Chapter 23 Clients with Musculoskeletal System Disorders

Skeletal System
° Skeleton of the body [corresponds to Figure 23-1]
° Frames and protects body, helps produce movement, stores calcium, produces blood cells in bone marrow
° The skeletal muscles support the body and allow the bones to move [corresponds to Figure 23-2]
° Classification of long bones according to shape [corresponds to Figure 23-3]
° Hard connective tissue – bone and cartilage

Muscular System
° Types of muscle
  o Skeletal – voluntary
    • Properties
      ↑ Excitability
      ↑ Contractibility
      ↑ Extensibility
      ↑ Elasticity
  o Smooth- visceral, involuntary
  o Cardiac

Collaborative Care
° Laboratory tests
° Heat and cold applications [corresponds to Table 23-1]
  o Applying Heat
    • Dry – hot water bottle, electric pad, aquathermia pad, disposable heat pack, hypothermia or other blanket
    • Moist – compress, hot pack, soak, sitz bath
  o Applying cold
    • Dry – disposable cold pack, ice bag, ice glove, ice collar, hyperthermia blanket
    • Moist – compress, soak, cooling sponge bath
° Risk factors using heat and cold applications [corresponds to Box 23-4]

Bone Disorders
° Fractures
  o Types of fractures [corresponds to Figure 23-5]
  o Casts
  o Traction [corresponds to Figure 23-7]
    • To treat fractures, prevent/correct deformities, relieve muscle spasms, relieve nerve pressure, and maintain position
    • Applied to skin or bone
  o Complications of fractures
    • Fat embolism – life threatening fractures of the long bones and pelvis and crush injuries; fat from the bone marrow form emboli, travel to the lungs
    • Compartment syndrome – circulation reduced, tissue swelling, hemorrhage, or constricting cast, tissue becomes ischemic
• Deep vein thrombosis (DVT) – blood clots in deeper veins, especially after fracture or pelvis or hip.
• Shock – hypovolemic and psychogenic
• Infection
• Avascular necrosis
• Gangrene leading to amputation
  ↑ Term: phantom pain

° Osteoporosis
  o Loss of bone density
  o Differences among cultures [corresponds to Box 23-1]
  o Bone density test, x-ray
  o Treatment: medication and exercise
  o Moderate weight-bearing exercise and calcium intake as prevention
  o Hip fractures

° Osteomalacia
  o Vitamin D deficiency; reversible
  o Manifestations: muscle weakness and stiffness
  o X-ray
  o Treatment: vitamin D and sun exposure

° Osteomyelitis
  o Infection of bone [corresponds to Figure 23-9]
  o Manifestations: extreme tenderness at site, fever
  o Treatment: IV antibiotics, possible debridement

° Bone cancer
  o Primary or secondary
  o Osteosarcoma and Ewing’s
  o Manifestations: pain at site, swelling and impaired function
  o X-ray and biopsy
  o Treatment: limb salvage surgery or amputation, chemo, radiation

Nursing Care
° Priorities body alignment and pain management
° Monitor cast till dry
° Monitor neurovascular status [corresponds to Box 23-2]
° Monitor traction
° Legs abducted after hip replacement surgery
° Psychosocial status of client
° Identify several possible nursing diagnoses related to the body system assessment.
° Identify specific nursing measure which will be implemented for the client with a cast. The client who is in traction.
° Nursing Process Care Plan: Client in Skeletal Traction

Inflammatory Disorders
° Rheumatoid arthritis (RA)
  o Manifestations: joint stiffness, especially morning; fatigue, anorexia, weight loss, possible fever; joint swelling, warmth, redness; possible deformity
Presence of rheumatoid factor (RF), elevated sedimentation rate, anemia, x-ray shows soft tissue swelling
- Treatment: medication, heat, cold, rest, stress reduction
- Comparison of rheumatoid arthritis and osteoarthritis (degenerative joint disease) [corresponds to Table 23-2]

Degenerative joint disease (DJD)
- Osteoarthritis
- Caused by wear and tear
- Manifestations: stiffness and pain – “deep ache”; no swelling, warmth, redness
- Treatment:
  - Total hip replacement [corresponds to Figure 23-11]
  - Total knee replacement
  - Joint replacement surgery to improve mobility & function

Gout – uric acid crystals
- Manifestations: red, swollen, hot, painful joint
- Treatment: medication to decrease uric acid levels primary treatment

Ankylosing spondylitis
- Arthritis in spine – stiffening, possible fusion
- Manifestations: loss of mobility in spine, possible pain in hips and legs
- X-rays
- Treatment: antiinflammatory drugs, mild exercise for mobility

Lyme disease
- Deer tick bite
- Manifestations: flu-like symptoms, possible “bulls eye”
- Treatment: antibiotics

Priorities in nursing care – pain relief and maintaining mobility, rest during exacerbations; proper alignment
- Selected heat and cold applications [corresponds to Box 23-3]

Spinal Disorders
- Terms: kyphosis and lordosis

Scoliosis
- Manifestations: lateral curvature
- X-ray
- Treatment: proper posture, exercise, bracing, surgery with insertion of metal rods

Low back pain
- X-ray, MRI
- Treatment: NSAIDs, muscle relaxants, moderate exercise, heat & cold, surgery with herniated or degenerated disk

Joint and Muscle Disorders
- Strains and sprains
  - Strain – overworked muscle, extended beyond normal ROM
  - Sprain - ligament twisted or torn; repetitive injuries (carpal tunnel)
    - X-ray to rule out fracture
    - R Rest
- Ice
- Compression
- Elevation
- Risk factors for heat & cold [corresponds to Box 23-4]
- Immobilizing sprained and strained joints – binders, splints, casts
- Psychological effects of immobilization

Autoimmune and Other Disorders
  - Systemic lupus erythematosus
    - Autoimmune, inflammatory
    - Manifestations: fatigue, joint pain, fever, anorexia, weight loss, butterfly rash, symptoms increase with sun exposure; 50% develop renal problems
    - Rule out other disorders, elevated sedimentation rate, anti-DNA antibody test usually positive
    - Treatment: NSAIDs, antimalarial hydroxychloroquine, corticosteroids, azathioprine
  - Fibromyalgia
    - Muscle pain, esp. trunk & extremities, believed associated with sleep disorder
    - Manifestations: great fatigue, muscle stiffness, pain
    - Diagnosed by symptoms
    - Treatment: treat sleep disorder, NSAIDs, regular exercise, reduce stress

Critical Thinking Care Map: Caring for a Client with Rheumatoid Arthritis