Surgical Subspecialty Clerkship Objectives/Syllabus

Airway Adjuncts & Intubation

1. State three early and three late signs of hypoxemia.
2. State the indications, concentration/liter flow rate, advantages, and disadvantages for each of the following oxygen delivery devices:
   a. Nasal cannula
   b. Oxygen mask
   c. Venturi mask
   d. Non-rebreather mask
   e. Bag-valve-mask
3. State the indications for insertion of the oropharyngeal and nasopharyngeal airways and demonstrate appropriate insertion of each.
4. State the various methods, and their indications, for opening the airway.
5. Ventilate an adult manikin with a bag-valve-mask device by demonstrating:
   a. Correct head tilt-chin lift
   b. Effective mask seal
   c. Visible bilateral chest expansion
7. Assemble and check all equipment required for intubation.
8. Select proper size ET tube and oral airway for an adult patient.
10. Compare the difference between nasal and oral endotracheal intubation.
11. State the complications associated with endotracheal intubation.

Aortic Disease

1. Discuss the immediate medical therapy for an aortic dissection and indications for emergency versus elective surgery.
2. Differentiate between an aneurysm and a dissection.
3. Discuss the various surgical options for correction of an aortic aneurysm or a dissection.

Benign Prostatic Hypertrophy

1. Describe the signs and symptoms of benign prostatic hyperplasia (BPH).
2. Discuss the pathophysiology and differential diagnosis of BPH.
3. List the basic work-up required before institution of medical therapy.
4. List the indications for surgical therapy and the pros and cons of different surgical approaches.

Burn Surgery
1. Define first degree, second degree and third degree burns in relationship to skin anatomy.
2. Given a description of a patient’s burn injuries, calculate the percentage of body surface burned.
3. Briefly describe the body’s metabolic response to a burn injury.
4. Demonstrate a familiarity with the Parkland formula for fluid resuscitation by using it to calculate fluid requirements for a burn injury patient, given the total body surface area of the burn.
5. Discuss the various options available for management of the burn wound including topical antibiotics, biological dressings and operative debridement.
6. List the more common early and late complications of a burn injury.
7. Discuss the management of carbon monoxide poisoning.
8. Given a patient with severe burn injury, present a plan for evaluation of the patient for inhalation injury.
9. Discuss management of inhalation injuries.

Coronary Artery Disease

1. Know the indications for coronary artery bypass grafting.
2. Understand the surgical concepts and expected results from coronary artery bypass grafting.
3. Discuss the indications for and physiology behind intra-aortic balloon counterpulsation.

Foot and Ankle Disorders

1. Describe the diagnosis and treatment of ankle sprains.
2. Define the pathoanatomy, physical examination, and treatment of bunions.
3. Describe the pathoanatomy, clinical findings, and treatment of plantar fascitis.
4. Describe the pathogenesis and basic treatment principles of diabetic foot ulcers.

Hand Exam

1. Describe the sensory and motor examination of the hand and its relation to injuries of the three major nerves.
2. Describe the vascular examination of the hand.
3. Describe the symptoms and physical findings of patients with carpal tunnel syndrome.
4. Outline the principles of treatment of patients with carpal tunnel syndrome.
5. Describe the functional deficits resulting from division of the superficial and deep tendons of the fingers and the long flexor tendon of the thumb and the diagnostic techniques for demonstration of these deficits.
6. Describe the clinical presentations and significance of scaphoid fractures.
7. Describe the clinical features and indications for treatment of common hand infections (e.g. tenosynovitis, paronychia, felon).
Hematuria, Bladder & Kidney Cancer/ Evaluation of

1. Know the basic evaluation of hematuria in the adult male and female.
2. Describe the different natural histories of superficial and invasive bladder cancer.
4. Describe the appropriate radiological evaluation of a patient with an irregular renal outline on IVP.
5. List the prognostic factors for survival in renal cell carcinoma.
6. List the eight possible presenting signs and symptoms of renal cell carcinoma and why it is called the “the internist tumor.”

Lung Cancer

1. Briefly describe the epidemiology of lung cancer.
2. List presentation symptoms of lung cancer.
3. List the pathologic features of the various lung carcinomas.
4. Describe the work up of a patient prior to surgery.

Nephrolithiasis, Surgical Management of

1. Know the most common presenting signs and symptoms of kidney stones and the initial evaluation steps to make the diagnosis.
2. Describe the treatment options for a patient with urinary tract calculi.
3. Discuss the pathophysiology of calcium and non-calcium stones.

Neurosurgery Emergencies

1. Define epidural, subdural and intracranial hematomas and discuss their etiologies, characteristics and management.
2. Discuss the potential consequences of failure to decompress the cauda equine with cauda equine syndrome.
3. Discuss clinical signs/symptoms and workup of cerebral aneurysms.

Ocular Emergencies

1. Discuss the causes, signs/symptoms, complications and treatment of the following:
   
   Chemical burns
   Ruptured globe
   Hyphema
   Orbital trauma
   Lid lacerations
   Corneal abrasion and foreign bodies
   Red eye
Orthopedic Trauma

1. Define fractures (open and closed), subluxations and dislocations.
2. Describe the clinical and radiological features of fractures and dislocations.
3. Outline management priorities.
4. List associated complications: vascular, neurological and musculoskeletal.
5. Discuss diagnosis and management of compartment syndrome.

Otolaryngology Overview

1. Discuss the viral and bacterial causes of pharyngitis and tonsillitis.
2. Recognize the typical symptoms of viral and bacterial pharyngitis.
3. Describe the diagnosis and treatment of sinusitis.
4. List the common causes of a mass in the neck or face.
5. Describe the initial diagnostic approach to the patient with maxillofacial trauma.
7. List the risk factors for head and neck cancer.
8. Discuss the differential diagnosis, work-up and treatment of common head and neck infections.

Pediatric Surgery Overview/Dr. Muenchow
Currently, no written objectives.

Pleural Space

1. Briefly describe the physiology of the pleural space.
2. When are chest tubes indicated and how are they managed?
3. Describe empyema and its’ management.

Plastic Surgery
Currently, no written objectives.

Prostate Cancer

1. Review the epidemiology and risk factors for prostate cancer.
2. Discuss the pros and cons of screening.
3. Discuss the basics of prostate cancer treatment.

Spine
1. List and discuss common causes of cervical pain and low back pain.
2. Describe the symptoms and signs and outline the diagnostic workup for a patient with cervical and/or lumbar disc herniation.
3. Describe discogenic disease and spinal stenosis of the lumbar spine.
4. List which reflexes, muscles, and dermatomes are associated with each of the nerve roots.

Sports Medicine

1. Describe the biomechanics of ligamentous injury and specific tests to assess each ligament (specifically ACL, PCL, MCL, LCC).
2. Describe injury patterns with the meniscus and its healing ability.
3. Describe the injury response to articular cartilage damage, x-ray findings and its nonsurgical and surgical treatment.
4. List the differential diagnosis of shoulder bursitis.
5. Demonstrate recognition of shoulder instability, rotator cuff tear, impingement syndrome and bursitis.
6. Describe and recognize lateral epicondylitis (tennis elbow) and medial epicondylitis (golfer’s elbow).

Urinary Incontinence

1. Describe the basic neurophysiology of bladder storage and emptying.
2. Describe the basic terminology and definitions of voiding dysfunction.
3. Classify voiding dysfunction into failure to store and failure to empty.
4. Discuss the basic work-up for urinary incontinence and associated lower urinary tract voiding disorders, as well as, the specific indications for more advanced tests such as videourodynamics.
5. Describe the various treatment options for urinary incontinence, including surgery and pharmacotherapy.

Valvular Heart Disease

1. Discuss the pathophysiology of stenosis or regurgitation for aortic and mitral valve disease.
2. Differentiate risks/benefits of choosing a mechanical versus a biologic valve prosthesis.
3. List the indications for surgical replacement/repair of a diseased valve.
4. Discuss the risk/benefit ratio of chronic oral anticoagulation.
5. Follow a logical treatment algorithm for a patient with acute versus subacute bacterial endocarditis.