TAP Spec Pathology 9.2.09

.1

Choose a pathological condition related to rheumatic carditis?

a. Perforation of mitral valve
b. Cross reacting antibodies for Staphylococcus aureus
c. Infiltration of myocardium by neutrophils
d. **Pancarditis**
e. Degenerative changes with no inflammatory response

.2

Which of the following pathological conditions are related to nonbacterial thrombotic endocarditis?

a. Antiphospholipid syndrome
b. Fibrinoid necrosis
c. **Hypercoagulability**
d. Scarring and deformation of valve
e. Formation of antigen antibody-complex (Immune complex)

.3

Which of the following is a component of the atheromatous plaque?

a. Granulomas
b. Multinucleated giant cells
c. Striated muscular fibers
d. **Smooth muscular cells**
e. Amyloid deposits

.4

All of the following features may be found in an atheromatous plaque **except**:

a. Fibrous cap
b. Neovascularization
c. **Medial calcific sclerosis**
d. Foam cells
e. Ventral core
.5
Which of the following mechanisms provide accumulation of lipids in foam cells of atheromatous plaque?

a. Phagocytosis  
b. Common endocytosis  
c. Fatty degeneration  
d. Storage of lipids due to deficiency of specific enzymes  
e. Receptor mediated endocytosis

.6
What of the following cells will be mostly seen in an area of transmural myocardial infarction 3 days after onset?

a. Eosinophils  
b. Neutrophils  
c. Macrophages  
d. Lymphocytes  
e. Foam cells

.7
Which of the following complications may be expected during the time of fibrosis and scar formation in the late stage of a transmural myocardial infarction?

a. Rupture of papillary muscle  
b. Tamponade  
c. Fibrous pericarditis  
d. Scarring and stenosis of mitral valve  
e. Ventricular aneurism

.8
Choose the specific histological pattern related to hypertrophic cardiomyopathy:

a. Myocytic disarray  
b. Contraction band necrosis  
c. Wavy pattern of myofibers  
d. Myocytolysis  
e. Degenerative changes of myofibers
FIGURE 1 shows the histological picture of a myocardium with positive staining for iron (blue color). Which type of cardiomyopathy may be associated with this condition?

a. Dilated cardiomyopathy related to alcoholism
b. Dilated cardiomyopathy related to Vitamin B1 deficiency
c. Hypertrophic cardiomyopathy
d. Restrictive cardiomyopathy due to amyloidosis
e. **Restrictive cardiomyopathy due to hemochromatosis**

All of the following structures may be found in the mitral valve of patients with rheumatic heart disease except:

a. Aschoff bodies
b. Fibrosis
c. **Atheroma**
d. Erosions
e. Neovascularization

Choose an iatrogenic cause for restrictive cardiomyopathy.

a. Doxorubicin
b. Cyclophosphamid
c. **Radiation of chest**
d. Operation with opening of pericardial sac
e. Beta-blockers

All of the following complications of infective endocarditis are related to direct microbial invasion except:

a. Septic embolism
b. **Leukocytoclastic vasculitis**
c. Mycotic aneurysm
d. Ring abscess of myocardium around valve
e. Ulceration or perforation of valve
.13

Which of the following statements about Anitschkow cell is true?

a. It is a type of histiocyte
b. It is a type of eosinophil
c. It is a type of plasma cell
d. It is an activated mast cell
e. It is a type of cytotoxic lymphocyte

.14

Which type of pathological process is that present in the heart disease you see in slide no. 4?

a. Ischemic coagulation necrosis
b. Granulomatous inflammation
c. Fibrinoid degeneration
d. Gangrene
e. Tumor

.15

What is true for the disease of cardiac valves that you see in slide no 5.

a. Pathogenesis of the disease is based on an immunological mechanism
b. This is only a degenerative disease
c. This is an inflammatory but not septic disease
d. This is a non-inflammatory non-septic disease
e. This is an inflammatory septic disease

.16

The most likely clinical presentation of the patient with this biopsy (slide no. 1) is:

a. A 60 y.o. woman with polymyalgia rheumatica.
b. A 50 y.o. man with fever, renal failure and hemoptysis.
c. A 40 y.o. man with palpable purpura.
d. A 40 y.o. woman with hematuria, renal failure, neuritis and arthritis.
FIGURE 2 is from a 30 y.o. woman who noted these red patches over her legs which were elevated on palpation. Histology of the lesions will show:

a. Granulomatous inflammation of small blood vessels.
b. Fibrinoid necrosis of medium-sized arteries.
c. Neutrophils and neutrophilic debris around venules and capillaries.  
   
   (image shows vasculitis)
d. Epithelioid cells and eosinophils around venules, arterioles, and small arteries.

FIGURE 18

Abrupt severe posterior chest pain in a 60 y.o., hypertensive man with differences in the blood pressure between the two hands is suggestive of:

a. Takayasu arteritis.
b. Syphilitic aneurysm.
c. Acute myocardial infarction.
d. Aortic dissection.

FIGURE 19

Inflammation of capillaries in renal glomeruli is often associated with:

a. Hepatitis B.
b. ANCA.
c. Anti-endothelial antibodies.
d. Syphilis.

FIGURE 20

The cause of the pathology in FIGURE 3 is:

a. Cystic medial necrosis.
b. Vasculitis of aorta.
c. Atherosclerosis.
d. Syphilitic aortitis.
e. Dissecting aortitis.
The histological image (FIGURE 4) was obtained from a lung biopsy:
Which one of the following microscopic description best characterizes this process:

a. Suppurative Inflammation  
b. Necrotizing Inflammation  
c. **Granulomatous Inflammation**  
d. Fibrous organization

The following gross and microscopic images (FIGURE 5) were captured from a genital lesion, in a female patient.

Which one of the following infectious agents is responsible for this pathological process?

a. Candida Albicans (Fungus)  
b. Chlamydia Trachomatis  
c. Herpes Simplex  
d. **Human Papilloma Virus (HPV)**

A 24 years old female patient with a known genital HPV infection undergoes a biopsy from her exocervical squamous epithelium that showed the following microscopic features (FIGURE 6): Which one of the following statements best characterizes this patient condition:

a. Normal exocervix  
b. Koilocytosis of the exocervix. No dysplasia seen.  
c. Low grade Dysplasia with Koilocytosis  
d. **High Grade Dysplasia (Carcinoma in Situ) of the exocervix.**
.24

A patient with long standing chronic Hepatitis B expires. On autopsy, his liver grossly displayed a nodular pattern. The gross and microscopic findings are showed in the following images (FIGURE 7):

Which one of the following histopathological descriptions best characterized this patient condition:

a. Liver cirrhosis  
b. Liver Cancer  
c. Acute viral hepatitis  
d. Liver Necrosis

.25

Which one of the following classes of immunoglobulin’s is mostly associated with the mucosal defense function against microbial pathogens?

a. IgM  
b. IgG  
c. IgA  
d. IgD

.26

45 year old man with abdominal discomfort. A gastric biopsy from the antral mucosa showed a chronic gastritis.

The following image (FIGURE 8) displays the pathological changes observed in this biopsy, by the Hematoxylin and Eosin stain as well as by the Giemsa stain (blue inset):

This patient is at risk of developing which one of the following pathological conditions:

a. Gastric Lymphoma, MALT type.  
b. Gastric Ulcer.  
c. Gastric Carcinoma.  
d. None of the above.  
e. All of the above.
The lung of this immunocompromised patient with acute myelogenous leukemia revealed the following pathological changes by Silver stain (FIGURE 9):

Which one of the following diagnoses best describes this condition.

a. Pulmonary Aspergillosis  
   b. Pulmonary Tuberculosis  
   c. Bacterial Pneumonia  
   d. Inhaled Foreign Body Reaction

A 70-year-old woman has been at an extended care facility for the past two years because of her increasing inability to attend to activities of daily living. She can no longer recognize family members. She has no movement disorder, but is lethargic and spends most of her days in a wheelchair or in bed. She develops an acute febrile illness and is noted to be coughing up increasing quantities of yellowish sputum. Her temperature is 38.2 C. A chest radiograph shows infiltrates that nearly fill the left upper lobe. Her family elects not to treat her acute illness, and she dies 4 days later. At autopsy, there is extensive consolidation of the left upper lobe.

Which of the following infectious agents is most likely to cause this patient pulmonary disease?

a. Pneumocystis carinii (jirovecii)  
   b. Mycobacterium Tuberculosis  
   c. Streptococcus pneumoniae  
   d. Influenza A virus

A 66-year-old woman has had a worsening non-productive cough with malaise for the past week. Her temperature increases to 37.4 C. A chest radiograph reveals diffuse bilateral pulmonary interstitial infiltrates in all lung fields. A sputum gram stain reveals normal flora. She recovers over the course of the next two weeks without sequelae. Infection with which of the following organisms most likely caused her illness?

a. Mycobacterium tuberculosis  
   b. Streptococcus pneumoniae  
   c. Influenza A virus  
   d. Cryptococcus neoformans  
   e. Mycobacterium avium-complex
A 25-year-old man receives a bone marrow transplant for treatment of acute myelogenous leukemia. He develops increasing dyspnea 3 weeks later, along with fever and cough. On physical examination his temperature is 37.8°C. A chest radiograph shows irregular interstitial infiltrates. A bronchoalveolar lavage is performed and on cytologic examination it shows cells that are enlarged and have prominent intranuclear inclusions, as seen in **FIGURE 11**: 

Which one of the following microorganisms is responsible for this patient’s condition?

a. **Cytomegalovirus**
b. Pneumocystis carinii (jirovecii)
c. Mycobacterium tuberculosis
d. Influenza B virus
e. Respiratory syncytial virus

The following histological image (**FIGURE 12**) is from a colonic biopsy taken from a patient with diarrhea following broad spectrum antibiotic therapy:

Which one of the following microbial agents is responsible for the colonic lesion?

a. E.Coli
b. Campylobacter Jejuni
c. Entamoeba Histolytica
d. **Clostridium Difficile**
A 46 year old male, truck driver by occupation presented with a history of dry cough, increasing breathlessness since two weeks. He was tested for HIV antibodies and was found to be seroreactive for HIV 1 infection. His sputum samples were tested for presence of acid fast bacilli (AFB), but smears did not reveal AFB. On examination he was febrile with a pulse rate of 90/min, respiratory rate of 34/min, pallor was present. Oral candidiasis was observed. No icterus, cyanosis or palpable lymph nodes noted. Other systemic examination revealed no obvious abnormality. Investigations revealed Hb 10 gm%, TLC 4000/ mm$^3$, with 70% polymorphs, 28% lymphocytes and 25 eosinophils. X-ray chest PA view was within normal limits. The CD4 counts were 200/ml. Sputum was sent for culture and routine microscopy. No growth of pathogenic organisms was reported.

Induced sputum was collected by administering hypertonic saline and Gomori’s Methenamine Silver staining was done revealing clusters of brownish black cysts, cup, crescent and banana shaped navicular bodies against a greenish background, as seen in the following cytological image (FIGURE 13):

Which one of the following microbial agents is responsible for this patient’s pulmonary infection:

a. Pneumocystic Carini (Jiroveci) Pneumonia
b. Cryptococcus Pneumonia
c. Histoplasma Pneumonia
d. Tuberculosis

A transbronchial biopsy was performed on a HIV positive patient with a respiratory symptomatology. The Hematoxylin and eosin stain of the biopsy is shown in the left part of FIGURE 14.

A special histochemical stain was performed on the same biopsy and the results are displayed in the right part of FIGURE 14.

Which one of the following is the most likely diagnosis of the patient described above?

a. Pulmonary tuberculosis.
b. Pneumocystic Carini pneumonia.
c. Kaposi Sarcoma of the Lung.
d. Pulmonary Aspergillosis.
.34
Which of the following conditions in someone living with HIV does **NOT** lead to a diagnosis of AIDS?

a. HIV-related encephalopathy  
b. **Invasive cervical cancer**  
c. Kaposi’s sarcoma  
d. Oral Candidiasis  
e. Pneumocystis carinii pneumonia

.35
Which of the following is the most common and important space occupying lesion of the brain in HIV infections?

a. Candidiasis.  
b. Cryptococcosis  
c. **Toxoplasmosis**.  
d. Herpes encephalitis.

.36
A 27 years old AIDS patient presents with nonproductive cough, shortness of breath and fever. X-Ray exam revealed bilateral interstitial infiltrates. A laboratory work-up of this patient revealed CD4+ cell count of 6/mm³. Despite treatment, the patient died and an autopsy has been performed.

Slide number 6 contains lung tissue from this patient.

A special histochemical stain was performed on this lung tissue.

What of the 4 images (a, b, c, d,) displayed in **FIGURE 15** is the one that displays the microorganism that is most likely to be found in this particular case?

a. (see **FIGURE 15**)  
b. (see **FIGURE 15**)  
c. (see **FIGURE 15**)  
d. (see **FIGURE 15**)
.37

A 42 years old HIV positive patient has died. On autopsy, an enlarged spleen was noticed.
Slide number 7 contains a tissue section for this patient’s spleen. The microscopic findings seen in this section are characteristic for which one of the following pathological changes:

a. Splenic Aspergillosis.
b. **Splenic Leishmaniasis**
c. Kaposi sarcoma involving the spleen
d. Splenic Cryptococcosis

.38

An AIDS patient presents to the clinic with multiple skin lesions. A skin biopsy is performed and showed characteristic pathological changes that are similar to those that are seen in slide number 8. This lesion is most likely associated with which one of the following microorganisms:

a. Herpes simplex virus type 1.
b. **Human herpes virus type 8.**
c. Epstein-Barr virus (EBV)
d. Herpes simplex virus type 2.

.39

What is correct about the process in slide no. 3

a. The process is mostly central, periurethral
b. Lesional glands contain basal cells.
c. There is no increased risk in case of family history of this disease.
d. **A silent type of this disease may appear in up to 70% of elderly patients.**
e. The process is not hormone-dependent.

.40

What is NOT correct about germ cell tumors?

a. **They are mostly histologically homogenous.**
b. Most important clinically is the separation of seminomatous and non-seminomatous tumors.
c. Patients with spermatocytic seminoma are usually older than 60 years.
d. Embryonal carcinoma is much more aggressive than seminoma.
e. Choriocarcinoma is positive for human chorionic gonadotropin.
.41

All of the following are correct except:

a. Up to 10% of germ cell tumors are associated with cryptorchidism.

b. The most common chromosomal change in germ cell tumors: isochromosome 12.

c. The cells of seminoma are usually positive for alpha-fetoprotein.

d. Seminoma is the most common germ cell tumor.

e. Teratoma of testis in adults must be treated as a malignant tumor.

.42

What is correct about pathological processes in the prostate?

a. In benign prostatic hyperplasia there is hyperplasia of both epithelium and stroma.

b. Gleason system was designed to establish the stage of prostatic cancer.

c. 20% of males show signs of benign prostatic hyperplasia after the age of 70.

d. p53 play a central role in prostatic cancerogenesis.

e. Basal cells are absent in glands with high grade PIN.

.43

Comodo-carcinoma of breast:

a. Occurs in the lobular tissue.

b. Lymph node metastases occur in about 30% of cases.

c. Is characterized by central necrosis.

d. Do not progress to invasive cancer.

e. None of the above.

.44

E-cadherin loss is a feature of:


c. Tubular carcinoma of breast.

d. Lobular carcinoma of breast.

e. Colloid carcinoma of breast.
Estrogen- and Progesterone-receptor-positive stains are common in all of the below except:

a. Lobular invasive carcinoma.
b. **Medullary carcinoma.**
d. invasive ductal carcinoma.
e. Colloid carcinoma.

The lesion represented in SLIDE 2 is:

a. Benign.
b. **Malignant.**
c. Non-invasive.
d. Estrogen and progesterone receptor negative

The most important prognostic factor in breast cancer is:

a. The histologic grade of the tumor.
b. The estrogen and progesterone receptor status of the tumor.
c. The age of the patient.
d. **Lymph node metastases.**
e. Family history of cancer.