

GENERAL SURGERY

PGY-2 Resident

Knowledge Objectives:

1. Anatomy and physiology of respiratory and cardiovascular system including:
 - Shunt
 - Ventilation/Perfusion abnormalities
 - Pulmonary embolism
 - PIOPED study

2. Identify the anatomical structures encountered in:
 - Tracheostomy
 - Mastectomy
 - Axillary dissection
 - Hernia repair
 - Cholecystectomy
 - Appendectomy

3. Embryology, anatomy, and physiology of pancreas

4. Understand the metabolic response to trauma

5. In depth understanding of the role of the following hormones in fluid and electrolyte homeostasis:
 - ADH
 - Renin-angiotensin system
 - Steroids
 - Aldosterone
 - Sex hormones
 - ACTH including stimulation test for diagnosis of adrenal insufficiency

6. Discuss the changes associated with aging with respect to:
 - Total body water
 - Water and sodium homeostasis
 - Renal and hepatic blood flow and function
 - Cardiac function

7. Nutritional assessment including daily caloric requirement

8. Composition of parenteral nutrition with in depth understanding of:
 - Carbohydrate metabolism including Cori cycle and lactate shuttling mechanisms
 - Metabolism of fats and in depth understanding of the role of short, medium and long chain triglycerides in health and disease
 - Role of ω -3 and ω -6 TCG in the inflammatory response
 - Metabolism of proteins and role of organ specific amino-acids
9. Principles of oncology
 - Breast
 - Soft tissue and retroperitoneal sarcoma
 - Melanoma
 - Gastrointestinal malignancies
10. Principles of hemostasis and coagulopathy
11. Physiology and consequences of portal hypertension
12. Knowledge of all vasoactives and antiarrhythmic drugs
13. Knowledge of homeostasis of hydrogen ion including:
 - The Henderson-Hasselbach equation
 - Hydrogen production and disposal
 - Buffering systems
14. Knowledge of anatomy of extra and intracerebral circulation and neurophysiology Including:
 - Autoregulation of cerebral blood flow
 - Determinants of cerebral perfusion pressure
 - Production and regulation of cerebrospinal fluid
 - Regulation of ICP
 - Determinants and regulation of spinal cord perfusion pressure
15. Knowledge of subarachnoid hemorrhage, subdural and epidural hematoma
16. Knowledge of acute conditions of the abdomen including:
 - Appendicitis
 - Diverticulitis
 - Cholecystitis
 - Pancreatitis
 - Inflammatory bowel disease
 - Perforated viscus (colon, duodenum, stomach)
 - Acute mesenteric ischemia
17. Knowledge of anatomy, physiology, and surgical pathology of thyroid and parathyroid glands

18. Knowledge of advanced statistics including:

- ANOVA
- Bonferroni
- Multiple logistic regression analysis
- Spearman's correlation
- Pearson linear correlation
- Sample size determination
- Cox proportional hazard model

Skills Objectives:

1. Identify conditions requiring ventilatory support
2. Select appropriate mode of ventilatory support
3. Describe triggering mechanisms, specific function of each dial on the following ventilators:
 - Bear 8400
 - Puritan 7200
 - Puritan 840™
4. Select appropriate vasopressor and inotropic support for the critically ill patient.
5. Treat all cardiac arrhythmias.
6. Assign risk for perioperative cardiac complications using Goldman, Detsky, Eagle, Vanzetto's and other prognostic models.
7. Perform under supervision and first assist on:
 - Laparoscopic cholecystectomy
 - Exploratory laparotomy
 - Lysis of adhesions and small bowel resection
 - Mastectomy
 - Angioaccess
 - Thyroidectomy and parathyroidectomy
8. Perform:
 - Insertion hemodialysis catheters
 - Venous and arterial cutdowns
9. Write a comprehensive surgical consult
10. Be able to read the medical literature critically