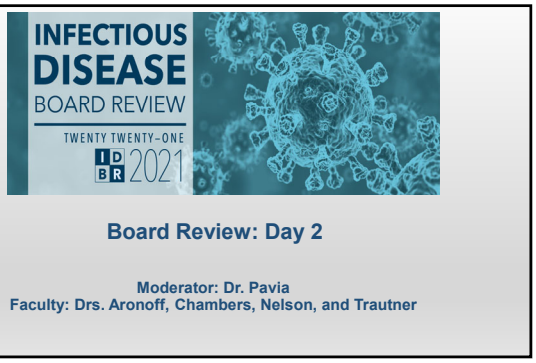
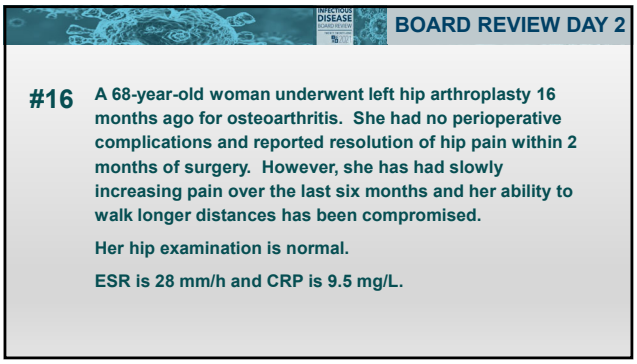
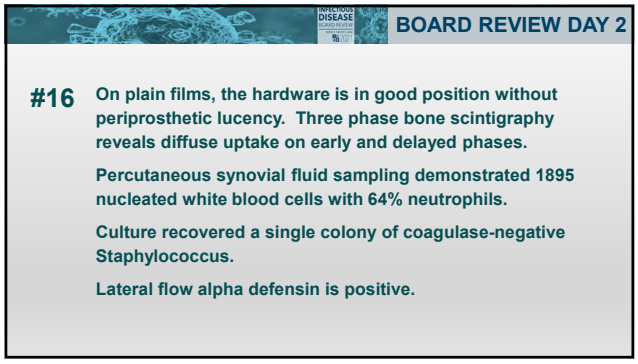
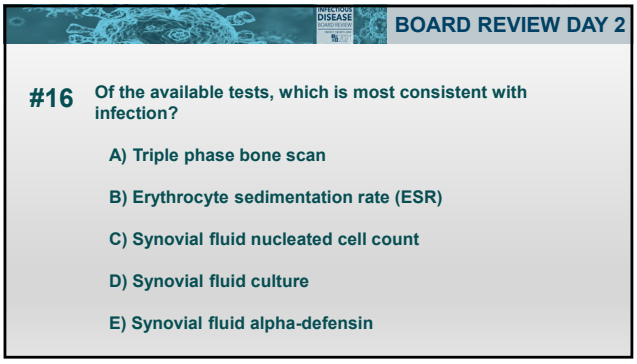
20 – Board Review Day 2

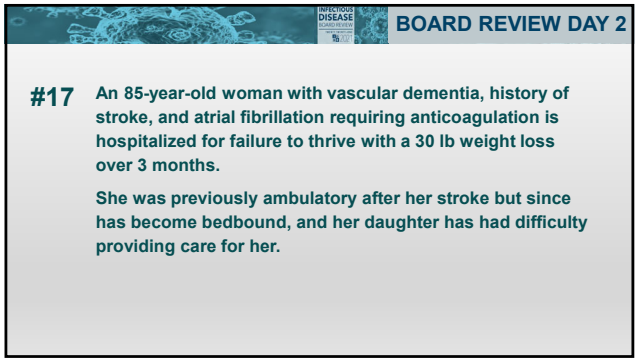
Speaker: Drs. Pavia (Moderator), Aronoff, Chambers, Nelson, and Trautner

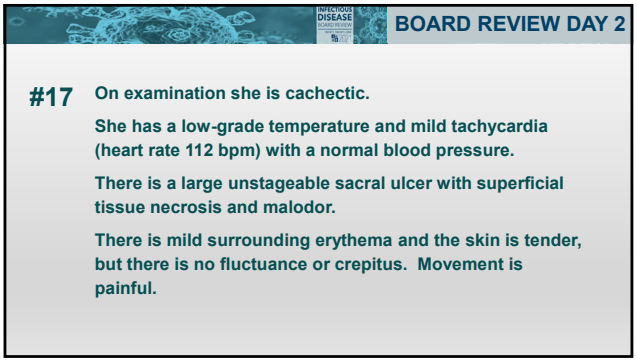












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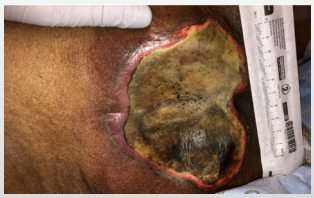
BOARD REVIEW DAY 2

#17



Her creatinine is 0.28 mg/dL. Albumin is 2.1 g/dL. WBC is 16.3 x 103/µL. Hgb is 9 g/dL. ESR is 71 mm/Hr. CRP is 94.7 mg/L.

Plain films of the pelvis are normal.

She is started on piperacillin-tazobactam.

BOARD REVIEW DAY 2

#17 In addition to offloading and nutritional optimization, what is the next best management option for her infected sacral ulcer?

A) Local wound care with antimicrobial dressing

B) Place PICC line for six weeks of IV antimicrobial therapy

C) Assess for osteomyelitis with MRI

D) Surgical debridement and placement of negative pressure wound dressing (vacuum-assisted closure)

E) Diverting colostomy to minimize ongoing fecal contamination

BOARD REVIEW DAY 2

#18 A 52 y/o woman was admitted with a 4 x 5 cm abscess of the right buttock which she says started as a tender bump about a week ago.

She has had subjective fevers beginning the day prior to admission. Vital signs on admission were a temperature of 38.5oC, pulse 100, respiratory rate 16, blood pressure 125/80. Except for the buttock abscess the physical examination was unremarkable including no cardiac murmur, no rash or other skin findings.

Admission chest x-ray was normal.

Complete blood count was normal except for a white blood cell count of 10,500 per mL with 85% neutrophils.

Metabolic panel, serum creatinine, hepatic enzymes, coagulation tests, and urinalysis were all normal.

BOARD REVIEW DAY 2

#18 The abscess was drained and empiric vancomycin was administered on hospital day 1. She has had no further fevers since drainage of the abscess and feels much improved.

Culture of the abscess fluid grew a methicillin-susceptible strain of Staphylococcus aureus (MSSA) and did one of two blood cultures from admission.

Follow-up blood cultures obtained hospital day 2 and day 3 are negative and transthoracic echocardiogram is negative.

On hospital day 5 you are asked to make recommendations for antimicrobial therapy.

BOARD REVIEW DAY 2

#18 Which is your recommendation?

A) No further antimicrobial therapy is needed, since source control has been established

B) Continue vancomycin to complete a 7-day course

C) Continue vancomycin to complete a 14-day course

D) Switch to cefazolin to complete a 7-day course

E) Switch to cefazolin to complete a 14-day course

BOARD REVIEW DAY 2

#19 A 72-year-old man with type 2 diabetes mellitus, stage II chronic kidney disease (CKD), and a history of mild aortic stenosis is admitted to the hospital with fever, dysuria, and urinary frequency.

His temperature is 38.9oC, pulse regular at 110 beats per minute, and blood pressure 145/95 mm Hg.

His lungs are clear; a 3/6 systolic ejection murmur is heard at the right upper sternal boarder.

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#19 Laboratory tests are notable for hemoglobin 12 g/dl, white blood cell count 13,500 per mm3 (80% polymorphonuclear cells), serum glucose 340 mg/dl, serum creatinine 1.7 mg/dl, and urinalysis with 3+ protein, 20-50 white cells per high power field, and 4+ glucose.

Two blood cultures and a urine culture are positive for gentamicin-resistant Enterococcus faecalis.

BOARD REVIEW DAY 2

#19 What antimicrobial regimen would you recommend for this patient?

A) Daptomycin

B) Ampicillin

C) Ampicillin + ceftriaxone

D) Vancomycin + streptomycin

E) Ampicillin + streptomycin

BOARD REVIEW DAY 2

#20 A 27-year-old man with a history of injection drug use and a prior episode of tricuspid valve endocarditis caused by methicillin-resistant Staphylococcus aureus (MRSA) is admitted with one week of fevers.

A 3/6 systolic murmur is heard at lower left sternal border. Chest x-ray shows multiple peripheral infiltrates bilaterally.

He says that during treatment of the prior endocarditis he had a bad reaction to vancomycin with fevers, a rash all over his body and swelling of his face.

BOARD REVIEW DAY 2

#20 What antimicrobial regimen would you recommend for this patient?

A) Dalbavancin

B) Daptomycin

C) Linezolid

D) Telavancin

E) Vancomycin

BOARD REVIEW DAY 2

#21 A 36-year-old female is 2 years post-cadaveric renal transplantation for renal failure due to chronic glomerulonephritis.

She now presents with fever of five days duration. She had some nausea but no urinary, respiratory, or abdominal symptoms.

She presented to an outside hospital three days previously where a chest x-ray, urinalysis and blood culture were negative.

She was given levofloxacin but remained febrile with malaise.

BOARD REVIEW DAY 2

#21 Current medications included mycophenolate, sirolimus and prednisone 20 mg.

- Examination found a fever of 39.2˚C grade 1 systolic ejection murmur over the left sternal border, and a non-tender transplanted kidney in the right lower quadrant. Renal ultrasound of the transplanted kidney was normal.
- Urine culture grew 100,000 colonies of E. faecalis, susceptible to ampicillin.
- Urinalysis found 100 WBC per hpf, nitrate and protein negative.
- WBC was 10,700. Creatinine 1.3 mg/dl

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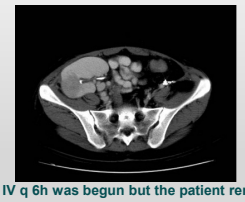
BOARD REVIEW DAY 2

#21 Abdominal CT with contrast showed a lobe of the kidney which did not perfuse well with contrast and was swollen (Fig). There is no evidence of abscess formation.



Ampicillin 2 gm IV q 6h was begun but the patient remained febrile the next 24 hours.

BOARD REVIEW DAY 2

#21 Which of the following is the most appropriate management?

A) CT-guided biopsy of the affected kidney

B) Add gentamicin

C) Wedge resection of affected area of kidney

D) Check urine for "decoy" cells of BK virus

E) Continue ampicillin at same dose

BOARD REVIEW DAY 2

#22 A 17-year-old man from Arizona presents with leg pain. He was in his usual state of good health until 8 months ago when he developed localized pain in his left leg just below the knee.

He denied any antecedent trauma. He also denied any skin lesions, erythema, fevers, chills, sweats, weight loss, or fatigue.

He is a competitive swimmer but he gave up the sport about four months earlier as a result of his leg pain. He denies tobacco, alcohol, or illicit drug use. He has never left Arizona.

He is sexually active with a single female partner.

BOARD REVIEW DAY 2

#22 On examination, his vital signs are normal. The left leg appears normal on visual inspection. Deep palpation below the left knee over his tibia elicits mild discomfort.

The knee joint is normal. Muscle strength and sensation are normal.

A radiograph of his lower extremity demonstrates a lytic lesion in the proximal tibial metaphysis surrounded by a sclerotic rim (see radiograph below).

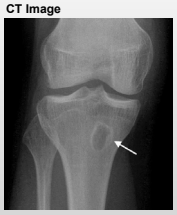
MRI demonstrates the "penumbra sign" on T1 weighted imaging (see MRI and bone film below).

Chest x-ray and chest CT are normal.

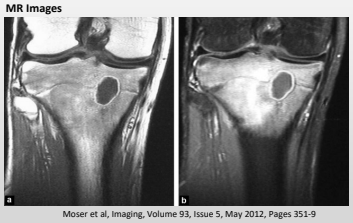
BOARD REVIEW DAY 2

#22

CT Image



MR Images



Moser et al, Imaging, Volume 93, Issue 5, May 2012, Pages 351-9

BOARD REVIEW DAY 2

#22 Which of the following is most likely to be isolated from a biopsy of this lesion?

A) Histoplasma capsulatum

B) Mycobacterium marinum

C) Pseudomonas aeruginosa

D) Staphylococcus aureus

E) Streptococcus pyogenes

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BOARD REVIEW DAY 2

#23 The hypervirulent strain of C. difficile designated North American Pulse Field 1 (NAP1), 027 by PCR ribotyping, and BI by restriction endonuclease analysis (REA) is characterized by which of the following?

A) Patient mortality in excess of 50% within 30 days

B) Recurrent *C. difficile* infection rates of over 35%

C) High level toxin A and B production

D) Vancomycin resistance

E) Fidaxomicin resistance

BOARD REVIEW DAY 2

#24 A 45-year-old male is diagnosed with Helicobacter pylori infection by endoscopy and antral gastric biopsy performed for weight loss and abdominal pain.

There is a family history of gastric cancer.

He is treated for 14 days with omeprazole, clarithromycin, and amoxicillin.

BOARD REVIEW DAY 2

#24 What would be best option to evaluate this patient regarding Helicobacter infection/disease after completing antibiotic therapy?

A) No further testing is necessary for one year

B) Perform the stool Helicobacter pylori antigen test 8 weeks after treatment

C) Perform the urea breath test 3 weeks after treatment

D) Repeat endoscopy, biopsy, and rapid urease test (RUT) 6 weeks after treatment

BOARD REVIEW DAY 2

#25 A 72 y/o retired fireman who has a history of chronic obstructive lung disease is seen in the emergency department because of 96 hours of cough, chills, sore throat, and body aches.

He lives in an assisted care facility where he has his own room but takes meals in a congregate dining room.

He reports that a number of other residents and servers in the dining room have been coughing.

In the emergency room a rapid test for influenza is positive.

He is hypoxemic and admitted to the intensive care unit.

BOARD REVIEW DAY 2

#25 Regarding treatment for influenza, he should receive:

A) No specific anti-viral because the patient has been ill for substantially more than 48 hours

B) Zanamivir

C) Zanamivir and Oseltamivir

D) Oseltamivir

E) Rimantadine

BOARD REVIEW DAY 2

#26 A 65-year-old man 6 weeks post right total knee arthroplasty presents with pain and swelling of the right knee that started two weeks ago.

He has no fever.

Physical examination shows a well-healed wound, surrounded by erythema and some bogginess over the right knee.

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#26 Which of the following is the next best step?

A) Measurement of C-reactive protein

B) Knee aspiration for alpha defensin testing

C) Knee aspiration for cell count and differential and bacterial culture

D) Knee aspiration for 16S ribosomal RNA gene PCR and sequencing

BOARD REVIEW DAY 2

#27 A 36-year-old male with HIV infection and ocular syphilis has a history of penicillin allergy.

He reports a serious rash that occurred when he was treated with penicillin for a dental infection.

He was told never to take penicillin again and is confident that he has not taken penicillin or any related drug since.

BOARD REVIEW DAY 2

#27 Which feature of the rash would exclude the use of penicillin for his ocular syphilis?

A) Immediate onset of rash within 24 hours

B) Need for antihistamine therapy

C) Associated fever with the rash

D) Blistering or mucous membrane involvement

E) Prolonged time (7 days) to resolution of rash

BOARD REVIEW DAY 2

#28 A 22-year-old female has had frequent episodes of lower urinary tract infections.

She has frequent intercourse with a single partner, who always uses condoms with spermicide.

BOARD REVIEW DAY 2

#28 Which one of the following actions would be most likely to decrease the frequency of her infections?

A) Have her partner discontinue spermicide use with condoms

B) Vaginal douching after intercourse

C) Discontinue wearing of pantyhose

D) Urinate after intercourse

E) Drink cranberry juice for prophylaxis

BOARD REVIEW DAY 2

#29 A 22-year-old previously healthy male from El Paso, Texas, who presented to the Emergency Room with a 3-month history of lower back pain elicited after lifting weights at the gym.

He also reported intermittent fevers and chills as well as a 20-pound unintentional weight loss.

He denied any recent travel and worked as a correctional officer.

On physical exam he had normal vital signs, no spinal or paraspinal tenderness, and no neurologic deficits.

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BOARD REVIEW DAY 2

#29 An MRI was notable for findings concerning for discitis/osteomyelitis of L5/S1 with abscess formation, so the patient was admitted and subsequent interventional radiology-guided biopsies were performed twice, and cultures and pathology were negative for bacteria, fungi, and acid-fast bacilli.

He was discharged on vancomycin, ceftriaxone, and doxycycline for the treatment of osteomyelitis of unknown origin.

On follow-up it was discovered that he regularly consumed fresh cheese from Mexico (queso fresco) and occasionally ate sushi from a local restaurant. He had remained symptomatic with fevers.

BOARD REVIEW DAY 2

#29 Which of the following infections does this likely represent?

A) *Francisella tularensis*

B) *Nocardia brasiliensis*

C) *Brucella melitensis*

D) *Actinomyces israelii*

E) *Shigella boydii*

BOARD REVIEW DAY 2

#30 A 42-year-old man is referred for asymptomatic elevation of his liver function tests.

He underwent a living-related donor kidney transplantation 14 months earlier secondary to end-stage renal disease from uncontrolled hypertension (CMV D-/R-).

Six months after his transplant, his physicians noted an asymptomatic increase in aminotransferases, with aspartate aminotransferase (AST) 8 times the upper limit of normal (ULN), alanine aminotransferase (ALT) 6 x ULN, and gamma glutamyl transferase (GGT) 5 x ULN.

His total bilirubin was mildly elevated and his alkaline phosphatase was normal.

BOARD REVIEW DAY 2

#30 The following were serologies were negative:

- Hepatitis A virus
- Hepatitis B virus (HBV) surface antigen
- hepatitis C virus (HCV)
- human immunodeficiency virus (HIV)- 1,2
- Epstein-Barr virus VCA IgM
- herpes simplex virus 1 and 2 IgG
- cytomegalovirus IgG

Also negative or normal were:

- HBV DNA and HCV RNA were undetectable.
- Liver autoimmunity panel was negative.
- Abdominal ultrasound was normal.

BOARD REVIEW DAY 2

#30 He denied alcohol consumption. He recently returned from living the past year in Germany and is an avid consumer of sausage.

His immunosuppressive regimen included tacrolimus, mycophenolate mofetil, and prednisolone.

His liver function tests have continued to be elevated over the past 9 months despite changes in his immunosuppressive regimen and antihypertensive medications.

His physical examination was unremarkable.

His BMI was 20 kg/m2. No scleral icterus was noted and no stigmata of cirrhosis were noted.

A liver biopsy demonstrated lobular hepatitis without fibrosis.

BOARD REVIEW DAY 2

#30 Which of the following entities is most likely responsible for his hepatitis?

A) Coxiella burnetii

B) Hepatitis D

C) Hepatitis E

D) Leptospira interrogans

E) Non-alcoholic hepatosteatosis

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