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ROTATION: CARDIAC SURGERY

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CHIEF OF CARDIAC SURGERY: E. Carmack Holmes, M.D.

SITES: UCLA Medical Center
VA Greater Los Angeles Healthcare System

GOALS:

To provide trainees an opportunity to participate in the perioperative and operative aspects of cardiac surgery.

LEVEL OF TRAINEE: R1

ASSESSMENT:

Monitoring of the accomplishment of the stated objectives will be performed using the following methods:

1. Global Rating: end of rotation evaluation of resident performance to assess the resident’s demonstration of Core Competencies with respect to the stated objectives by faculty, other team resident members, students, and nursing staff.
2. Case Logs: auditing of operative cases pertinent to the specialty in the Surgical Operative Log.
3. Written Examination: performance on the annual ABSITE examination, Cardiovascular and Respiratory systems section.
4. Patient Survey: performance will be assessed by patient surveys administered though the rotation.

DESCRIPTION OF THE ROTATION:

The Cardiac Surgery rotation of 1 month in R1, or R2 years.

1. All rotating will be part of the Cardiac Surgery team and responsible for the care of the cardiac surgery patients.
2. The surgery residents will provide in-patient care including routine admissions and critical care of patients.
3. Residents will further participate in surgical operations needed on these patients under direct supervision by the surgical faculty.
5. The rotating residents will participate in all Department of Surgery educational conferences and didactic presentations.
6. Residents are expected to actively participate and present at the weekly Cardiac Surgery Conference.

R1 RESIDENT

COMPETENCY BASED LEARNING OBJECTIVES

Patient Care:

1. Perform a complete and thorough history and physical examination, with emphasis in elements unique to cardiac surgery patients.
2. Initiate the laboratory evaluation and any other initial diagnostic studies with an understanding of the tests to be ordered.
3. Make informed decisions about diagnostic and therapeutic interventions on cardiac surgery patients with the guidance of senior residents and faculty.
4. Be proficient in the preoperative preparation of the patients for cardiac surgery and routine postoperative care.
5. Understand basic pathophysiology of cardiac disease and begin to master the skills necessary to care for the ICU patient under the guidance of the senior residents and faculty members.
6. Understand basic pathophysiology of cardiac disease, principles of resuscitation, preoperative and postoperative care of cardiac surgery patients under the guidance of the senior residents and attendings.
7. Understand the basic indications for common radiological and interventional studies used in the care of cardiac surgery patients such as plain chest, CT scans, cardiac angiography and non-invasive cardiac function tests.
8. Demonstrate the ability to effectively set priorities and coordinate the care of cardiac patients.

Medical Knowledge:

Understand, describe and demonstrate basic knowledge in the following:

1. Demonstration of a working knowledge of the anatomy of the heart and great vessels including the cardiac chambers, cardiac valves, coronary
arteries, intrinsic neural conduction system, extrinsic neural conduction system (sympathetic and parasympathetic) and the great vessels.

2. Demonstrate a working knowledge of cardiac physiology including rhythm control, cardiac output, myocardial work, myocardial metabolism including oxygen consumption, normal intra-cardiac pressures, and normal oxygen saturation in each chamber.

3. Demonstrate a working knowledge of the interrelationship between cardiac output, peripheral blood flow, and autoregulation.

4. Be able to describe the implications of features of the medical history or examination on the perioperative care of cardiac surgery patients. These include:
   a. risk factors for cardiovascular disease (age, smoking, hypertension, diabetes, hyperlipidemia, family history of cardiac disease)
   b. stable angina, unstable angina,
   c. palpitations or arrythmias,
   d. heart murmurs, peripheral edema, hepatomegaly
   e. carotid bruises, history or signs of neurologic dysfunction
   f. peripheral vascular disease or aneurysms
   g. azotemia, or renal failure
   h. hepatic dysfunction
   i. corticosteroid therapy, immunosuppression
   j. dental problems
   k. vascular grafts, prosthetic valves
   l. previous operations

5. Demonstrate a fundamental understanding of the role of each diagnostic modality in the characterization of cardiovascular disease.
   a. EKG
   b. Echocardiography
   c. Cardiac catheterization and angiography
   d. Duplex scan
   e. CT scan, MRI
   f. MUGA, stress and persantine thallium scans

6. Summarize the diagnostic evaluation for each of the following surgical procedures:
   a. coronary artery bypass grafting
   b. adult valvular repair or replacement
   c. resection of ventricular aneurysms
   d. resection of thoracic aneurysms
   e. penetrating cardiac or great vessel injury

7. Be able to discuss the indications, contraindications, risks and possible complications and potential outcomes associated with cardiac operations and procedures including:
   a. coronary artery bypass grafting
   b. valve replacement or repair
   c. aortic arch grafting
   d. pacemaker or defibrillator insertion
e. percutaneous coronary angioplasty
f. cardiac transplantation

8. Be capable of explaining the techniques and potential complications for mechanical and pharmacologic support of the circulation including:
   a. inotrope support (dopamine, dobutamine, epinephrine, norepinephrine, amrinone, isoproterenol)
   b. nitroprusside, nitroglycerin, neosynephrine
   c. intra-aortic balloon pump
d. ventricular assist devices
e. pacemakers (including programming)

9. Be able to describe the likely presentation and initial management of the following potential complications after cardiac surgery:
   a. bleeding
   b. ventricular and atrial arrhythmias
   c. low cardiac output
d. hypotension
e. postoperative hypertension
   f. cardiac tamponade
g. tension pneumothorax
   h. stroke
   i. sternal wound infection

**Practice Based Learning:**

1. Develop a personal program of self-study and professional growth with guidance from the teaching staff and senior residents. An understanding of the etiology, pathogenesis, pathophysiology, diagnosis and management of cardiac surgery disorders will allow for sound surgical judgment, which relies on knowledge, rational thinking and the surgical literature.
2. Utilize current literature resources to obtain up-to-date information in the cardiac ill patients and practice evidence-based medicine.
3. Participate in teaching and organization of the educational weekly cardiac surgery conference.
4. Participate in activities of the Department of Surgery (including all teaching conferences) and assume responsibility for teaching and supervision of subordinate surgical house staff, and medical students.
5. Participate in the Department Morbidity & Mortality conference and utilize information to further improve patient care.
6. Participate in daily teaching rounds and be able to present patients in an organized and complete fashion
**Professionalism:**

1. Practice compassionate patient care maintaining the highest moral and ethical values with a professional attitude.
2. Demonstrate understanding of the needs and feelings of others, including the patient's family members, allied health care personnel (nurses, clerical staff, etc.), fellow residents, and medical students.
3. Communicate and collaborate effectively in a team of health care providers.
4. Demonstrate respect, compassion and integrity in the care of cardiac surgery patients on a daily basis.
5. Demonstrate mature and educated approach to Ethical issues commonly encountered in a cardiac surgery setting.
6. Show sensitivity to patients culture, age, gender and disabilities
7. Recognize and appropriately handle sensitive cases of abuse
8. Be self-aware and have knowledge of professional limits by practicing ongoing medical education and self-improvement.
9. Be accountable to profession in their actions and decisions

**Interpersonal Relationships And Communication:**

1. Create and sustain a therapeutic and ethically sound relationship with patients and patient families.
2. Work effectively with other members of the medical team including allied health care personnel (nurses, clerical staff, etc.), fellow residents, and medical students.
3. Maintain professional interactions with other health care providers and hospital staff.

**Systems Based Practice:**

1. Understand how the health care organization affects surgical practice of cardiac surgery.
2. Demonstrate cost effective health care.
3. Be able to coordinate multi-specialty and multidisciplinary trauma care practice including discharge planning, social service, rehabilitation, and long term care.
4. Follow established practices, procedures, and policies of the Department of Surgery and integrated and affiliated hospitals.
5. Maintain complete of medical records operative notes staff sheets and notes, patient database cards and other patient care related documentation in a timely, accurate and succinct manner.

**REFERENCES:**

**TYPICAL WEEK:**