Two Minute History

Dissection:

- 300 B.C
  Alexandrian Egypt: King Ptolemy I, it’s ok to dissect cadavers of executed, mummies etc…

- Herophilus
  “Father of Anatomy” accused by a rival of dissecting 600 criminals…..live criminals

- 1300 AD Europe
  Pope Boniface VIII edict to stop dissection to reduce the flow of bodies “parted out and boiled” from the crusades. Unclear if this is broad ban or very narrow.
Dissection:

• 1540 parliament passes “The United Company of Barbers and Surgeons, dissect 4-6 executed criminals/yr (not enough even then)

• 1600’s Britain. The executed are dissected in public as punishment

• 1628 William Harvey (cardiovascular fame). Autopsy of live and dead…. Medicine expands and shortages develop Harvey dissects father and sister

• 1740’s Lots of private medical schools competing for students, market forces develop

Dissection:

• 1700’s with the expansion of medical schools cadavers are used as tuition

• Competition is very high and medical schools actively advertise that training includes dissections etc..

• 1828 London had 10 full time & 200 part time body snatchers (“seasonal work” at 312 bodies/yr)

• Inventions to foil grave robbers

• 1828 Robert Knox….and the rest is amazing history.
Dissection:

• 1828, knock on the door, Knox’s assistant purchases a cadaver

• William Hare and wife had a death in their boarding house and used the body to pay debt owed on the room

• William Burke and William Hare realize the financial potential

• Drunk is smothered in the house and sold + 13 others (too lazy or too dumb to dig the already newly dead instead of killing?)

• Mary Patterson......

• Burke was hanged: 25,000 watched. Hare was granted immunity as crowd called “Burke Hare”

• Burke dissected: 30,000 came to see the open lab

• Knox hung in effigy:
  Parliament asks the question can we teach from models/drawings?

Burke’s death mask
Stiff: The curious lives of human cadavers
by Mary Roach, 2003

Upper Extremity
Upper Extremity

Arm
- Anterior Compartment
- Posterior Compartment

Cubital Fossa

Forearm
- Anterior Compartment
- Posterior Compartment

Osteology: Humerus

Anterior Surface
- Head
- Anatomical neck
- Greater & Lessor tubercle
- Intertubercular groove
- Surgical neck
- Trochlea & Capitulm
- Coronoid & radial fossa
- Medial & Lateral epicondyles
Osteology: Humerus

Posterior Surface
- Head
- Anatomical neck
- Greater tubercle
- Surgical neck
- Spiral groove
- Olecranon fossa
- Lateral & Medial Epicondyle

Anterior
- Acromion
- GT
- LT

Posterior
Osteology: Forearm

**Ulna**
*Major weight bearing bone at the elbow joint.*

- Proximal the radial notch articulates with head of radius, allows supination and pronation
- Trochlear notch articulates with trochlea of humerus, mediates extension
- At extension, olecranon fits into olecranon fossa of humerus
- Head and neck are distal

**Radius**
*Major weight bearing bone of the wrist*

- Proximal head articulates with the capitulum (“little head”) of the humerus.
- Proximal head also articulates laterally with radial notch of ulna
Interosseous membrane

Transmits forces from ulna (proximal) to radius (distal).
Very tough connective tissue.
Landmark for several other structures, stay tuned.

Colles’ fracture, a fracture of the distal radius with forearm in extension.
Elbow

- Humeroulnar articulation
  
  Weight bearing joint

- Radial head articulates with capitulum & ulna

- Allows supination & pronation
Articular Capsule

Radial, ulnar & annular ligaments.

Radial Head Subluxation: Nurse Maid’s Syndrome

Dislocation of the head of the radius from the annular ligament

http://www.tcusportsmedicine.com/elbow.htm
Upper Extremity

Arm
- Anterior Compartment
- Posterior Compartment

Cubital Fossa

Forearm
- Anterior Compartment
- Posterior Compartment

C5 → Superior Trunk → Lateral Cord → Musculocutaneous
C6
C7 → Middle Trunk
   Terminal Nerves of the Anterior Division → Median Nerve
C8 → Inferior Trunk → Medial Cord → Ulnar Nerve
T1

Robert Taylor... Drinks... Cold.... Beer
Anterior Compartment

Superficial

- Bicep Long Head
- Bicep Short Head

Actions

- Flex elbow
- Supinator of forearm
- Flex, adduct & medially rotate shoulder

Anterior Compartment

- Bicep Long Head

Origin:
Supraglenoid Tubercle
Anterior Compartment

• Bicep Long Head

Insertion:
Radial Tuberosity & Aponeurosis
Anterior Compartment

• Bicep Short Head

Origin:
Coracoid Process

Insertion:
Radial Tuberosity & Aponeurosis
Superficial Anterior Compartment

• Coracobrachialis
  Adducts & Flexes shoulder

• Brachialis
  Flexes elbow

Deep Anterior Compartment

Coracobrachialis
Origin: Coracoid process
Insertion: Medial humerus

Adducts & Flexes shoulder
Brachialis

Origin: Shaft of humerus
Insertion: Ulnar tuberosity

Flexes elbow
Upper Extremity

Arm
- Anterior Compartment
- Posterior Compartment

Cubital Fossa

Forearm
- Anterior Compartment
- Posterior Compartment

C5
Superior Trunk
C6
Posterior division
C7
Middle Trunk
C8
Inferior Trunk
T1
Terminal Nerves of the Posterior Division
- Axillary Nerve
- Radial Nerve

Robert Taylor. Drinks... Cold..... Beer
Posterior Compartment

• Triceps-3 Heads
  Long, Medial, & Lateral

  • (Anconeus)

Posterior Compartment

• Triceps-Long Head
  Origin: Infraglenoid tubercle
  Insertion: Olecranon process
Posterior Compartment

• Triceps-Lateral Head
  Origin: posterior humerus lateral to spiral groove
  Insertion: Olecranon process

• Triceps-Medial Head
  Origin: posterior humerus below the spiral groove
  Insertion: Olecranon process
Triceps Actions

- Long head extends and adducts shoulder
- *As a group it is the extensor of elbow*

Angiology

Axillary Artery

- Supreme Thoracic
- Thoracoacromial
  - Pectoral
  - Deltoid
  - Clavicular
  - Acromial
- Lateral Thoracic
- Anterior Humeral
- Posterior Humeral
- Subscapular
  - Circumflex scapular
  - Thoracodorsal
Angiology

Axillary

Brachial

Profunda Brachia

Posterior Compartment

Anterior Compartment

Neurovascular Relationships

Arm

Axillary Artery

Radial Nerve Diverges

Ulnar Nerve Diverges

Brachial Artery + Median Nerve

Radial Nerve

Axillary Nerve

Anastomosis at elbow joint
Surgical Neck Fracture

Potential damage to the anterior and posterior circumflex arteries

Mid Shaft Fracture

Potential damage to the profunda artery & radial nerve
Upper Extremity

Arm

• Anterior Compartment
• Posterior Compartment

Cubital Fossa

Forearm

• Anterior Compartment
• Posterior Compartment

Cubital Fossa

 Borders:
• Line connecting medial & lateral epicondyles of humerus
• Medial: Pronator teres
• Lateral: Brachioradialis
Cubital Fossa: **BAN**

- **B**= Biceps tendon
- **A**= Brachial Artery
- **N**= Median Nerve

Clinical Considerations

- **Cephalic & Basilic Vein**
  *Drain dorsum of hand & used for venipuncture*

- **Brachial Artery**
  *Anomalous superficial ulnar or radial branch*
Name 18
Muscle Attachments

10 Minute Break