MICROORGANISM ARTHRITIS

1. infants and young children
2. staph aureus, Haemophilus influenzae, Gonococcus spp.
3. No real membrane, inflammatory response, pannus
4. Max symptoms within 48 hours, irreversible damage within one week
5. Inflammation of joint and decreased range of motion
6. Large jts, mono-arthritic
7. ↑ ESR & Joint aspiration, Alk Phos (acute = 0, chronic = mild ↑), ↓ HLA B27 & RF
8. neoplastic diseases, immunosuppressed
9. primary lung fungal infection or athletes foot
10. potts disease, destructive
11. strong drugs

BONE NEOPLASIA

12. true
13. unicameral/solitary, males, fibrous tissue
14. trauma
15. expansion via fluid pressures
16. humorous and femur :: 14 years old
17. eucentric
18. asymptomatic/none painful, palpable
19. fibrous tissue, osteoclasts, macrophages, reactive bone
20. excise the protein lining to prevent recuration, replace with bone chips of healthy bone
21. aneurysmal bone cysts
22. externally smooth w/ enlarged intact bone, internally cavernous with non-elastic septa (soap bubble)
23. granulation tissue, a giant cells, minimal trabecular
24. accentrically, expand greatly
25. neural arch
26. vascular components, erodes/bulges bone
27. pain/swelling, fracture, neurological defects
28. after age 20, equally
29. scrape it out and bone pack, radiation if inoperable
30. *Study the benign verse malignant charts.*
31. Bone, cartilage, fibroblasts, blood vessels, blood cells
32. growth plates or articulating cartilage :: they're avascular areas

BONE TUMORS

33. secondary
34. sclerotic, bony projections, little clinical significance
35. face, scroll, sinuses, and tibia.
36. Gardner's syndrome
37. males 5-25
38. nidus, painful, 2 centimeters
39. tiny trabecular a, vascular overgrowth, and PGE2
40. PGE2 to tells vessels to expand but they are compacted by the excessive bone
41. tiny radio Lucent center, radiodensity surrounding it due to reactive bone formation
42. pain at night, 18-year-old male, relieved by aspirin/vasoconstrictive
43. wait until maturity, and then surgically excise
44. neural arches, tibia & femur (diaphyseas or metaphysis)
45. osteoblasts, fibroblasts, and chondroblasts
46. males under 20, ends of long bone often around the knee
47. long transition, cortex disruption, periosteal lifting, and invasion of soft tissue
48. disorganized vasculature, local necrosis, no cortical line, excessive bony tissue.
49. 20%, 90%
50. surgery, chemo, radiation (60%. Five-year survival rate)
51. sarcoma originating from another bone pathology or from a carcinogen.
52. Males 25 years or up, in the flat bones.

CARTILAGE TUMORS

53. Osteochondroma :: **solitary**, multiple, hereditary multiple exostosis (HME)
54. Exostosis, cartilage Covered by fibrous membrane
55. Solitary
56. men, painless lumpy joint
57. growth plates.
58. Surgically :: for cosmetic reasons, only 25% become malignant
59. Enchondroma
60. asymptomatic solitary
61. slow-growing mature cartilage enclosed by vascular stroma with irregular calcification
62. Islands of cartilage
63. males.
64. Ollier's Disease
65. late stage, chondrocytes

66. 75%
67. 45-year-old males
68. Ribs, shoulder, and pelvic girdle.
69. Translucent gray white mast with necrosis and cysts centrally
70. localized bone destruction, random↑ Densities, expanded bone, ST mass, 50% have stippled calcification
71. surgery
72. lung, liver, kidney, and the brain
73. 30 -- 90% dependent on where it's located
74. both treatments attacked fast dividing cells, chondrosarcoma is very slow-growing

FIBROUS TUMORS

75. slowly expanding focal lesion :: femur, tibia, ribs, and facial bones
76. fibroblasts, collagen, irregular trabecular, cysts, and slight hemorrhage
77. adults and children :: less than 1%
78. monostotic
79. typically asymptomatic, enlarged bone, pathological fracture
80. deformed shape and size of bone, limb length discrepancies, pathological fracture
81. well defined radio lucent lesions, enlarged bone, ground glass matrix
82. non-ossifying fibroma or fibroxanthoma :: children over 2 yrs
83. true
84. .5 -- 6 cm :: tibia, fibula, femur
85. well demarcated soft yellow/gray tissue comprised of fibroblasts and giant cells
86. bone formation, cortical replacement
87. nocturnal leg pain, pathological fracture
88. it's not biotch
89. primitive connective tissue, fibroblasts, sheets of malignant fibrous tissue
90. slowly, males 30 to 40 years
91. two-year duration of local low-grade pain and swelling, often referring to a joint
92. surgical removal :: metastasizes to the lungs and lymph nodes

BLOOD TUMORS

93. giant cell tumor and multiple myeloma
94. multinucleated, monocyte and macrophage origin
95. females 20 to 40 years (B) :: males 20 to 40 years (M)
96. metaphysis of tubular bone, large solitary lesion
97. multi-lobar with areas of hemorrhage, cysts, and yellow necrosis

98. benign
99. nonspecific local pain/tenderness, functional disability, pathological fracture
100. large radiolucent lesion of epiphysis, pinning cortex, septa, “soap bubble appearance “
101. standard (surgical, drugs, radiation)
102. plasma cells, bone marrow
103. 1-5mm lesions that appear osteolytic and round, “punched out” appearance
104. males 50 -- 70 years, farmers with pesticide exposure or men's hair coloring
105. anemia, osteopenia, renal disease, increased immunoglobulins/serum and urinary proteins
106. intermittent Px becoming continuous, worse @ daytime/activity/weight-bearing, rapid onset posttrauma
107. weight loss, cachexia, anemia, unexplained osteopenia
108. Vertebral body, skull, pelvis
109. Unknown
110. mostly palliative, marrow transplant or thalidomide may also work :: 90% die in three years

MISC PATHOLOGIES SIMILAR TO BONE

111. hemangioma, Ewing’s sarcoma
112. congenital vascular variant with large thin walls & sinuses surrounded by trabeculae and reactive bone
113. clinically silent :: localized pain, muscle spasm, neurological compromise
114. striped/corduroy appearance
115. small, round, closely packed cells
116. males 5 to 30 years old
117. highly necrotic, genetic
118. any bone, prefers mid-shaft of long bones and pelvis, arises and medullary cavity
119. periosteal "onionskin" appearance
120. standard, 75% five-year survival
121. metastatic bone tumor, bone involvement

SECONDARY BONE TUMORS

122. 70%
123. breast, lung, prostate, and kidney
124. hematogenous
125. breast :: prostate
126. vertebrae
127. second half of the life
128. weight loss, anemia, skeletal pain, fever
129. deep boring unrelieved by rest may worsen at night
130. lytic(70%), blastic (15%), mixed(5%) :: moth eaten or permeative destruction

131. body's natural response to invasion of tissue
132. ↑ ESR, Normal alk phos, anemia, ↓ WBC
133. no periosteal lift, rare st masses, small lesions, multi-site, structures not visualized, no bone expansion
134. standard :: poor

JOINT BASICS

135. densely packed type 1 collagen, little stretch
136. all internal aspects of a joint, articular surface
137. no basement membrane or gap junction
138. macro phages
139. secretory, hyaluronic acid
140. villi and microvilli
141. loose highly vascularized areolar tissue
142. posteriorly overlying the fat pad
143. plasma filtrate
144. fibrinogen and alpha-2 macroglobulin, clear
145. hyaluronate is highly negative with a high water affinity
146. molecular sieve (forces debris away from joint surfaces and into macrophagic membrane)
147. is diffusion dependent
148. fluid absorption, better fits and better weight distribution
149. calcified and subchondral
150. between the radial and calcified zones
151. cartilage and mineralized tissue
152. all the time :: only with chemical stimulus (eg acromegaly)
153. water :: type 2 collagen and proto-glycans
154. intercellular matrix of hylanine, nucleus pulposis
155. referred nerve pain due to joint disturbance
156. mechanical stimuli :: pressure and stretch
157. tension, musculotendinous junction
158. initiation & cessation of movement
159. pain
160. closed sacs w/ moist walls :: fetal (deep bursae), jt/subcutaneous (friction response)
161. complex tubes wrapping tendons :: mesotendons
162. synovial membrane

NON-INFLAMMATORY JOINT DISEASE

163. bone building
164. excess of deposition of fibrillin in cartilage
165. asymmetric, joint space loss, subchondral sclerosing, osteoclasts, mechanical pattern of wear
166. osteoarthritis or osteo arthrosis, mechanical and biological factors
167. synovial
168. 95% of us, 40-50 yr old men is MC :: older people in weight bearing joints
169. Women
170. Native Americans
171. trauma, infection, repetitive use, heredity, immobility, ….
172. Primary :: secondary
173. genetically poor cartilage, injury, increased stiffness of subchondral bone
174. fibrillin
175. stiffness causes increased stress to be transmitted into the cartilage
176. chondrocytes, erosion, softening (fibrocartilage imbibs water)
177. matrix destroying proteases & fat
178. hyaline (good), & fibrocartilage (bad)
179. subchondral fissure that balloons out with synovial fluid
180. injury to the vascularized bone
181. normal, because it is a very slow process
182. jt. margins (eg. osteophytes) & subchondral bone (via subadjecent marrow)
183. repair and increase load surface, mechanical forces
184. fibrocartilage and fibrous tissue
185. pulling of annulus at the periosteal attachment
186. disc degeneration shifts weight to the already degenerated facets
187. articular surface polished causing death of osteophytes
188. synovial villus hypertrophy, capsular care, ligaments/menisci fray :: geode
189. aching joint, worse w/ activity & prolonged rest, better w/ rest, DIPS & PIPS, Doc observed ↓ ROM
190. Hallux valgus
191. localized swelling
192. asymmetrical, joint space loss, subchondral sclerosing, cysts, loose bodies, vacuum sign
193. lumbar, hip, knee
194. common in spine, nitrogen gas from disc degeneration appears as radiolucent pockets
195. Chondromalacia Patella
196. DJD
197. softening, fissuring,and fibrillation

198. is not
199. inherent cart defect, abnormal synovial membrane, loss of contact w/ articular cartilage
200. 16-30 years :: insidious w/out recent trauma
201. possible, minor changes occur in everyone by 25 years, and 50% show gross changes
202. Diffuse fairly constant ache, worse w/ stairs & activity, squatting impossible, overall stiffness, crepitus
203. Improper appliances (knee braces), immobilization/casts, repetitive loading, & medial meniscectomy
204. Poor extensor mech., functional incongruity, misaligned lwr extr, recurrent sublux/disloc, patellar instability
205. CMP & changes in calcification & vascularization of subchondral bone
206. MRI
207. balance muscles, reduce tracking, cortisone, NSAIDS, cut er' open
208. Neuropathic Arthopathy or Charcot's Joint
209. premature & excessive traumatic :: severe destruction and instability
210. congenital, acquired, and Iatrogenic (doctor induced)
211. MS, syphilis, alcoholism, type I diabetes, trauma
212. In ankles/feet, altered gait, loss of deep tendon reflex, insensitivity to pain, instability, jt enlargement,
213. Weeks to years
214. Initially insignificant, later... DJD, dislocation, subchondal sclerosis, "bag of bones" debris appearance
215. density, debris, destruction, dislocation, distention, and degeneration

INFLAMMATORY JOINT DISEASE

216. lytic, symmetrical, erosion of joint margins, ligamentous laxity, cysts
217. systemic inflammatory :: skin, blood, jts, muscle, heart, lungs
218. rheumatism, non-supperatice proliferative, articular cartilage, ankylosis of jts
219. Females in their 30-40s
220. Unknown, may be viral, genetic, or autoimmune
221. Unpredictable, 90%, gradual, first 5 years
222. Smaller jts of extremities in a symmetrical distribution :: cervical
223. non-distinct
224. inflammation (helper T-cells, plasma cells, & macrophages)
225. Becomes edematous, thickens, & hyperplasia. Fibrin covers portions of it
226. villi production, rice bodies (fibrin pieces)
227. osteoclastic activity, juxta-articular erosion & osteoporosis, subchondral cysts
228. pannus
229. fill jt space : produce protease, elastase, collagenase : decrease proteoglycans : increase fibroblasts : decrease ROM
230. Autoimmunity to Type II collagen due to immune complex RA-IgG found in synovial fluid, hyaline, & fibrous tissue

231. fibrous bands within pannus, fibrous ankylosis, bony ankylosis
232. ↑ ESR, normal alkaline phosphatase levels, mild anemia, rheumatoid factor
233. although sensitive, poorly visualizes lytic changes
234. Radial, ulnar
235. 90% of RA :: 5% of normal
236. Malaise, fever, non-local pain → becomes local, inflammation, stiffness w/ activity, conjunctivitis
237. Rheumatoid nodules of the elbows/forearms, acute vasculitis
238. Areas of fibrous necrosis surrounded by lymphocytes and granulation tissue
239. Bilateral symmetrical, pseudocyts, "rat bite" lesion, uniform jt space loss, soft tissue swelling, osteoporosis
240. Still's disease, 16 yrs, less inflammation & pannus formation
241. ↑ growth plate activity, or cause premature fusion
242. Mono, oligo, or systemic
243. Knees :: fever, rash, & organ enlargement
244. 70-90%