Department of Family Medicine
University of Texas Medical Branch at Galveston
Family Medicine Residency Program

Care of the Surgical Patient

INTRODUCTION

Residency training in Family Medicine at UTMB includes instruction in the diagnosis and management of surgical disorders, including emergencies, and the appropriate and timely referral of them for specialized care.

Residents learn how to recognize conditions that are preferably managed on an elective basis, and to appreciate the varieties of surgical treatments and potential risks associated with them in order to be able to give proper advice, explanation, and emotional supports to patients and their families.

GOALS

1. To gain experience in the evaluation and treatment of patients with clinical problems either in Ambulatory Surgery or in a Hospital setting. To develop clinical knowledge, judgement and maturity in general surgery. (Ambulatory Surgery, or "Outpatient Surgery" or " Same Day Surgery" refers to procedures which do not require a hospital admission.)
2. Gain experience in pre-op, operative, and post-operative care for patients.
3. To enhance ability to communicate effectively with surgeons participating in the care of mutual patients, to be able to serve as first Assistant for operation..

OBJECTIVES

At the completion of the rotations in ambulatory surgery, residents will be able to:

1. Perform initial and subsequent patient assessments, write appropriate Same Day Surgery (SDS) outpatient pre-op and subsequent post-op orders, and develop management and diagnostic plans for patients with common general surgery problems.
2. Demonstrate proficiency in examination skill, common diagnostic and technical procedures, (e.g. cost effective diagnostic modalities) and ability in assisting with operations

CURRICULUM

Two blocks of general surgery are included in the Family Medicine residency curriculum.

The blocks of surgery occurs under the supervision of Dr. Beverly Lewis, a Private surgeon practicing in Galveston County.

In the Surgery Rotation, the resident will have the opportunity to accompany and participate with the Attending Surgeon in all aspects of ambulatory and operative surgical care. The resident participates as first assistant in scheduled surgeries, in evaluation of patients in the surgeon's clinic and accompanies on rounds in the hospitals (consultation, post-op care). Case based teaching by the Attending Surgeon and hands on experience will be the format, with independent reading/study expected from the part of the resident. The resident is also introduced to the business management aspect of private surgical practices with emphasis on patient satisfaction, evaluation and management documentation, CPT and ICD-9 coding, risk management, Communication Skills. The resident will also be exposed to the trends that are shaping Surgical Practices and Surgical Education.

Specific Learning Topics

1. Pre-operative care:

- Diagnostic workup : to determine the cause/extent of the present illness
- Preoperative Evaluation, including :
  - General Health Assessment, H&PE,

- Assessment of operative risks such as Nutrition Status, immune competence, risks for increased infections, possibility of delayed wound healing, drug effects (e.g. drug allergy, drug interaction/toxicity),
- Special age groups (Pediatric, Geriatric), the obese patient

- Preoperative Preparation which encompasses:
  - information to the patient (description of procedures, risks and benefits) obtaining informed consent
  - Writing preoperative orders (diet, enema, blood transfusion, NG tube, venous access, IV fluid

2. Post-operative care:

Immediate post-op period:

- Vital signs
- Central Venous Pressure if indicated
- Respiratory care (Ventilation/ Oxygen supplement)
- Position in bed & mobilization
- Renal and bladder function
- Fluid and electrolytes
- Drainage tubes
- Medications
- Special lab work (e.g. H/H, ABG, X-rays)

Intermediate postoperative period

- Wound care
- Management of drainage,
- Pulmonary care with avoidance of atelectasis, observation for pulmonary edema
- Detection and management of respiratory failure
- Fluid &Electrolytes
- GI tract problems: paralytic ileus, NG tubes for selective operations
- Management of postoperative pain

3. Post-op complications:

- Related to the wound, such as hematoma , seroma, wound dehiscence
- Respiratory failure, including atelectasis, pulmonary aspiration, pneumonia, postoperative pleural effusion & pneumothorax
- Cardiac complication, such as dysrhythmia, postoperative Myocardial Infarction, postoperative heart failure
- Peritoneal complication,such as hemoperitoneum, problems with drains
- Postoperative parotitis
- Abnormal GI motility : Ileus, Gastric distention, SBO, fecal impaction
- Postoperative Pancreatitis, Hepatic dysfunction, cholecystitis
- Urinary complication: Urine retention, UTI
- Cerebrovascular accidents, Convulsion
- Postoperative psychosis, delirium tremens
- Fat embolism, Air embolism
- Thromboembolism
- Fever.

4. Fluid and electrolytes. Nutrition of Surgical patients

- Normal fluid distribution, recognition & treatment of volume/electrolyte depletion, of volume overload
- Disturbance and correction of specific electrolyte disorders regarding Na+, K+, Ca++, Mg++, Phosphates, Acid base disturbance
- Nutrition needs : Calories, Protein, Vitamins, Trace elements, Essential Fatty Acids

5. Principles of Aseptic Techniques

- Different ways of sterilization of instruments

  - Steam under Pressure (autoclave)
  - Dry heat
  - Gas sterilization with Ethylene Oxide
  - Boiling and Soaking in Antiseptics

- Skin antiseptics
  - Scrubbing routine for operators
  - Preparation of operative field.

6. Wound Healing, wound closures, different sutures/techniques

- Process of wound healing: response to injury, formation of granulation tissue with neovasculature, epithelization, contraction, remodeling of wound
- Factors influencing healing: nutrition, vascular perfusion, anemia, diabetes
- Principles of wound closure

7. Breast

- Carcinoma:
  - clinical findings
  - staging
  - Mammography
  - Imaging for metastasis (CXR, CT scans and bone scans when indicated)
  - Biopsy: FNA, core biopsy, open biopsy
  - Histopathologic types/presence of hormone receptors
  - Treatment option: lumpectomy or modified radical mastectomy with Radiation
  - Adjuvant therapy: Combination chemotherapy vs Tamoxifen
- Fibroadenoma
  - Nipple discharge:workup, differential diagnosis
  - Breast abscess, puerperal mastitis

8. Esophagus

- Achalasia
- Esophageal spasm, esophageal diverticula
- Hiatal hernia/GERD :Symptoms and sign, imaging studies, EGD, pH monitoring, Medical treatment vs. Fundal plication for sliding esophagitis
- Barrett's esophagus
- Rupture of esophagus, foreign body, tumor
- Esophageal bands, webs, rings

9. Stomach

- PUD: Gastric Ulcer, Duodenal Ulcer; Medical treatment, H. Pylori testing and eradication; Surgical treatment for PUD including Vagotomy, alone or in combination with antrectomy , Subtotal Antrectomy. Complications of PUD surgery such as Gastric distention, Dumping syndrome, Recurrence of Ulcer, Anemia, Postvagotomy diarrhea, Chronic Gastroparesis.
- Zollinger-Ellison syndrome.
- Upper GI hemorrhage
- Perforation of Peptic Ulcers
- Gastritis, Stress induced Gastritis, Chronic Gastritis
- Gastriccarcinoma/lymphoma/ leiomyoma/leiomyosarcoma
- EGD

10. The Acute Abdomen

- Important points when taking History: location, mode of onset and progression, Character of the pain; Association of other symptoms such as vomiting, constipa-tion, diarrhea or other specific symptoms (jaundice, hematochezia or hemateme-sis, hematuria) – other relevant history of menses, medication, travel, family history
- Physical examination which includes general observation, review of vital signs/systemic signs and the <u>examination of the acute abdomen</u> :Inspection, auscultation, coughing to elicit pain,

percussion, palpation, examination of Inguinal and femoral rings, and of male genitalia, rectal exam, pelvic exam

- Lab work studies/Radiologic studies
- Differential diagnosis of acute abdomen : Acute cholecystitis, acute appendicitis, bowel obstruction, cancer, acute vascular conditions, salpingitis, ovarian torsion; and medical conditions causing abdominal pain (e.g. referred pain, inflammation/ infection, toxin and drugs, hematologic disorders, endocrine and metabolic disorders)

11. Appendicitis:

- Symptoms and signs, laboratory findings, Imaging studies such as Ultrasound, CT scan, in particular Rapid CT scan
- Complications of Appendicitis such as Perforation, Peritonitis, Appendiceal Abscess, Pylephlebitis
- Peritonitis
- Bowel obstruction
- Volvulus
- Incarcerated hernia

12. Colon

- Obstruction
- Colon Cancer: Symptoms and signs, Physical examination, Laboratory study (e.g. CEA), Imaging studies, Proctosigmoidoscopy, colonoscopy
- Polyps of colon and rectum
- Volvulus, sigmoid/cecal
- Diverticular disease : diagnosis , treatment, complication
- Acute lower GI hemorrhage: resuscitation with IV fluid/blood transfusion, followed by EGD/colonoscopy

13. Different Types of Hernias

- Inguinal direct vs. indirect hernias: diagnosis and surgical repair
- Femoral hernia
- Umbilical hernia
- Epigastric hernia
- Incisional hernia
- Lumbar/dorsal hernia
- Obturator/Perineal hernia

14. Anorectum

- Hemorrhoids, fissures, fistulas/abscess

15. Office Minor Surgery :

- I&D of abscess
- Sutures of skin laceration
- Skin biopsy, excision of moles/sebaceous cysts/lipoma
- Ablation of toenail
- Anoscopy/evacuation of thrombosed hemorrhoid veins
- Sclerotherapy

16. Surgical Procedures Learned on the General Surgical Service:

- Abdominal Examination
- Aseptic Technique
- Basic Wound Closure
- First assisting at surgery
- Hernia repair (Technique only - proficiency not achieved)
- Preoperative care
- Postoperative care

EVALUATION

The resident will be evaluated by the primary faculty based on the standard six levels of competency. The attending faculty will observe the resident's skill and competence directly in the patient care context and in the learning environment as the source of information for faculty evaluation. An evaluation form is completed at the end of the rotation by each of the supervising faculty. A written, final

evaluation for each resident is provided in accordance with residency evaluation guidelines as described in the Family Medicine Resident Handbook. Residents also provide an evaluation of the faculty on each rotation, grading the quality of the education and supervision they receive.

RESOURCES

Required Reading:

Selected chapters of:

Townsend, C.M. (Ed). Current Surgical Diagnosis and Treatment; Sabiston's Textbook of Surgery 16th. Saunders. 21000

Additional Reading:

1. About Ambulatory Surgery. SurgiNet Foundation. (http://www.surginet.org/amb/surgery.hym).
2. Bodai, BI. The myths of managed care. Arch Surg 131:1032, 1996.
3. Laffaye, HA. The impact of an ambulatory surgical service in a community hospital. Arch Surg 124:601-603, 1989.
4. Milliman & Robertson. Healthcare Management Guidelines for Ambulatory Surgery Vol 3, 1997
5. National Center for Health Statistics. Ambulatory surgery in the United States, 1995. Number 296, December 24, 1997.
6. Burke, M. New surgical technologies reshape hospital strategies. Hospitals 66(9) 30-36, 38, 40-42.
7. Leader, S, Moon, M. Medicare trends in ambulatory surgery. Health Affairs Spring: 158-170.
8. Durant, G. Ambulatory Surgery centers: surviving, thriving into the 1990s. Medical Group Management Journal 36(2): 16-18, 20, 1989.