Beyond Grey’s: Anatomy & Physiology for Coders

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Disclaimer

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Objectives

• Review and understand anatomical position and directional terms of the body
• Review A & P and coding of select clinical cases in musculoskeletal system
• Review A & P and coding of clinical case in digestive system
• Review A & P of laparoscopic hysterectomy in regard to Coding Clinic, First Qtr. 2012, pgs. 3-4
Resources/Tools


• AMA (2011). *Advanced Anatomy and Physiology for ICD-10-CM/PCS*. Salt Lake City, Utah: Contexo Media

• OptumInsight. (2012). ICD-9-CM.

Resources/Tools

- www.3-dhumananatomy.com
- www.adam.com
- www.britannica.com
- www.daviddarling.info
- www.medicinenet.com
- www.nlm.nih.gov/medlineplus
- www.um.m.edu
- www.webmd.com
Resources/Tools

• There’s an app for that......
  – Human Anatomy! By SusaSoftX from iTunes App Store
Positional and Directional Terms - 1

• Anatomical position – that of human body standing erect with palms turned forward, used as the position of reference in designating the site or direction of structures of the body

• Terminology:
  – Anterior (ventral): front surface
  – Posterior (dorsal): back side, Ex: dorsal fin
Positional and Directional Terms -2

- **Deep**: Away from the surface
- **Superficial**: On the surface. E.g., superficial veins can be viewed through the skin
- **Proximal**: Near the point of attachment to the trunk or near the beginning of the structure.
- **Distal**: Far from the point of attachment to the trunk or far from beginning of structure
Positional and Directional Terms - 3

- **Superior**: Above another structure. Cephalic pertaining to head. Also supra.
- **Inferior**: Below another structure. Caudal also means tail, or away from head or below (infra)
- **Medial**: Pertaining to the middle or nearer the medial plane of the body
- **Lateral**: Pertaining to the side
- **Supine**: Lying on the back. *Supine is on the spine.*
- **Prone**: Lying on the stomach.
Positional and Directional Terms - 4

- **Palmar**: referring to palm of hand
- **Plantar**: relating to sole of foot
- **Abduction**: Away from midline of body
- **Adduction**: Toward midline of body
- **Circumduction**: Movement of extremity in circular direction
- **Ball and socket joint**: Multiaxial synovial joint in which sphere of head of one bone fits into rounded cavity of another joint. Ex: hip, shoulder
Planes of the Body

- Frontal (coronal): Vertical plane dividing the body into anterior and posterior positions.
- Sagittal (lateral): Lengthwise vertical plane dividing the body into right and left sides. The midsagittal plane divides the body into right and left halves.
- Transverse (cross-sectional or axial): Horizontal plane running across the body parallel to the ground. Ex: CT scan
Image of Planes of Body

Courtesy: medical-dictionary.thefreedictionary.com
Dr. Owen Hunt

Courtesy: ABC
Dr. Callie Torres

Courtesy: ABC
Case history #1

Dr. Owen Hunt, 42 y. o. male, c/o of pain and tingling in his right hand; it is worse at night. Symptoms relieved by rest and ice. Pt. is a trauma surgeon and pain worse after long surgeries and typing.
Carpal Tunnel Syndrome

• A complex of symptoms resulting from compression of the median nerve. Symptoms include pain, burning, and tingling paresthesias in fingers and hand.

• Compression of median nerve as it passes under flexor retinaculum.

• Pain or paresthesia felt in lateral 3 ½ digits.
Carpal Tunnel Syndrome

Median nerve is compressed at the wrist, resulting in numbness or pain

Courtesy: A.D.A.M., Inc.
Carpal Tunnel Syndrome

Palmar carpal ligament
Flexor retinaculum
Median nerve

Courtesy: A.D.A.M., Inc.
Carpal Tunnel Release

Medial nerve

Carpal ligament (cut)

Courtesy: A.D.A.M., Inc.
Code carpal tunnel release

• ICD-9-CM: 04.43

• ICD-10-PCS: 01N50ZZ (right)
Radius and Ulna

Courtesy: daviddarling.info
Interosseus Ligament

Courtesy: medical-dictionary.thefreedictionary.com
Bones of wrist and hand
Case history # 2

Dr. Owen Hunt, 42 y. o. male, trauma surgeon, is the pitcher for the Seattle Grace Hospital baseball team. He presents with progressive, chronic pain and weakness of his left shoulder joint. Results of MRI are indicative of a degenerative partial rotator cuff tear involving the supraspinatus tendon.
Rotator cuff

- Four muscles and several tendons that control rotation of the shoulder
  - Supraspinatus
  - Infraspinatus
  - Teres minor
  - Subscapularis

- Acronym - SITS
Muscles of the rotator cuff

Courtesy: jonespainrelief.com
Code Partial Tear of Rotator Cuff

- ICD-9-CM: 726.13 excludes complete (nontraumatic) rupture of rotator cuff (727.61)

- ICD-10-CM: M75.100 (left)
Musculoskeletal Terminology

• **Origin** – the more proximal, fixed end or attachment of a muscle
• **Insertion** – the place of attachment of muscle to the bone it moves
• **Tendon** – fibrous cord of connective tissue by which a **muscle** is attached to **bone**
• **Ligament** – band of tissue that connects **bone** to bone
Sprains vs. Strains

Sprain – a stretched or torn ligament

Ligament – band of tissue that connects bone to bone

Strain – a stretched or torn muscle or tendon

Tendon – fibrous cord of connective tissue by which a muscle is attached to bone
Dr. Mark Sloan

Courtesy: ABC
Dr. Derek Shepherd

Courtesy: ABC
Case history #3

Dr. Mark Sloan, 44 y.o. male, presents with excruciating pain in his right knee. Dr. Sloan is the quarterback of the Seattle Grace football team. During the championship game with Mercy West, he was tackled from the front by Dr. Derek Shepherd. He is unable to bear weight on right leg.
Knee normal anatomy

Femur
Patella
Posterior cruciate ligament
Anterior cruciate ligament
Meniscus
Meniscal ligament
Tibia

Courtesy: A.D.A.M., Inc.
Knee joint

• Distal end of femur (femoral condyles) and proximal end of tibia (tibial plateau). The femoral condyles usually glide smoothly on the tibial plateau.

• Hinge joint
Dr. Torres examined Dr. Sloan and tested for the anterior drawer sign. This was positive. An MRI revealed a torn anterior cruciate ligament and he was scheduled for surgery.
Torn ACL

Torn anterior cruciate ligament

Courtesy: A.D.A.M., Inc.
Anterior drawer sign

Courtesy: tabers.com
Tears of meniscus

Longitudinal (vertical) tear
May progress to

Radial tear
May progress to

Horizontal tear (probe in cleft)
May progress to

Bucket handle tear
Parrot beak tear
Flap tear

Courtesy: so.com.au
Code ACL tear

- ICD-9-CM: 844.2

- ICD-10-CM: S83.519A (right)
Dr. Miranda Bailey

Courtesy: ABC
Dr. Richard Webber

Courtesy: ABC
Case history #4

• Dr. Miranda Bailey, 39 y.o. female, is seen by Dr. Richard Webber, general surgeon. Pt. c/o pain in the RUQ, especially after eating a fatty meal. Pain associated with N/V. Dr. Webber orders U/S.

Anatomy of the Abdomen

Liver
Gallbladder
Duodenum (small intestine)
Pancreas (body continues behind stomach)
Spleen
Stomach
Kidney
Transverse colon
Small intestine
Ascending colon
Terminal ileum
Cecum
Appendix
Rectum
Anus

Courtesy: medicine.net.com
Gallbladder

• Pear-shaped
• Lies under liver
• Secretes bile, which helps digest fat
• Bile released through common bile duct (CBD) into duodenum
• Can live without
Gallbladder

Courtesy: umm.edu and A.D.A.M., Inc.
Cholelithiasis

• Pain typically comes and goes (biliary colic)
• Secondary inflammation of the gallbladder (cholecystitis) leads to constant pain, and is often trigger to seeking medical attention
Case history #4 (cont.)

• Dr. Webber performs a lap cholecystectomy on Dr. Bailey. Surgery without complications.
• One week later, Dr. Bailey notes pain has not really gone away; in fact, it seems to be getting worse.
• Dr. Webber performs an ERCP which removes a retained stone.
Laparoscopic Cholecystectomy

Courtesy: umm.edu and A.D.A.M., Inc.
ERCP

• **Endoscopic retrograde cholangiopancreatography (ERCP)**

• Endoscopic procedure used to identify the presence of stones, tumors, or narrowing in the biliary and pancreatic ducts

• After endoscope placed, a catheter is used to inject a contrast agent through the ducts
ERCP

Endoscope is inserted into the mouth then passed through the esophagus and stomach into the duodenum.
Retained cholelithiasis after cholecystectomy

• If gallstone(s) pass further down CBD, may obstruct biliary system, causing jaundice
• Gallstone(s) may obstruct pancreatic duct causing gallstone pancreatitis
Gallbladder

Courtesy: umm.edu and A.D.A.M., Inc.
Code retained cholelithiasis following cholecystectomy

- ICD-9-CM: 997.41
- ICD-10-CM: K91.86
Dr. Addison Montgomery Shepherd

Courtesy: ABC
Hysterectomy

A hysterectomy removes the uterus and may also remove the cervix (total) and the vagina (radical).

Partial

Total

Radical

Courtesy: A.D.A.M., Inc.
Laparoscopic Abdominal Hysterectomy and Laparoscopically Assisted Vaginal Hysterectomy

• Coding Clinic, First Quarter 2012, pages 3-4

• In assigning correct ICD-9 code, focus should be on surgical technique or approach used for detachment of those structures.

• Code assignment should not be based on location of where structures were physically removed from patient’s body
TLAH vs. LAVH

- Small abdominal incisions
- Uterus detached via laparoscopic technique
- Uterus removed thru vagina OR
- Uterus removed thru abdomen (morcellated)
- Small abdominal incisions
- Uterus partially detached from upper supporting structures
- Incision around cervix (in vagina) to detach cervix and uterus from remaining supporting structures
- Uterus and cervix removed via vagina
Questions?
Dr. Alex Karev thanks you.

Courtesy: ABC