

## CONDITIONS OF THE MUSCULOSKELETAL SYSTEM

### I. Knowledge

The resident will be able to discuss the definition, diagnosis, and initial management of the following:

- A. Normal anatomy and physiology
- B. Normal growth and development
- C. Musculoskeletal history taking
- D. Principles of musculoskeletal physical examination
- E. Laboratory data including indications, contraindications and interpretation (e.g. joint fluid)
- F. Testing
  1. Interpretation of common musculoskeletal radiographs
  2. Appropriate use of magnetic resonance imaging, computed tomographic scanning and bone scanning
  3. Procedures: indications and understanding of techniques
    - a. Arthrogram
    - b. Myelogram
    - c. Arthroscopy
- G. Pathogenesis/pathophysiology/recognition
  1. Joint pain, swelling and erythema
  2. Muscular pain, swelling and injury
  3. Musculoskeletal trauma
  4. Fractures
  5. Dislocations
  6. Tendon injuries
  7. Nerve injuries
  8. Bone and joint deformities
  9. Bone and joint infections
  10. Metabolic bone diseases
  11. Musculoskeletal congenital anomalies
  12. Musculoskeletal birth injuries
  13. Compartment syndrome
  14. Avascular necrosis
  15. Osteoporosis
  16. Overuse syndromes
- H. Pediatric problems
  1. Hip dislocation
  2. Congenital hip dysplasia
  3. Legg Calvé-Perthes disease
  4. Osgood-Schlatters disease
  5. Slipped capitofemoral epiphysis
  6. "Clubfoot" (talipes)
  7. Intoeing (metatarsus adductus, tibial torsion, femoral anteversion)
  8. "Bow leg" (genu varum) and "knock knee" (genu valgum)
  9. Epiphyseal injuries in children according to the Salter-Harris classification
  10. Transient synovitis
  11. Child abuse
- I. Management and therapy
  1. Outline expected course with and without therapy
  2. Patient education for acute and chronic problems
  3. Pharmacologic treatment
    - a. Salicylates
    - b. Nonsteroidal anti-inflammatory agents, including cox-2 inhibitors
    - c. Steroids, oral and injectable
    - d. Muscle relaxants
    - e. Antibiotics

4. Supportive and corrective devices
    - a. Braces (thoraco-lumbar, knee)
    - b. Casts
    - c. Splints
    - d. Orthotics
  5. Rehabilitation
    - a. Physical therapy
      1. Cold, heat
      2. Ultrasound
      3. Exercises
      4. Iontophoresis
    - b. Occupational therapy
    - c. Alternative modalities
    - d. Psychosocial aspects of trauma
  6. Surgery
    - a. Internal and external fixation devices
    - b. Artificial joint replacement
- J. Prevention
1. Pre-participation screening
  2. Conditioning and training
  3. Injury prevention
  4. Physical fitness/Exercise Prescription
  5. Bone loss
    - a. Nutrition
    - b. Exercise
    - c. Pharmacology

## II. Skills

The resident will demonstrate counseling and preparation of the patient, including discussion of sequela, for the following:

- A. Basic Care
1. Fractures (simple, stable, closed and nondisplaced)
    - a. Metacarpal, metatarsal, phalangeal
    - b. Forearm, single bone midshaft
    - c. Humerus, midshaft
    - d. Clavicle
    - e. Ribs
    - f. Vertebrae, lumbar or thoracic compression-type
    - g. Pelvis, excluding interruption of the pelvic ring
    - h. Patella
    - i. Lower leg, single bone midshaft
    - j. Unimalleolar ankle
    - k. Calcaneus
  2. Sprains and strains
    - a. Finger
    - b. Toe
    - c. Ankle
    - d. Knee
    - e. Vertebral column
    - f. Wrist
    - g. Elbow
    - h. Shoulder
    - i. Neck
    - j. Muscular strains (e.g. hamstring, trapezius)
  3. Other problems
    - a. Costochondritis
    - b. Bursitis/tendinitis/tenosynovitis
    - c. Elbow: "tennis", "nursemaid", "little-league"
    - d. Entrapment syndrome
    - e. Baker's cyst
    - f. Chondromalacia patellae

- g. Osgood-Schlatter disease
  - h. Osteochondroses/aseptic necrosis
  - i. Osteoarthritis/crystal-induced arthritis (e.g. gout/pseudo-gout)
  - j. Metabolic bone disease (osteoporosis, Paget's disease)
  - k. Acute and chronic low back pain
  - l. Foot conditions
    - 1. Halux Valgus (bunions)
    - 2. Plantar Fasciitis
    - 3. Morton's Neuroma
  - m. Osteomyelitis
  - n. Overuse syndromes
    - 1. Shoulder impingement
    - 2. Patellofemoral syndrome
  - o. Rheumatologic Disorders
  - 4. Procedures (indications, contraindications and competency)
    - a. Joint aspiration (arthrocentesis)
    - b. Joint and musculoskeletal injection (local anesthesia, steroid)
    - c. Wrapping and taping
      - 1. Elasticized bandage
      - 2. Ankle taping
      - 3. Clavicular figure-of-eight bandage
      - 4. Soft cervical collar
    - d. Splints (upper and lower extremity)
    - e. Plaster and fiberglass casts
      - 1. Short and long leg, with and without walker
      - 2. Short and long arm
      - 3. Thumb Spica
      - 4. Cast wedging
      - 5. Cast problems
    - f. Dislocation reduction
      - 1. Simple anterior shoulder
      - 2. Radial head
      - 3. Simple posterior elbow
      - 4. Phalanges
      - 5. Patella
      - 6. Mandible
    - g. Traction application (Buck's, cervical)
- B. Advanced care
- 1. Fractures
    - a. Closed tarsal and carpal bones, particularly navicular
    - b. Colles' fracture
    - c. Nondisplaced medial or lateral epicondyle of humerus
    - d. Nondisplaced type I or type II epiphyseal injuries in children
    - e. Jones Fracture (proximal 5<sup>th</sup> metatarsal)
  - 2. Meniscal tears
  - 3. Recurrent dislocations (e.g. shoulder, patella)
- C. Orthopedic Emergency Recognition and Stabilization
- 1. Compartment Syndrome
  - 2. Hip Dislocation
  - 3. Knee Dislocation
  - 4. Pelvis Fracture
  - 5. Cervical Spine Fracture
  - 6. Cord Injury
- D. Surgical Assisting