Operative/Perioperative Care

Course Goals

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1. Develop the knowledge, attitude, and skills appropriate to care for adults who present with symptoms or problems commonly seen in general surgery.

2. Develop the knowledge and clinical skills necessary to assess and manage surgical wounds.

3. Develop the knowledge and skills to provide sterile technique and appropriately use personal protective equipment.

4. Develop the knowledge and skills necessary to evaluate a patient with a chief complaint of abdominal pain.

5. Identify and interpret common diagnostic imaging tests for peri-operative patients presenting with common surgical complaints.

6. Formulate clinical questions and retrieve evidence to advance knowledge base.

7. Present a concise and well-focused surgical patient consultation.

8. Recognize a patient requiring urgent or emergent surgical care.

9. Develop an awareness for the potential post-operative complications of surgical therapy.

10. Develop a longitudinal understanding of patient disease complexes that must be managed for safe surgical and anesthetic care including ASA classification.

11. Develop clinical skills associated with anesthesia.

12. Develop the knowledge and skills necessary to practice an evidence-based approach to medical care.

13. Develop skills and knowledge used in the operating room to keep patients safe and comfortable during surgery (including - ventilation strategies, ASA monitors, induction agents, maintenance agents, emergence criteria, and neuromuscular blockade/reversal).

14. Develop the knowledge, attitude and skills appropriate to care for adults who present with symptoms or problems commonly seen in the pre-operative setting.

15. Develop skills and knowledge used in the operating room and PACU to make the recovery period after surgery safer and more comfortable for the patient.

16. Develop skills and knowledge used in the pre-operative period to make the operative setting safer for patients.

17. Develop an appreciation of the importance of team based care in the operating room.
Operative/Perioperative Care
Clinical Learning Objectives

Clinical

Interprofessional Collaboration
1. Describe the individual roles of the team-based anesthesia model.
2. Describe the relationship required between anesthesia and surgery (physician and nursing)
3. Develop an appreciation of the importance of team-based care during a trauma resuscitation or operation.

Medical Knowledge for Practice
1. Describe pain assessment strategies and adjunct modalities for pain management.
2. Describe intraoperative ventilation strategies - volume control vs. pressure control vs. spontaneous ventilation.
3. Identify induction agents in common use (etomidate, ketamine, propofol, midazolam) including advantages/disadvantages of each.
4. Describe fluid management strategies in the surgical patient (colloid and crystalloid).
5. Develop knowledge of commonly used neuromuscular blockade agents and the reversal agents.
6. Demonstrate knowledge of standard ASA monitors and ideal placement of all monitors.
7. Describe common conditions that cause abdominal pain.

Patient Care
1. Describe fasting guidelines and it's importance in the prevention of aspiration.
2. Describe ventilation management post-operatively.
3. Describe the procedures that must be undertaken for a patient to go to the OR (site marking, consent, recent H/P).
4. Identify the indications for and interpret common imaging tests for investigating surgical conditions (ultrasound, CT scanning, plain x-rays).
5. Provide a prioritized differential diagnosis and select a working diagnosis following an encounter with a patient presenting with a surgical complaint.
6. Describe the important findings of an abdominal ultrasound of the gallbladder.
7. Prioritize the components of the patient's history in regards to various possible surgical conditions.
8. Recognize the most pertinent aspects of the physical examination for a variety of suspected surgical conditions.
9. Be able to identify risk factors for shock and hypotension.
10. Cite examples of a variety of potentially serious or life-threatening surgical conditions through clinical exposure as well as from organ-centered didactic lectures.
11. Participate in daily perioperative patient care and management rounds.
12. Describe the factors involved in the ASA grading of patients preoperatively.
13. Describe the role of the difficult airway algorithm and its application to difficult airway cases.
14. Perform an initial airway exam.
15. Describe necessary tools for a standard intubation.
16. Identify indications for and interpret common diagnostic tests used for investigating abdominal pain.
17. Perform a focused physical examination of patients with abdominal pain.
18. Construct a prioritized differential diagnosis and select a working diagnosis following an encounter with a patient presenting with abdominal pain.

Practice-Based Learning and Improvement

1. Discuss the resources available to perform a literature search to fill a knowledge gap.

Professionalism

1. Utilize a checklist to ensure exposure to key surgical conditions.

Systems-Based Practice

1. Describe the importance of the weekly surgical M&M conference.
Operative/Perioperative Care

Session Learning Objectives

Abdominal Aortic Aneurysms (AAA) - Orientation
1. Discuss details of abdominal aortic aneurysms (AAA).
2. Discuss the surgical management of abdominal aortic aneurysms (AAA).

Abdominal Imaging - Orientation
1. Compare and contrast the different types of imaging modalities.
2. Identify abdominal anatomy by means of computed tomography (CT) and ultrasound (US).
3. Discuss the appropriateness criteria for making appropriate imaging or treatment decision for a specific clinical condition.

Acid Base Disorders - Orientation
1. Review common acid-base disorders.
2. Recognize acid-base disorders based on blood gas results.
3. Discuss cases on acid-base disorders.

Acute Pain Management: Introduction to Regional Anesthesia - Orientation
1. Differentiate between neuraxial and peripheral nerve blocks.
2. Name some of the benefits and risks associated with regional anesthesia.
3. Describe common regional anesthesia techniques.
4. Describe the contraindications, advantages, and disadvantages to neuraxial blockade.

Airway Management - Orientation
1. Identify risk factors for respiratory failure.
2. Demonstrate and describe the role of the airway evaluation including predictors of difficult mask ventilation.
3. Describe necessary tools for a standard intubation.
4. Describe fasting guidelines and its importance in the prevention of aspiration.

FAST Exam - Orientation
1. Discuss the clinical indication for FAST exam in surgery.
2. Describe the FAST exam.
3. Perform the FAST exam.
Hernias - Orientation
1. Define what a hernia is and what troubles can arise from a hernia.
2. Recognize patient related factors that mitigate hernia formation, enlargement, or recurrence.
3. Discuss basic approaches to hernia repair.

Informed Consent Written Assignment
1. Describe the purpose of the informed consent process.
2. Describe eight elements necessary by law for a valid informed consent process.
3. Identify ethical values that support the practice of informed consent.
4. Describe the evidence, procedure and professional standard of care that Colorado Courts apply to resolve informed consent cases.
5. Describe the process for proxy decision makers for incapacitated adults in Colorado.
6. Describe informed consent for minors.
7. Identify ethical issues raised by DNR orders in the OR.

Introduction to Anesthesiology - Orientation
1. Describe the factors involved in the ASA grading of patients preoperatively.
2. Demonstrate and describe the role of the airway evaluation including predictors of the difficult intubation.
3. Describe the contraindications to a laryngeal mask airway (LMA).
4. Discuss how different surgical pathology relates to anesthetic management and planning.
5. Describe the relationship required between anesthesia and surgery (physician and nursing).
6. Discuss anesthesiology from an historical perspective.
7. Describe current drugs and techniques associated with anesthesiology.
8. Identify typical maintenance agents including inhaled and IV agents.
9. Perform cardiopulmonary history and evaluation and describe how it relates to the patients' perioperative care.

Introduction to Urology - Orientation
1. Discuss the urology scope of practice.
2. Describe the different surgical approaches commonly used by urologists.

Lecture Acute Abdomen
1. Discuss demographics and pathophysiology of common acute abdomen presentations.
2. Review clinical presentation and evaluation of patient with acute abdomen.
3. Recognize key steps in appendectomy operation.
Lecture Breast Disease
1. Develop an appreciation of the importance of the multidisciplinary team approach utilized in a contemporary breast clinic.
2. Demonstrate familiarity of a variety of breast disease conditions through didactic lecture.
3. Recognize pertinent anatomy regarding breast disease.
4. Recognize the common presentation and evaluation of breast cancer.
5. State the incidence of surgical management of breast cancer.
7. Describe the history, exam and work-up of breast disease.
8. Review indications for screening and diagnostic breast imaging.

Lecture Cardiothoracic Surgery
1. Describe common surgical conditions affecting the heart and lungs.
2. Discuss surgical management of heart and lung pathology.

Lecture Endocrine Surgery
1. Demonstrate familiarity of endocrine related conditions through didactic lecture.
2. Demonstrate familiarity with surgical management of thyroid nodules.
3. Demonstrate familiarity with surgical management of thyroid cancer.
4. Demonstrate familiarity with management of primary hyperparathyroidism (HPT).

Lecture Endpoints of Resuscitation
1. Recognize the basics of shock and goal-directed resuscitation.
2. Describe the components of oxygen delivery.
3. Define shock and its common causes.
4. Discuss basic principles of resuscitation.
5. Apply the basic principles of resuscitation using a standard algorithm.

Lecture Fluids and Electrolytes
1. Describe differences among common types of IV fluids.
2. Review strategies in choosing different resuscitative vs. maintenance fluids.
3. Describe how to calculate maintenance IV fluids.
4. Discuss the perils of excessive IV fluid administration.
5. Review common electrolyte imbalances.
Lecture Pancreatic Cancer
1. Discuss the incidence and common presentations of pancreatic cancer.
2. Recognize the role of surgery in the treatment of pancreatic cancer.
3. Demonstrate familiarity with anatomy pertinent to pancreatic cancer.

Lecture The Colon
1. Review common conditions affecting the colon.
2. Review pertinent anatomy regarding colon disease.
3. Discuss surgical management of colon pathology.

Lecture Transplant Surgery
1. Discuss the factors associated with limited organ availability for transplant.
2. Demonstrate familiarity with pertinent anatomy regarding liver and kidney transplant.

Local Anesthetics - Orientation
1. Discuss local anesthetic pharmacology.
2. Discuss applications of local anesthetics to patient care.
3. Examine adverse events related to local anesthetics administration.

Long Case Report
1. Describe the principles of anesthetic management and operative management for a patient seen during this rotation.
2. Utilize evidence based medicine to support or critique management of a patient seen during this rotation.

Otolaryngology - Orientation
1. Discuss the Otolaryngology scope of practice.
2. Describe the different surgical approaches commonly used by otolaryngologists.

Pharmacology of Pain Control - Orientation
1. Compare and contrast the pharmacologic aspects of the different multimodal analgesic agents.
2. Compare and contrast the principles of acute and chronic pain management.
3. Compare and contrast the general characteristics of the relevant analgesic drug classes (mechanism of action, pharmacokinetic parameters, adverse drug reactions).
4. Discuss the distinguishing characteristics of the individual pharmaceutical agents that are frequently used at UCH.

Radiology/ Knot Tying/ Suturing Workshops - Orientation
1. Imitate and practice simple suturing.
2. Imitate and practice instrument and hand knot tying.
Scrubbing/ Gowning/ Gloving - Orientation
1. Develop the knowledge and skills to provide sterile technique and appropriately use personal protective equipment.
2. Apply scrubbing, gowning, and gloving skills within the operating room environment where sterile technique is practiced.

Student Presentation
1. Create and present a Power Point-based talk on a surgery or anesthesia topic to include a pertinent literature review.

Wound Care & Wound Closure - Orientation
1. Explain and demonstrate basic wound assessment and management.