

YR 2 CONNECTIVE TISSUE/DERMATOLOGY UNIT EXAM -- MARCH 12, 1999.

CHOOSE THE SINGLE BEST ANSWER FOR QUESTIONS 1 - 100.

1. Metaphyseal bone is more porous and fails most often in:
 - A. Compression
 - B. Tension
 - c. Shear
 - D. Bending

2. Low magnitude forces cyclically repeated upon bone may result in:
 - A. Stress fractures
 - B. Open fractures
 - C. High energy fractures
 - D. Direct fractures

3. Fracture repair differs from tissue healing because:
 - A. Hematoma formation is part of the initial stage
 - B. Injured bone is replaced by bone, not scar
 - C. Neovascularization occurs relatively early
 - D. Injury results in loss of structure

4. Which of the following is not associated with the inflammation stage of fracture repair?
 - A. Bone necrosis at fragment ends
 - B. Hematoma formation
 - C. Neovascularization
 - D. Cartilaginous tissue converted to woven bone.

5. In primary bone healing:
 - A. External callus exhibits endochondral bone formation
 - B. Woven bone is converted to lamellar bone
 - C. No callus formation occurs
 - D. Cartilage is converted to woven bone

6. Which of the following characterizes the stage of soft callus formation?
 - A. Begins when pain and swelling subside
 - B. Visible calcification on radiographs
 - C. Vascularity decreases at fracture site
 - D. Medullary canal is reconstituted

7. If you were aspiring to be a champion marathon runner, you would wish to have been endowed with what type of muscle fibers
 - A. Type I
 - B. Type II
 - C. Type III
 - D. Type IV

8. Wolff's Law relates to:
 - A. Articular cartilage deformation due to stress
 - B. Bone remodeling in response to mechanical stress
 - C. Rates of revascularization in avascular necrosis of bone
 - D. The magnitude of muscle force generated relative to the muscle's cross-sectional area
 - E. The ratio of tendon lengthening and muscle contraction

9. The musculoskeletal system is mostly derived from:
- A. Ectoderm
 - B. Endoderm
 - C. Mesoderm
 - D. None of the above
10. The primary unit of mature bone is the:
- A. Zone of Ranvier
 - B. Ring of LaCroix
 - C. Haversian system
 - D. Periosteal sleeve
11. One half of adults height is achieved in most boys by age:
- A. 12 Months
 - B. 18 Months
 - C. 24 Months
 - D. 30 Months
 - E. 36 Months
12. Bone remodeling processes of funnelization and cylinderization takes place in the:
- A. Epiphysis
 - B. Sisyphus
 - C. Metaphysis
 - D. Diaphysis

13. The most common organism which causes osteomyelitis is:
- A. Staph. aureus
 - B. Strep. pyogenese
 - C. H. influenza
 - D. Salmonella
 - E. N. Gonorrhoea
14. All of the following cause articular injury in septic arthritis EXCEPT:
- A. Bacterial toxins
 - B. Enzymatic action of bacteria
 - C. Joint passive motion
 - D. Increased intraarticular pressure
 - E. Secondary products of bacterial cell necrosis
15. Osteochondritis dissecans is due to:
- A. Unknown causes
 - B. Inflammatory dissection
 - C. Acute macrotrauma
 - D. Repetitive microtrauma
 - E. Lipid emboli
16. Avascular necrosis of the bone is common in:
- A. Diabetes mellitus - Type II
 - B. Renal osteodystrophy
 - C. Alcoholism
 - D. Achondroplasia
 - E. Hypertension

17. The patient with the least potential to develop osteomyelitis is:
- A. A 7-year-old with acute lymphoblastic leukemia
 - B. A malnourished 3-year-old
 - C. A 9-year-old with hemiplegia
 - D. An 11-year-old with steroid dependent JRA
 - E. An 8-year-old with S-S disease
18. A collegiate gymnast complains of 5 days of progressive right mid-anterior tibial pain with floor and vault exercises. She denies direct, specific acute trauma to her leg. She is tender at her site of symptoms. The remainder of her exam is normal. The most likely diagnosis is a:
- A. Pathological fracture
 - B. Comminuted tibial fracture
 - C. Greenstick fracture of the tibia
 - D. Stress fracture
19. The basal cells of the epidermis are attached to the basal lamina with:
- A. Desmosomes
 - B. Hemidesmosomes
 - C. Gap junctions
 - D. Tight junctions
20. Basal cell epithelioma (or carcinoma) is:
- A. Locally invasive but seldom metastasizing
 - B. Locally invasive and rapidly metastasizing
 - C. Locally non-invasive but rapidly metastasizing
 - D. Locally non-invasive and non-metastasizing

21. Grading of squamous cell carcinoma by Broders is based upon:
- A. Degree of keratinization of tumor cells
 - B. Degree of nuclear atypia of tumor cells
 - C. Degree of mitotic activity of tumor cells
 - D. Degree of keratinization and depth of tumor growth
22. Classic Kaposi's sarcoma is common among:
- A. Northern Europeans
 - B. Orientals
 - C. Mediterranean descendants
 - D. Mexican Americans
23. The most reliable prognostic factor in melanoma is (are):
- A. Size of the lesion
 - B. Color of the lesion
 - C. Border characteristics
 - D. Depth of tumor growth
24. Actinic keratosis is:
- A. A degeneration of elastic fibers
 - B. A pre-malignant skin lesion
 - C. A benign hyperplasia of the epidermal basal cell
 - D. A pearly semi-translucent nodule
25. Approximately how many keratinocytes are associated with each melanocyte in normal adult human epidermis?
- A. 1
 - B. 10
 - C. 40
 - D. 100
 - E. 200

26. Langerhans cell:
- A. Dopa positive
 - B. Fibrillar proteins
 - C. Membrane-bound granules
 - D. Stains with gold chloride
27. Keratinocyte:
- A. Dopa positive
 - B. Fibrillar proteins
 - C. Membrane-bound granules
 - D. Stains with gold chloride
28. The following radiation reaches the surface of the earth EXCEPT:
- A. 300 nm
 - B. 270 nm
 - C. 280 nm
 - D. 290 nm
29. A red raised 2cm lesion is pressed hard and is still erythematous. One would describe this as a:
- A. Non-blanching macule
 - B. Non-blanching plaque
 - C. Blanching papule
 - D. Red bump
 - E. Blanching papule

30. Which skin phototype burns easily and tans very rarely?
- A. I
 - B. II
 - C. III
 - D. IV
 - E. V
31. By definition a papule is:
- A. Fluid filled
 - B. Greater than 1 cm in diameter.
 - C. Always scaly
 - D. Elevated above the epidermal plane.
32. Causes of papules include all the following EXCEPT:
- A. Epidermal hyperplasia
 - B. Dermal spongiosis
 - C. Infiltration of the dermis or epidermis
 - D. Exocytosis into the epidermis
 - E. Epidermal hypertrophy
33. Causes of scaling include:
- A. Increased keratinocyte production
 - B. Abnormal keratinocyte production
 - C. Keratinocyte immaturity
 - D. Keratinocyte retention
 - E. All of the above

34. A chronic relapsing erythrosquamous skin disease in which both the cutaneous blood vessels and the epidermis are involved resulting red, scaly plaques defines:
- A. Eczema
 - B. Lichen planus
 - C. Psoriasis
 - D. Pityriasis lichenoides
 - E. Mycosis fungoides
35. The most common skin cancer is:
- A. Squamous cell carcinoma
 - B. Basal cell carcinoma
 - C. Melanoma
 - D. Actinic keratosis
 - E. Dermatofibroma
36. The most dangerous infection in atopic dermatitis is:
- A. *Trichophyton rubrum*
 - B. Generalized herpes simplex virus
 - C. *Molluscum contagiosum*
 - D. Warts
 - E. *Staph. aureus*
37. Which of the following is not true of neurofibromatosis 1:
- A. It is transmitted autosomal recessive
 - B. The gene is located at 17q11.2
 - C. Plexiform neurofibromas look like a bag of worms
 - D. Neurofibrosarcomas (or malignant peripheral nerve sheath tumors) occur in 3-5% of patients
 - E. Over half of cases are new mutations

38. Treatment of psoriasis includes:
- A. UVC
 - B. Cholesterol lowering agents
 - C. UVD
 - D. PUVA
39. A pruritic eruption classically consisting of violaceous, scaly, angular papules on flexor surfaces, mucous membranes, and genitalia defines:
- A. Eczema
 - B. Lichen planus
 - C. Psoriasis
 - D. Pityriasis lichenoides
 - E. Mycosis fungoides
40. The procedure of choice for a 75 year old male who is otherwise healthy with constant groin pain which wakes him at night, causes difficulty putting on shoes and socks and radiographically has endstage osteoarthritis of the right hip:
- A. Total hip arthroplasty
 - B. Hip arthroscopy
 - C. Resection arthroplasty of the hip
 - D. Proximal femoral osteotomy
 - E. Hip arthrodesis
41. Which of the following surgical procedures about the hip for the treatment of arthritis causes the joint to fuse?
- A. Total hip arthroplasty
 - B. Hip arthroscopy
 - C. Resection arthroplasty of the hip
 - D. Proximal femoral osteotomy
 - E. Hip arthrodesis

42. The appropriate treatment for a 4-year-old child with an acute staphylococcus aureus infection of the hip joint would be intravenous antibiotics and:
- A. Observation
 - B. Total hip arthroplasty
 - C. Irrigation and debridement of the hip
 - D. Hip arthrodesis
 - E. Resection arthroplasty of the hip
43. The appropriate treatment for an otherwise healthy, cooperative 75-year-old female with constant pain interfering with activities of daily living, with associated radiographic findings consistent with end-stage osteoarthritis of the knee, which has not responded to walking aides, activity restriction, and multiple anti-inflammatory medications would be:
- A. Arthroscopic debridement
 - B. Interpositional arthroplasty of the knee
 - C. Proximal tibial osteotomy
 - D. Knee arthrodesis
 - E. Total knee arthroplasty
44. Which of the following procedures about the knee entails cutting and realignment of bone?
- A. Arthroscopic debridement
 - B. Interpositional arthroplasty of the knee
 - C. Proximal tibial osteotomy
 - D. Knee arthrodesis
 - E. Total knee arthroplasty

45. The most definitive test for a septic joint is the following:
- A. x-ray
 - B. CBC
 - C. Bone Scan
 - D. C-reactive protein
 - E. Aspiration
46. The diagnosis of osteoarthritis of the hip is most quickly and cost-effectively made by which of the following imaging modalities:
- A. Ultrasound
 - B. Bone scan
 - C. X-ray
 - D. MRI
 - E. CT scan
47. Common complaints associated with knee osteoarthritis are:
- A. Difficulty tying shoes
 - B. Difficulty cutting toenails
 - C. Difficulty with stairs
 - D. Groin pain
 - E. All of the above

48. A 58-year-old man with no significant past medical history presents with severe acute back pain. Destructive osteolytic lesions are seen in multiple vertebrae on radiographs, including one with a pathological compression fracture. What is the most likely diagnosis?
- A. Metastatic prostatic adenocarcinoma
 - B. Metastatic renal cell carcinoma
 - C. Metastatic basal cell carcinoma
 - D. Malignant fibrous histiocyoma
 - E. Osteosarcoma
49. A 14-year-old young man presents with a destructive femoral bone tumor with large soft tissue component. Needle core biopsy discloses high-grade osteosarcoma. Chest CT scan reveals multiple mineralized pulmonary lesions consistent with metastases. What is the clinical stage of this tumor according to the Enneking system?
- A. IIB
 - B. IIIB
 - C. IIC
 - D. III
 - E. IV
50. A 16-year-old young man presents with sharp pain in the thigh that has become increasingly more severe and wakes him from sleep. Aspirin relieves the pain. Radiographs disclose a 0.5 cm mineralized intracortical lesion in the distal femoral metaphysis surrounded by a lucent halo and extensive reactive osteosclerosis. What is the most likely diagnosis?
- A. Osteochondroma
 - B. Osteoid osteoma
 - C. Enchondroma
 - D. Osteomyelitis
 - E. Osteochondritis dessicans

51. A 7-year-old boy presents with an 8 cm intrapelvic soft tissue tumor. Biopsy discloses a malignant neoplasm with evidence of skeletal muscle differentiation. What is the most likely diagnosis?
- A. Rhabdomyosarcoma
 - B. Leiomyosarcoma
 - C. Myofibrosarcoma
 - D. Malignant mesenchymoma
 - E. Malignant fibrous histiocyoma
52. Temporal (giant cell) arteritis is a systemic disease of adult patients. Early diagnosis is important because it usually responds to steroid therapy. Select an important complication that can occur in untreated disease.
- A. Interstitial pulmonary fibrosis
 - B. Glomerulonephritis
 - C. Polymyositis
 - D. Blindness
 - E. Uveitis
53. Collagenase is an important enzyme in the degradation of collagen, both in normal tissue remodeling as well as in disease states. The activity of this enzyme is kept in check by which factor?
- A. Tissue inhibitor of metalloproteinase
 - B. Anti-collagenase
 - C. Metalloproteinase
 - D. Lysyl oxidase inhibitor
 - E. Anti-stromelysin

54. Idiopathic pulmonary fibrosis (usual interstitial pneumonitis) is a diffuse fibrosing condition of the pulmonary parenchyma. Choose the single best statement about this condition.
- A. Most cases are caused by environmental factors.
 - B. Most cases are associated with underlying autoimmune disease.
 - C. It is a progressive disease that usually culminates in death.
 - D. Early stage is characterized by honeycomb lung.
 - E. Radiation exposure is an important etiologic factor.
55. A 42-year-old woman complains of a nodular contracture on the sole of her foot. Which of the following lesions would be the most likely cause?
- A. Dupuytren's contracture
 - B. Morton's neuroma
 - C. Desmoid tumor
 - D. Fibromatosis
 - E. Peyronie's disease
56. Schwannoma and neurofibroma are examples of benign nerve sheath tumors. Which feature is more characteristic of schwannoma?
- A. Potential for malignant transformation
 - B. Associated with a hereditary disorder
 - C. Forms an eccentric mass with respect to the nerve of origin
 - D. 11:22 chromosome translocation
 - E. Presentation as a pedunculated skin lesion

57. Most common primary malignant bone tumor:
- A. Osteosarcoma
 - B. Malignant fibrous histiocyoma
 - C. Chondrosarcoma
 - D. Metastatic carcinoma
 - E. Ewing s sarcoma
58. Typical findings in patients with osteogenesis imperfecta include all the following EXCEPT:
- A. Blue sclera
 - B. Skeletal deformity
 - C. Skin laxity
 - D. Brown teeth
 - E. Fractures

QUESTIONS 59 THROUGH 60 REFER TO THE FOLLOWING CASE STUDY

A 55 year old woman comes to your office complaining of acute swelling of her right knee since yesterday. She denies fever, chills, or any previous history of arthritis. She is moderately obese and has a history of diabetes and hypertension. She cannot bear weight on that knee and denies any recent trauma. Arthrocentesis in the office shows WBC=35,000, 80% PMNs, gram stain showed WBCs but no organisms, and crystal analysis shows amorphous and rhomboid shaped crystals which were weakly + birefringent.

59. The most likely diagnosis is:

- A. Gout
- B. Pseudogout
- C. Osteoarthritis
- D. Rheumatoid arthritis
- E. Reiter s syndrome
- F. Lupus

60. The best treatment would be:

- A. Moderate doses of intravenous corticosteroids
- B. Narcotic medications
- C. Intravenous cytoxan (cyclophosphamide)
- D. Methotrexate
- E. Intra-articular corticosteroids
- F. Allopurinol

61. Which type of spine abnormality is directly due to the synovitis of rheumatoid arthritis?
- A. Bamboo spine
 - B. Disc herniation
 - C. Atlanto-axial subluxation
 - D. Osteophyte formation
 - E. None of the above
62. Felty's Syndrome is:
- A. Nephritis + leukopenia + splenomegaly
 - B. Rheumatoid arthritis + leukopenia + splenomegaly
 - C. Vasculitis + leukopenia + splenomegaly
 - D. Pericarditis + leukopenia + splenomegaly
 - E. None of the above
63. Viscosity in synovial fluid is due to:
- A. Excess glucose in the joint fluid
 - B. Fibrin
 - C. Particulate collagens
 - D. Hyaluronate
 - E. None of the above
64. The cartilage in osteoarthritis has:
- A. Increased water content
 - B. Loss of proteoglycans
 - C. Decreased ability to bear weight
 - D. All of the above
 - E. None of the above

65. The typical pattern of joint involvement in the hands in osteoarthritis is:
- A. MCPs (metacarpal-phalangeal joints), PIPs(proximal interphalangeal joints), and wrists
 - B. MCPs (metacarpal-phalangeal joints), DIPs(distal interphalangeal joints), and wrists
 - C. PIPs(proximal interphalangeal joints), DIPs(distal interphalangeal joints), and first carpal-metacarpal joints
 - D. PIPs(proximal interphalangeal joints), MCP(metacarpal-phalangeal joints), and first carpal-metacarpal joints.
 - E. None of the above
66. Which rash results in marked scarring and permanent loss of hair follicles?
- A. Malar rash
 - B. Discoid rash
 - C. Maculopapular rash
 - D. Photosensitive rash
67. Ocular manifestations of chronic corticosteroid therapy include:
- A. Cataracts
 - B. Episcleritis
 - C. Macular degeneration
 - D. Uveitis

68. All of the following are associated with gout EXCEPT:
- A. Hypertension
 - B. Obesity
 - C. Male gender
 - D. Peptic ulcer disease
 - E. Hyperlipidemia
69. Scleroderma causes fibrosis in all of the following organs EXCEPT:
- A. Skin
 - B. Lungs
 - C. Esophagus
 - D. Brain
 - E. Intestines
70. Raynaud s phenomenon is:
- A. Diffuse edema of the hands
 - B. Cold-induced arthritis of the joints of the hands
 - C. Reversible vasospasm
 - D. All of the above
71. In early polymyositis, the muscle weakness is mainly:
- A. Distal
 - B. Proximal
 - C. Radicular
 - D. Diffuse
 - E. None of the above

72. Sacroilitis is seen in:
- A. Ankylosing spondylitis
 - B. Reiter s syndrome
 - C. Psoriatic arthritis
 - D. All of the above
73. Non-steroidal anti-inflammatory drugs act by:
- A. Inhibiting the formation of lipoxins
 - B. Inhibiting phospholipase A2
 - C. Inhibiting cyclo-oxygenase
 - D. None of the above

QUESTIONS 74 THROUGH 77 REFER TO THE FOLLOWING CASE STUDY

The patient is a 29 year old African American female with a 6 month history of joint pain and swelling. She presents to your office with a 3-day history of shortness of breath and chest pain which worsens on inspiration. Physical examination reveals synovitis at the wrists, small joints of the hands, knees, and ankles. She has decreased breath sounds and dullness to percussion at both lung bases. She has an erythematous rash on her cheeks and the bridge of her nose. She has pallor of her conjunctiva and nail beds.

74. The most likely diagnosis is:
- A. Rheumatoid arthritis
 - B. Systemic lupus erythematosus
 - C. Reiter s syndrome
 - D. Dermatomyositis
 - E. Scleroderma

75. The pulmonary findings are consistent with:
- A. Pulmonary fibrosis
 - B. Pneumonia
 - C. Asthma
 - D. Pleural effusions
 - E. Pulmonary embolism
76. The study which will be most cost effective in delineating the pulmonary problem is:
- A. High resolution CAT scan of the chest
 - B. Pulmonary function testing
 - C. Chest x-ray
 - D. Pulmonary angiogram
77. The most effective treatment for this patient's current problem is:
- A. Nonsteroidal anti-inflammatory drugs
 - B. Corticosteroids at moderate doses
 - C. Plaquenil (hydroxychloroquine)
 - D. None of the above
78. You are consulted in the hospital on a patient who developed an acutely swollen knee 3 days post-operatively. The patient is a 65 year old man who is unable to speak due to a previous stroke. Physical examination showed a temperature of 100.3 degrees F, erythema, warmth, and swelling of the left knee. The patient will not let anyone move the knee which he has propped up on a pillow. The most helpful diagnostic test which will assist the physician in treatment is:
- A. Xray of the knee
 - B. Arthrocentesis of the knee
 - C. Open arthrotomy of the knee
 - D. Arthroscopy of the knee
 - E. Bone scan

79. A 27 year old man presents with swelling of the toes, fingers, knees, and wrists for the past 2 years. He has a long history of chronic, scaly rashes over the elbows and knees. He has had low back pain for the past 5 years. His nails show onycholysis. The most likely diagnosis is:
- A. Lupus
 - B. Scleroderma
 - C. Rheumatoid arthritis
 - D. Psoriatic arthritis
 - E. Gout
80. Subcutaneous calcinosis is seen in:
- A. Osteoarthritis
 - B. Osteoporosis
 - C. Polymyositis
 - D. Pseudogout
81. A 40 year old male comes in complaining of stiffness of the back, low back pain which gets better as he moves around. Physical examination shows very limited motion in the spine, reduced range of motion of shoulders and hips. The most likely diagnosis is:
- A. Ankylosing spondylitis
 - B. Gout
 - C. Pseudogout
 - D. Rheumatoid arthritis
82. Joint erosions occur in all of the following arthritides EXCEPT:
- A. Ankylosing spondylitis
 - B. Rheumatoid arthritis
 - C. Osteoarthritis
 - D. Psoriatic arthritis

83. Increased disease activity in lupus is indicated by all of the following laboratory test results EXCEPT:
- A. Low C3
 - B. Low C4
 - C. High titer ANA
 - D. High titer ds DNA
84. Choose the single best statement about normal bone and bone remodeling.
- A. Bone resorption is a slower process than bone formation.
 - B. 80% of bone mass is contained in cortical bone.
 - C. Bone remodeling takes place predominantly in cortical bone.
 - D. Bone formation outpaces bone resorption until old age (60-70 years) when progressive negative skeletal balance ensues.
 - E. Osteoblasts liberate factors that recruit osteoclasts to sites of remodeling.
85. The cells responsible for bone resorption are:
- A. Osteocytes
 - B. Osteoblasts
 - C. Klerkoperocytes
 - D. Osteoclasts
 - E. Fibroblasts
86. Bone resorption cavities:
- A. Are formed over a period of 10 days at 5 microns a day
 - B. Are slow to develop (90 days+) but are filled in over a short period of 10 days
 - C. Are formed over a period of 5 days at 10 microns a day
 - D. Are the principle source of calcium in the blood
 - E. Increase bone strength

87. Osteomalacia:
- A. Is another name for osteoporosis
 - B. Is caused by vitamin D deficiency
 - C. Affects only the proximal femur and pelvis
 - D. Is complicated by hypercalcemia
 - E. Is aggravated by sun exposure
88. Osteoporosis
- A. May be diagnosed by a blood test
 - B. Is always complicated by bone fracture
 - C. Is asymptomatic unless complicated by fracture
 - D. Is a form of osteomalacia
 - E. Cannot be diagnosed before age 75
89. Which of the following methods is/are useful for fracture prediction?
- A. DXA of the central skeleton
 - B. QCT
 - C. Ultrasound
 - D. DXA and SXA of the peripheral skeleton
 - E. All of the above

90. The definition of impairment is based upon:
- A. The individual's physical and/or mental status, independent of job requirements.
 - B. The individual's physical status, independent of job requirements.
 - C. The individual's physical and/or mental limitations, activities of daily living, and job requirements.
 - D. Whether or not someone can perform their job with or without accommodations, given their physical and/or mental limitations.
 - E. Whether or not someone can perform their job in the usual fashion, given their physical and/or mental limitation.
91. Which of the following is true in the management of low back pain?
- A. Two to three weeks of bed rest is important in the management of most acute low back pain.
 - B. Inactivity can cause stiffness, atrophy and prolonged disability.
 - C. Contrary to popular opinion, secondary gain is rarely a factor complicating work-related injuries.
 - D. Work restrictions for someone with low back pain should state, No heavy lifting .
92. Classic radiographic findings in osteoarthritis include all the following EXCEPT:
- A. Subchondral osteopenia
 - B. Loss of joint space
 - C. Eburnation (or sclerosis)
 - D. Subchondral cysts
 - E. Osteophytes

93. Yellow marrow:
- A. Emits a hypointense signal compared to subcutaneous fat on conventional spin-echo T1 weighted MRI imaging
 - B. 15% water, 80% fat, 5% protein
 - C. Relatively more abundant than red marrow in children compared to adults
 - D. Concentrated in the axial and proximal appendicular skeleton in adults
 - E. Can be distinguished from red marrow on plain radiographs
94. A characteristic radiographic finding in spondylitis deformans (or degenerative disc disease):
- A. Picture frame (or empty box) vertebra
 - B. Enesthophytes
 - C. Osteophytes
 - D. Bamboo spine
 - E. Spondylolisthesis
95. Choose the single best statement regarding radiographic findings in osteoporosis:
- A. Early disease is detectable by plain radiographs
 - B. Osteopenia (or radiolucency) is a specific diagnostic finding
 - C. Bone loss is more apparent in areas rich in cortical bone
 - D. Vertebral changes include biconcave endplates (fish vertebrae)
 - E. Sclerosis of vertebral body endplates is characteristic

DIRECTIONS: Match the disease (A-E below) to the synovial fluid findings numbered 96 - 100. Each choice may be used only once.

- A. Osteoarthritis
- B. Rheumatoid arthritis
- C. Gout
- D. Pseudogout
- E. Septic arthritis

- 96. WBC=50,000, 90% PMNs, needle shaped strongly (-) birefringent crystals
- 97. WBC=42,000, 75% PMNs, amorphous weakly (+) birefringent crystals
- 98. WBC=500, 50% PMNs, no crystals, viscous fluid which is clear
- 99. WBC=100,000, 98% PMNs, no crystals, gram + cocci on gram stain
- 100. WBC=20,000, 80% PMNs, no crystals, no organisms on gram stain