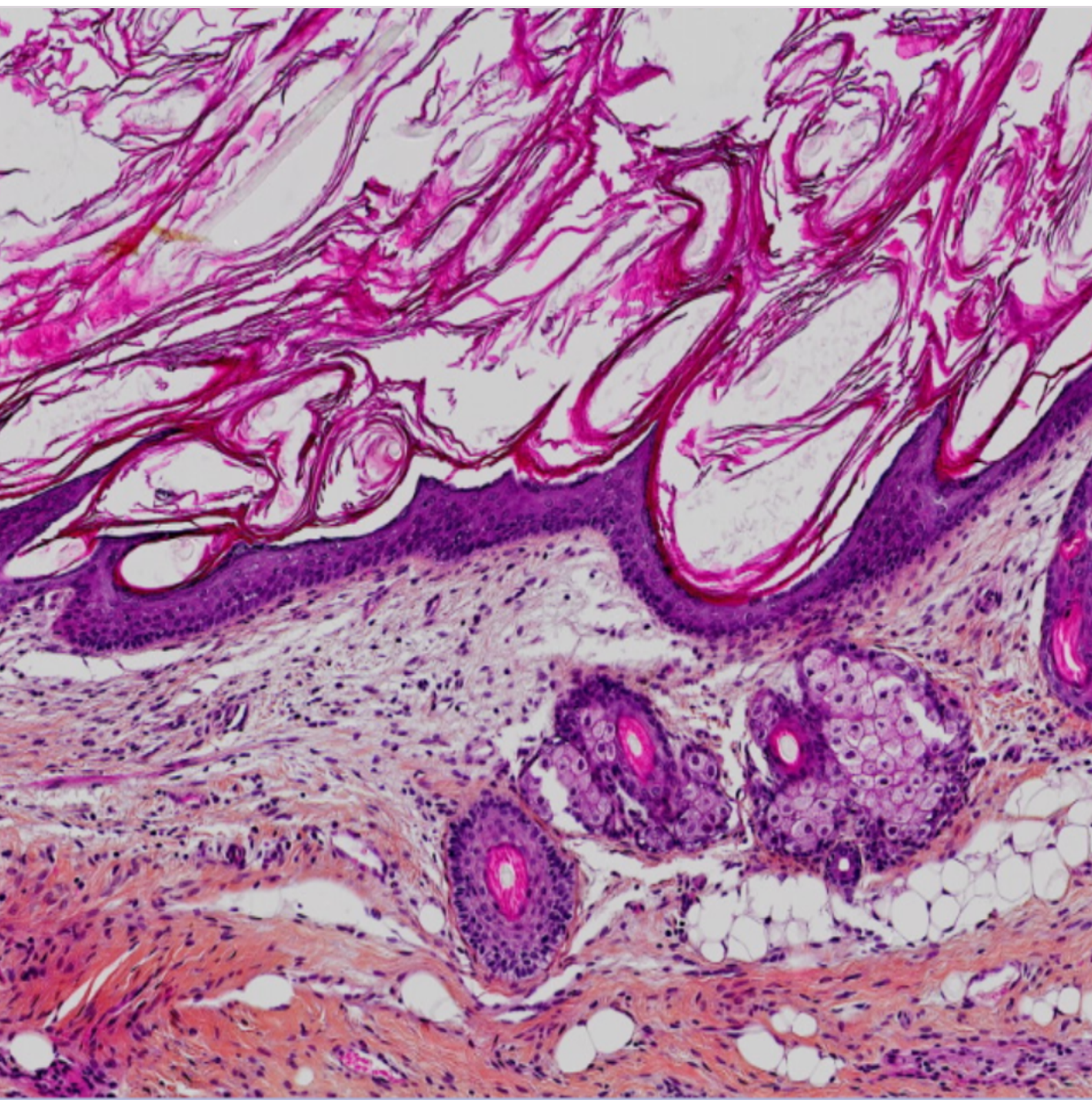
What does agenesis mean, in the context of organs and tissues?

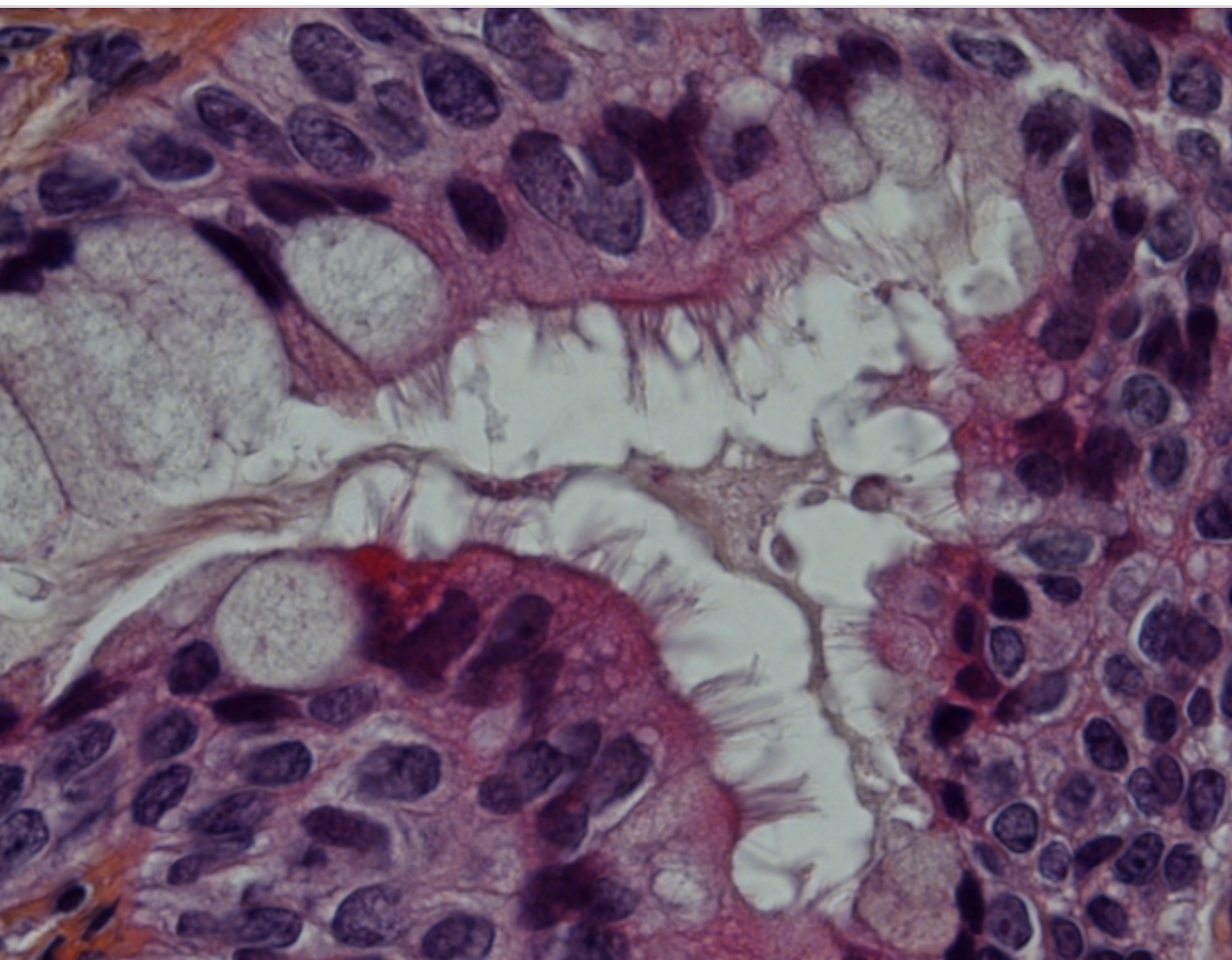
- A** The organ lacks an opening.
- B** The organ is missing.
- C** Normal appearance of cells/tissue in an abnormal location.
- D** A reduced number of cells, leading to a smaller organ.

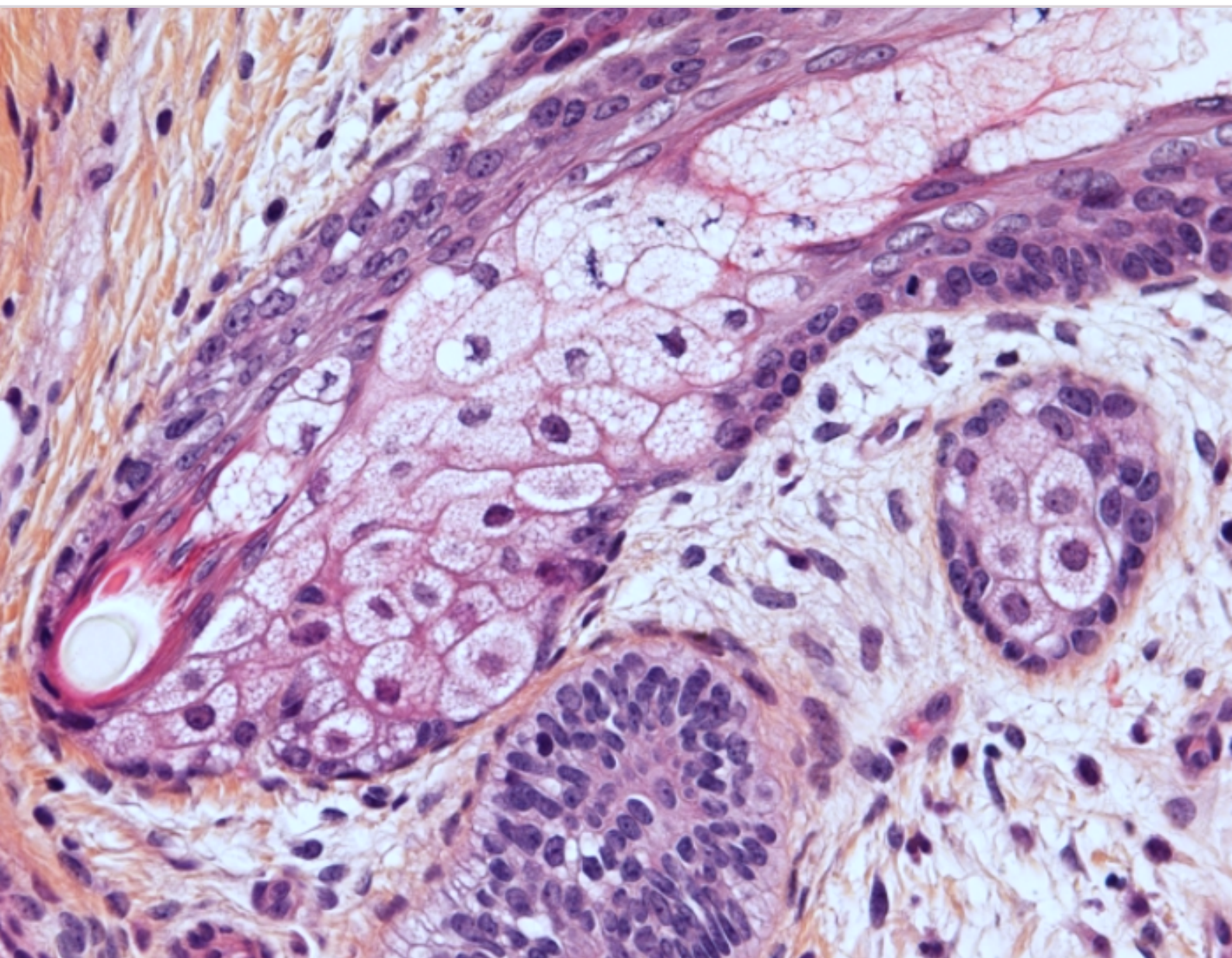
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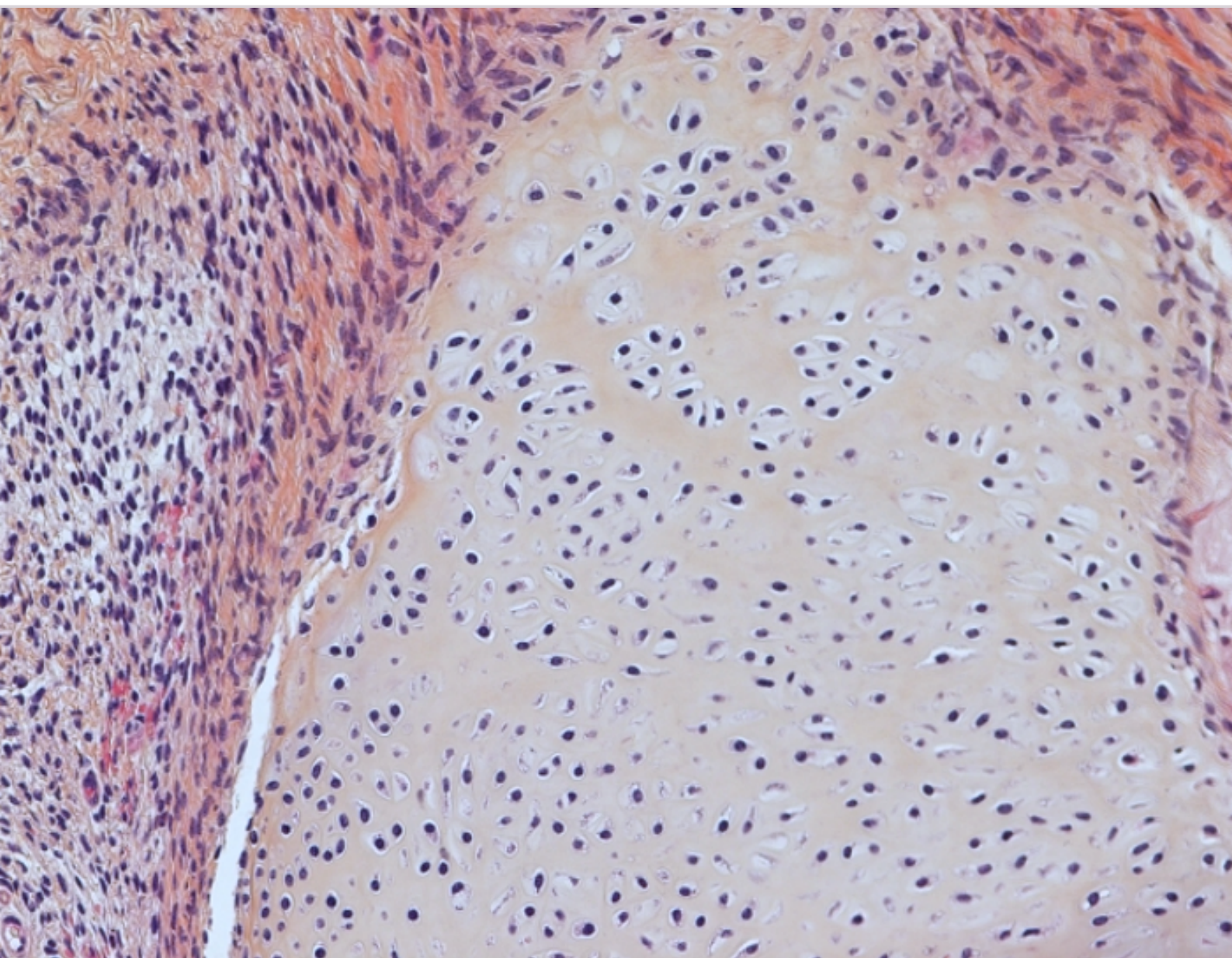
86

A 35-year-old man undergoes an operation for a testicular tumour. The photos show histopathological sections from the tumour (hematoxylin-erythrosine-saffron (HES) stain). What is the diagnosis?









- A Seminoma
- B Normal testis
- C Malignant teratoma
- D Benign teratoma

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87

A patient undergoes an operation for breast cancer and the results from the pathology department show a histological grade 3 cancerous tumour.

What determines the histological grade of the tumour?

- A Mitoses, share of tubular structures and pleomorphism
- B Tumour size, lymph node status and mitoses
- C Tubular structures, oestrogen receptor and Ki67.
- D Human epidermal growth factor receptor 2 (HER2), mitoses and pleomorphism

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88

A patient with heart failure is treated with an ACE inhibitor. How does this affect the electrolyte balance?

- A** Tendency to hypernatremia and hypercalemia
 - B** Tendency to hypernatremia and hypokalemia
 - C** Tendency to hyponatremia and hypercalemia
 - D** Tendency to hyponatremia and hypokalemia
-

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89

A woman visits you as her GP. She has recently discovered that she is pregnant, and an ultrasound scan has shown that she is in her 16th week of pregnancy. She is taking enalapril for hypertension. What would be the correct reasoning in this situation?

- A** She can continue enalapril since ACE inhibitors only increase the risk of foetal harm during the first trimester and that critical period has now passed
 - B** She can continue enalapril up until the 3rd trimester since ACE inhibitors only increase the risk of foetal harm in the 3rd trimester
 - C** She should switch to another antihypertensive as soon as possible, since ACE inhibitors increase the risk of foetal harm during the 2nd and 3rd trimesters
 - D** She can continue enalapril since there is no documentation showing ACE inhibitors to cause greater risk of foetal harm than any other antihypertensives
-

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90

An 82-year-old man is admitted to hospital with pneumonia. He has COPD, diabetes mellitus type 2, hypertension and hypercholesterolemia and his medication includes the following:

Atorvastatin 40 mg, one tablet per day (cholesterol-lowering drug, statin)

Candesartan 4 mg, one tablet per day (angiotensin-II-receptor agonist)

Acetylsalicylic acid 75 mg, one tablet per day (platelet inhibitor)

Metformin 850 mg, one tablet twice daily (antihyperglycemic drug)

On admittance his blood pressure is 140/80 mmHg. His kidney function is severely impaired with an estimated glomerular filtration rate of 25 ml/min.

One of the patient's drugs is contraindicated when the GFR is so low and should be discontinued until his kidney function has improved. Which one?

- A** Acetylsalicylic acid
 - B** Atorvastatin
 - C** Candesartan
 - D** Metformin
-

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91

A 19-year-old woman is seeking isotretinoin treatment for severe acne. What information should you provide her with?

- A** She needs to use effective contraception (at least one and preferably two complementary methods) 1 month prior to commencement, during the whole treatment and 6 months after completing the treatment.
 - B** She needs to use effective contraception (at least one and preferably two complementary methods) 1 month prior to commencement, during the whole treatment and 1 month after completing the treatment.
 - C** She needs to use effective contraception (at least one and preferably two complementary methods) during the whole treatment and 1 month after completing the treatment.
 - D** She needs to use effective contraception (at least one and preferably two complementary methods) during the whole treatment.
-

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92

A patient is taking levothyroxine for hypothyreosis. The patient develops an iron deficiency and needs to take oral iron supplements. A drug interaction search shows that an interaction is present between orally administered iron and levothyroxine.

What is the mechanism behind this interaction?

- A** Iron increases the excretion of levothyroxine in the kidneys
- B** Levothyroxine induces the metabolism of iron
- C** Iron and levothyroxine form insoluble complexes in the digestive tract
- D** Levothyroxine inhibits the metabolism of iron

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93

A 79-year-old man with previous coronary heart disease and rapid atrial fibrillation is admitted with subacute-onset dyspnea and suspected heart failure. When examined in A&E he has crackling sounds over his lungs, ankle oedema and a heart rate of 42 beats per minute. An ECG shows a 3rd degree AV block. He is taking the following medication: enalapril (an ACE inhibitor), metoprolol (a beta blocker), amlodipine (a calcium antagonist) and digoxin (a digitalis glycoside).

Which combination of medicines is most likely to be causing the patient's condition?

- A** Amlodipine and metoprolol
- B** Digoxin and enalapril
- C** Enalapril and amlodipine
- D** Metoprolol and digoxin

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94

Which of the diuretics shown below would be among the first hand drugs when treating essential hypertension?

- A** Hydrochlorothiazide (a thiazide diuretic)
- B** Mannitol (an osmotic diuretic)
- C** Spironolactone (a calcium-sparing diuretic)
- D** Furosemide (a loop diuretic)

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95

Young children have immature kidney function in relation to older children and adults. This affects the half-life of drugs which are largely excreted unchanged via the kidneys. In what way?

- A** The half-life decreases due to reduced GFR and reduced tubular secretion
- B** The half-life decreases due to increased loss through the glomeruli
- C** The half-life increases due to reduced GFR and reduced tubular secretion
- D** The half-life increases due to increased loss through the glomeruli

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96

Due to a complex of medical conditions, a pregnant woman has been taking lamotrigine, prednisolone, oxycodone and paracetamol during the last part of her pregnancy. There are no complications during birth, but during the child's first day of life it becomes irritable, refuses to nurse and cries loudly. Which drug most likely caused these symptoms in the child?

- A** Prednisolone
- B** Lamotrigine
- C** Paracetamol
- D** Oxycodone

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97

Propylthiouracil is used for treating hyperthyreosis.

What is the most important mechanism of action of this drug?

- A Inhibits the uptake of iodine in the intestines and increases the elimination of iodine in the kidneys
 - B Eliminates the effects of T_4 and T_3 by blocking thyroid hormone receptors in the peripheral tissues
 - C Inhibits the synthesis of thyroid hormones and the conversion of T_4 to T_3 in the peripheral tissues
 - D Inhibits the synthesis of T_4 by inhibiting the release of thyroid-stimulating hormone (TSH)
-

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98

Some drugs can damage or inhibit the kidneys when used.

Which antibiotic is particularly associated with this?

- A Mecillinam (a beta-lactam)
 - B Imipenem (a carbapenem)
 - C Gentamicin (an aminoglycoside)
 - D Erythromycin (a macrolide)
-

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99

Calcium blockers have varying degrees of cardiovascular selectivity. Most of the drugs on the market primarily affect the vasculature. One drug affects both the heart and the blood vessels. Which one?

- A Verapamil
 - B Diltiazem
 - C Nifedipine
 - D Amlodipine
-

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100

A 22 year-old woman is admitted with a clinically certain diagnose of upper urinary tract infection on her right side. Her case history shows that she had been ill for 2 days before admssion. Good clinical and biochemical response to intravenous antibiotics. During her hospital stay she had a small dip in kidney function with temporarily slightly reduced estimatet GFR, which is now normal again. You want the patient to have a radiological check-up before discharge due to the temporary reduction in kidney function - which type of imaging do you refer her for?

- A "Stone CT scan" without contrast agent
 - B Ordinary CT scan of the abdomen/pelvis with contrast agent
 - C Ultrasound scan of the kidneys and urinary tract
 - D MRI of the kidneys and urinary tract
-

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101

Ultrasound and MRI scans of the head are often used for clarifying different illnesses and conditions in newborns.

Which of the following conditions does not require further tests with MRI imaging of the head.

- A Birth asphyxia
 - B Damage incurred to the head (child abuse)
 - C Cerebral hemorrhage in premature babies
 - D Recurrent neonatal cramps
-

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102

When investigating suspected prostate cancer with an MRI, a diffusion-weighted MRI sequence is carried out. What is the purpose of this sequence when assessing possible prostate cancer?

- A** High signal on both the DWI sequence (b-series) and the ADC map show the most malignant areas
 - B** Diffusion-weighted imaging is the most sensitive and specific for metastatic prostate cancer
 - C** The degree of diffusion restriction is correlated with the degree of malignity
 - D** The diffusion sequence gives the best anatomical imaging of tumours
-

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103

The parents of a 7-month-old girl visit you in your capacity as a health centre doctor due to their concerns about her uneven head shape. You examine the child. Apart from a long, narrow head shape your examination (incl. neurological status) shows normal findings. The parents have been Googling a lot and are very worried about a condition called "craniosynostosis" and ask for a "computed tomography" of her head. You choose to refer the child to the neonatal outpatients clinic. At the same time you refer her to the radiology department.

What imaging modality do you refer the child for?

- A** X-ray of the head
 - B** MRI of the head
 - C** CT scan of the head
 - D** Ultrasound scan of the head
-

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104

A 59-year-old man suddenly experiences severe abdominal pain with an urge to move. The pain is more predominant towards the left flank/back. A CT scan was carried out, see the attached image. Based on this, it was decided that active intervention was required.

What type of treatment is the patient likely to receive?



Case courtesy of Dr Varun Babu, Radiopaedia.org, rID: 46796

- A** Extracorporeal shock wave lithotripsy (ESWL)
- B** Percutaneous nephrolithotripsy (PCNL) with a nephrostomy
- C** Left-sided nephrectomy
- D** Cystoscopy, possibly ureterorenoscopy (URS), with a stent

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105

A 24 mm relatively low-attenuating, homogenous, well-defined and rounded lesion is detected in the renal parenchyma of a 73-year-old patient as an incidental finding. Not macroscopically fatty. Before contrast, the lesion attenuates 43 HU (Hounsfield units), after contrast, it attenuates 81 HU. What is the lesion most suspicious of and the correct action?

- A** Relatively low attenuation and attenuation change between 20 and 50 HU is almost pathognomonic for oncocytoma. No need for biopsy.
- B** Homogeneous and significant contrast loading is most likely a benign tumor. No need for biopsy.
- C** Attenuation change < 50 HU and therefore most likely a simple cyst. No need for biopsy.
- D** Significant attenuation change and most likely a tumor of undetermined degree of malignancy. Should be biopsied.

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106

Which imaging diagnostic modality is used for grading vesicoureteral reflux (VUR)?

- A** X-ray urography
- B** X-ray MCUG
- C** Ultrasound scan of the urinary tract
- D** 3-phase CT scan of the urinary tract

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107

You are working as an intern/specializing doctor in a child reception centre and receive a 4-year-old boy who has been suffering from increasing respiratory tract symptoms during the past week. The boy's GP has treated him conservatively for a viral lower respiratory tract infection. He is clinically exhausted, has a temperature and an elevated respiratory rate of 56. His CRP level is 240 (ref. <5). Upon auscultation you can hear diminished respiratory sounds basally on the right side. You refer him for a chest x-ray. What does the image show?

HØ

Liggende på bord

- A** Delimited collection of fluid between the lower and upper right lobes
- B** Mass-like consolidation in the upper right lobe
- C** Congenital lung anomaly in the upper right lobe
- D** Atelectatic mass in the upper right lobe

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108

Physical abuse of children is something every clinician must have in the back of their minds. The radiologist can be the first person to suspect/give a diagnosis and say something about the extent of injury, particularly when the medical history does not agree completely with the findings on the images.

What type of fractures are very specific in this respect?

- A** Metaphyseal fractures (bucket handle/corner fractures)
 - B** Greenstick fractures
 - C** Unilateral, isolated rib fractures
 - D** Avulsion fractures
-

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109

A 25-year-old woman has been suffering from recurrent urinary tract infections and has been examined without any pathological findings. She visits her GP for a check-up and brings a urine sample with her. She has no symptoms of infection. Her urine dipstick tests shows a full count of leucocytes and nitrites and you interpret this as being asymptomatic bacteriuria. What should you do in your capacity as her GP?

- A** Ask if she is pregnant
 - B** Treat her with a 3 days course of antibiotics due to current guidelines
 - C** Do a urine culture test so that the right type of antibiotics can be given
 - D** Wait and see how the situation develops and ask the patient to come back if she has symptoms
-

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110

A 62-year-old previously healthy man has been diagnosed with a bladder tumour and a transurethral resection of the tumour shows tumor stage T2 grade 3.

Further investigation shows no signs of metastasis. What is the best treatment for this patient?

- A** Re-resection in 4-6 weeks
 - B** Mitomycin C instillation treatment
 - C** Radical cystectomy
 - D** BCG installation treatment
-

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111

A 50-year-old man visits you, his GP, with a swollen, painful scrotum. You palpate a swollen, tender epididymis on his left side. His testicles feel normal when palpated. He is afebrile and his CRP level is 30 (ref. range < 5). In your capacity as his GP what should you do next with this patient?

- A** You suspect epididymitis and commence treatment with ciprofloxacin 500mg x 2 for 10 days
 - B** You suspect epididymitis and commence treatment with trimethoprim/sulfamethoxazol 800/160mg x 2 for 10 days
 - C** You suspect an abscess and refer the patient for an emergency ultrasound scan of his scrotum and possibly an incision and drainage.
 - D** You suspect an epididymal abscess and refer him for an ultrasound scan the next day.
-

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112

A 71-year-old previously healthy man visits his GP after suffering from increasing problems in the form of lethargy, back pain, poor pressure on urination and urinary incontinence. During the past week he has had problems with emptying his bladder. As his GP you wish to take a urine sample and the patient passes approx. 2dl of cloudy urine. He feels that he had not completely emptied his bladder and a bladder scan reveals 9 dl of residual urine. What is the next step for treating him at the GP's surgery?

- A** You insert a permanent catheter, undertake a digital rectal examination of his prostate and take blood tests for information purposes, including a PSA test.
 - B** You empty his bladder using a disposable catheter, undertake a digital rectal examination, send off his urine for culture and commence antibiotic treatment. You ask the patient to come back if his urination does not start to flow during the course of the day.
 - C** You insert a permanent catheter; undertake a digital rectal examination of his prostate, take blood tests with a view to infection and kidney function and refer him to the urology outpatients clinic.
 - D** You empty his bladder using a disposable catheter, undertake a digital rectal examination, take a PSA test, send off his urine for culture, commence antibiotic treatment and book an ultrasound scan of his kidneys.
-

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113

You are an A&E doctor for the primary health service and are called by a woman who says that her 15-year-old son woke up one hour ago with severe pain in the right side of his scrotum. What should you do?

- A** You ask them to go to the nearest hospital if he is still in pain after 2-3 hours
 - B** You ask them wait for 2-3 hours and call back if he is still in pain
 - C** You ask them to attend an emergency appointment as soon as the medical centre opens at 0800 hrs
 - D** You ask them to come into the A&E immediately
-

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114

A 78-year-old man attends his GP for a check-up of his blood pressure. He has suffered for several years with mild irritation from his urinary tract since he had radiation treatment for prostate cancer 10 years ago. There has not been any changes in his urination during the last 8 years. His urine dipstick tests shows 1+ blood. Otherwise his tests are negative. Which is the best measure for this patient?

- A** The patient is at risk and is referred for a 3-phase CT scan of his urinary tract and cystoscopy
 - B** The patient is at risk and is referred for an ultrasound scan of his urinary tract and cystoscopy
 - C** The patient is at risk and his PSA levels should be checked
 - D** No measures are necessary
-

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115

The Norwegian Institute of Public Health has evaluated performing prostate biopsies by using New Methods and has reached a conclusion that is changing clinical practice. What does this change involve?

- A** Prostate biopsies shall be carried out via the skin in the perineum, also called transperineal biopsies.
 - B** Using risk calculators is recommended in order to avoid performing biopsies on patients who are unlikely to have cancer.
 - C** Targetted biopsies shall be performed by using fusion tools.
 - D** In order to avoid infections the rectum should be cleaned with iodine and adequate antibiotic prophylaxis shall be given.
-

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116

A 57-year-old woman with diabetes and hypertension is diagnosed with a 2.5 cm tumour in her left kidney. A biopsy shows that this is a clear-cell renal cell carcinoma. What is the best treatment alternative for this patient?

- A** The patient should probably have a nephrectomy since the tumour is over 2 cm in size.
 - B** Since the tumour is only 2.5 cm in size it can be followed by using CT scan check-ups. If it grows over the course of 6 months the patient should undergo surgical treatment.
 - C** The patient should undergo a tumour resection if possible.
 - D** The patient should undergo RFA (radio frequency ablation) of the tumour since she has comorbidity due to her diabetes and hypertension.
-

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117

A 55-year-old man has previously suffered from moderate urination problems, including fairly frequent urination, urge incontinence and nocturia. After visiting a football pub and having a few beers he woke up the following day with severe bladder pressure, but unable to urinate a single drop. He visits his GP who empties 600 ml from his bladder using a disposable catheter. How would it be best to treat him next?

- A** The patient should be examined further and blood tests, including a PSA test, should be taken before he goes home.
 - B** The GP asks the patient to return if his urination does not improve and books an appointment for further investigation of his prostate.
 - C** After emptying out 600 ml a permanent catheter should probably be inserted and the patient should be referred to a urologist for further investigations.
 - D** His bladder should be relieved with a permanent catheter for one week before removal.
-

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118

A 65-year-old man has had a stroke and is in a wheelchair. He lives in sheltered accommodation and is dependent on a permanent catheter. He now attends the A&E in a severely impaired state of general health. He has fever, severe pain in his scrotum and is very tender when palpated. There is crepitus beneath the skin of his scrotum which is red and swollen. What is the most likely diagnosis?

- A** Necrotising fasciitis
 - B** Testicular torsion
 - C** Urinary infection with epididymitis
 - D** Incarcerated inguinal hernia
-

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