Skeletal Muscle Pathology
For Second Year Dental Students

By
Dr. Ioannis G. Koutlas
Duchene muscular dystrophy

• X-linked
• Pelvic and shoulder girdles
• Deletion of gene that encodes dystrophin
• Degeneration of muscles, impaired repair, fibrosis, fibrofatty deposits
• Elevated serum creatinine kinase
• Death form respiratory insufficiency, cardiac arrhythmia, 10-15 years of age wheel chair-bound
Myotonic dystrophy

- AD
- Most common form of adult MD
- Sustained muscular contractions and rigidity
- Progressive muscle weakness and wasting
- Chromosome 19
- Atrophy of type I and hypertrophy of type II fibers
- Anticipation
  - Earlier age of onset and increased severity in successive generations
Myotonic dystrophy

• Three clinical groups
  – Congenital
  – Adult: facial and jaw muscles, ptosis
  – Late: minimal symptoms
Autoimmune Myopathies

• Dermatomyositis
  – Complement mediated cytotoxic Abs against microvasculature of muscle

• Polymyositis
  – Direct damage by cytotoxic T cells

• Myasthenia Gravis
  – Muscular fatigability caused by circulating Abs to acetylcholine receptor at the myoneural junction
  – Extraocular muscles, swelling muscles, extremities
  – Pts can develop other autoimmune diseases
  – 40% patients have thymoma
  – 75% of remaining thymic hyperplasia
  – Removal of thymus can be curative
Polyarthritis Nodosa

- Men
- Small and medium size arteries
- Vasculitis
- Decreased blood supply to organs
- Implicated
  - Hepatitis B (~30%)
  - Sulfa drugs, penicillin
Polymyalgia Rheumatica

- Pain and stiffness around large muscle groups
- Neck, shoulders, hips
Temporal Arteritis

- Inflammation of large arteries
- Temporal artery and other arteries
- Headache, visual changes
- Confirmatory biopsy
- If untreated can lead to blindness