Gigantism

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What is it?

- Abnormal growth
- Growth hormone in childhood
- Very rare
- Acromegaly
Causes

- Benign pituitary gland tumor
- Genetic mutation
  - Can run in families
- Carney complex
- McCune-Albright Syndrome (MAS)
- Multiple endocrine neoplasia type 1 (MEN-1)
Growth Hormone

• Levels fluctuate during day
  • Normally falls after eating a lot of sugar

• Secreted by pituitary
  • Acts on cells in liver
    • Release Insulin-like Growth Factor (IGF-1, or Somatomedin-C) in steady fashion

• Hypothalamus sends neuropeptides down pituitary stalk to gland
  • Stimulates = Growth hormone releasing hormone (GHRH)
  • Inhibits = Somatostatin
Symptoms

- Growth
  - Height, muscles, organs
- Delayed puberty
- Irregular periods
- Abnormal production of breast milk
- Double vision, difficulty with peripheral vision
- Headache
- Increased sweating
- Sleep problems
- Weakness
Symptoms (cont.)

- Frontal bossing, prominent jaw
- Thickening of facial features
- Gaps between teeth
- Large hands and feet
  - Thick fingers and toes
Effects on Body

- Muscle weakness
- Osteoarthritis
- Peripheral nerve damage
- Increased death rate
Progression of Disease

- Larger than children of same age
  - Some parts proportionally larger
- Nerves in brain pressed
  - Headaches
  - Vision problems
  - Nausea
Diagnosis

• Physical exam
• Hormone testing
  • Elevated blood IGF-1
• Oral glucose tolerance test (OGTT)
• Imaging scans
  • Detect tumors
Treatment

- Surgery
- Medication
  - Somatostatin analog injections
  - Drugs to block action of growth hormone on liver cells
- Radiation
  - Stereotactic radiosurgery
Prognosis

• Surgery usually successful
  • Possible low levels of other hormones
    • Adrenal insufficiency
    • Diabetes insipidus
    • Hypogonadism
    • Hypothyroidism
• Early treatment can reverse many changes
• Lack of treatment can lead to negative effects