Clinical Teaching Unit #5 (CTU #5) – Upper GI/Thoracics/Head & Neck

Rotation Description:

CTU #5 includes Dr. Ken Reid (Service Chief – Thoracic Surgery), Dr. Dimitri Petsikas (Cardiothoracic Surgery), Dr. Wiley Chung (Upper GI/Thoracic Surgery), and Dr. Jason Franklin (Otolaryngology). This service provides experience in the care of patients with clinical problems of the Upper GI system (benign and malignant disease of the esophagus and gastroesophageal junction), Thoracics (benign and malignant disease of the lung, pleura, trachea, mediastinum, diaphragm, and chest wall) and Head and Neck surgery. Objectives for the rotation are listed below.

Medical Expert/Clinical Decision Maker:

All General Surgery Residents will rotate through this service on several occasions as a junior or senior resident. Junior residents are expected to develop skills in managing and assessing patients with conditions cared for on this service. They should be able to assess presenting problems and establish reasonable work up including appropriate investigations and establish a therapeutic plan. They should be able to manage most common perioperative problems and be able to identify as well as manage complications as they arise.

1. Function effectively as consultants, integrating all of the CanMEDS Roles to provide optimal, ethical and patient-centred medical care.
   a. Perform a consultation effectively, including the presentation of well-documented assessments and recommendations in oral, written and/or electronic form in response to a request from another health care professional.
   b. Demonstrate use of all CanMEDS competencies relevant to General Surgery.
   c. Identify and appropriately respond to relevant ethical issues arising in patient care.
   d. Demonstrate the ability to prioritize professional duties effectively when faced with multiple patients and problems.
   e. Demonstrate compassionate and patient-centred care.
   f. Recognize and respond to the ethical dimensions in medical decision-making.
   g. Demonstrate medical expertise in situations other than patient care, such as providing expert legal testimony or advising governments, as needed.

2. All residents should be able to establish and maintain clinical knowledge, skills, and behaviors appropriate to their practice.
   a. Apply knowledge of the clinical, socio-behavioural, and fundamental biomedical sciences relevant to General Surgery
      i. Esophagus:
         1. Surgical anatomy, including but not limited to relationships to other structures in the neck, mediastinum, and upper abdomen; arterial supply, venous drainage, and lymphatic drainage.
         2. Physiology
            a. Pharyngoesophageal function and swallowing
            b. Esophageal peristalsis
            c. Lower esophageal sphincter function
            d. Anti-reflux mechanisms
Rotation Specific Goals and Objectives

3. Clinical Conditions
   a. Anatomic abnormalities, including but not limited to esophageal diverticula, congenital webs or rings, and hiatus hernia.
   b. Pharyngoesophageal motility disorders
   c. Infectious and inflammatory conditions, including but not limited to eosinophilic esophagitis
   d. Gastroesophageal reflux disease and its complications, including but not limited to Barrett’s esophagus, esophagitis and its sequelae (ulceration, erosion, structuring, and perforation).
   e. Injuries, including but not limited to perforation, trauma, and caustic exposure.
   f. Obstruction, including but not limited to foreign bodies and strictures
   g. Neoplasms
      i. Benign
      ii. Malignant
         1. Esophageal Cancer
         2. Gastroesophageal Junction Cancer

ii. Stomach
   1. Surgical anatomy, including but not limited to relationships to other structures in the abdomen; arterial supply, venous drainage, and lymphatic drainage.
   2. Physiology
      a. Gastric acid secretion and gastric emptying
   3. Clinical conditions
      a. Peptic ulcer disease and its complications, including but not limited to hemorrhage, perforation, and obstruction
      b. Gastric foreign bodies
      c. Neoplasms of the stomach: benign and malignant

iii. Abdominal Wall
   1. Surgical anatomy of the following:
      a. Abdominal wall, including muscular and fascial components
   2. Clinical conditions
      a. Anatomic abnormalities resulting in the following hernias
         i. Ventral
         ii. Umbilical

iv. Head and Neck
   1. Surgical Anatomy
      a. Major structures of the neck, including but not limited to the triangles of the neck, major arteries, veins, nerves and lymph node groups
      b. Thyroid gland, including but not limited to its relationships to other structures; its arterial supply and venous drainage; and the location of the superior laryngeal nerves and recurrent laryngeal nerves.
      c. Parathyroid glands, including the typical and atypical locations of the glands.
      d. Salivary glands: the parotid and submandibular glands, their ducts and innervation
e. Approach to a left neck dissection to achieve a proximal resection margin for an esophagogastrectomy and constructing an esophagogastric anastomosis.

2. Physiology
   a. Thyroid gland function
   b. Parathyroid gland function

3. Clinical conditions
   a. Hyperthyroidism and Hypothyroidism
   b. Hyperparathyroidism
   c. Cysts of the neck
   d. Neoplasms of the thyroid gland: benign and malignant
   e. Neoplasms of the salivary glands: benign and malignant
   f. Neoplasms of the head and neck: benign, premalignant, and malignant
   g. Chyle leak in the neck following the McKeown (Three-Hole Esophagectomy) Esophagectomy

v. Trauma
   1. Surgical Anatomy
      a. Cervical anatomy: vessels, trachea, esophagus
      b. Thoracic anatomy: chest wall, lung, pleura, mediastinal, vascular, and aerodigestive structures and their relation to each other.
      c. Abdominal anatomy: solid organs (liver, kidneys, spleen), hollow viscous organs (stomach, duodenum, small and large intestine, rectum), bladder.
   2. Clinical conditions
      a. Shock, including but not limited to hemorrhagic, obstructive, and neurogenic
      b. Neck injury
         i. Injuries to aerodigestive tract, including but not limited to emergency airway management
         ii. Injuries to the major blood vessels
      c. Thoracic Infection
         i. Empyema
            1. Indications for thrombolytic therapy
            2. Contraindications for thrombolytic therapy
            3. Indications for VATS or open decortication
            4. Contraindications for VATS or open decortication
         ii. Mediastinal abscess
         iii. Chest wall abscess
         iv. Skin infection
      d. Management of pleural effusion
         i. Understand the principles and significance of Light’s criteria
         ii. Management of a transudative effusion
         iii. Management of an exudative effusion
         iv. Management of a persistent unexplained exudative effusion.
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Rotation Specific Goals and Objectives

e. Thoracic Injury
   i. Pneumothorax and tension pneumothorax
      1. Traumatic pneumothorax
      2. Tension pneumothorax
      3. Primary spontaneous pneumothorax
      4. Secondary spontaneous pneumothorax
      5. Post-operative pneumothorax
      6. Traumatic pneumothorax

   ii. Hemothorax

   iii. Chylothorax

   iv. Pulmonary contusion

   v. Traumatic aortic tear

   vi. Hemopericardium secondary to penetrating trauma

   vii. Major airway injuries

   viii. Inhalation injuries

   ix. Esophageal injuries

   x. Sternal injuries

   xi. Chest wall injuries
      1. Indications for rib fixation
      2. Contraindications for rib fixation
      3. Approaches to rib fixation

   vi. Minimally invasive surgery (Laparoscopy, Thoracoscopy)
      1. Equipment function, common equipment-related problems, and their solutions
      2. Applications, indications and contraindications of the minimally invasive surgical approach
      3. Effects of pneumoperitoneum on organ systems (Laparoscopy)
      4. Effects of pneumoperitoneum on the pregnant patient and fetus (Laparoscopy)
      5. Effects pneumoperitoneum on poorly functioning organ systems (Laparoscopy)
      6. Effects of suction in the thoracic cavity (Thoracoscopy)

   vii. Nutrition
      1. Normal requirements for calories, carbohydrates, fat, protein vitamins, trace elements and minerals
      2. Nutritional assessment techniques
      3. Effects of trauma and illness on nutritional requirements
      4. Indications for enteral and parenteral nutrition supplementation and their potential complications.

   3. Perform a complete and appropriate assessment of a patient
      a. Identify and effectively explore issues to be addressed in a patient encounter, including the patient’s context and preferences.
      b. Elicit a history that is relevant, concise, and accurate to context and preferences for the purposes of diagnosis, management, health promotion, and disease prevention.
c. Perform a focused physical examination that is relevant and accurate for the purposes of diagnosis, management, health promotion, and health prevention.
d. Select medically appropriate investigative methods in a resource-effective and ethical manner.
e. Demonstrate effective clinical problem solving and judgment to address patient problems, including interpreting available data integrating information to generate differential diagnoses and management plans.

4. Use preventive and therapeutic interventions effectively
a. Implement a management plan in collaboration with a patient and the patient’s family
b. Demonstrate appropriate and timely application of prevention interventions relevant to the surgeon’s practice
   i. Prevention of Injury
      1. Appropriate strategies to enhance patient and provider safety and reduce the risk of complications from surgical interventions
   ii. Surveillance for lung and esophageal cancer
   iii. Prophylactic use of anticoagulants
iv. Demonstrate appropriate and timely application of therapeutic interventions relevant to the surgeon’s practice. The surgeon must be able to provide non-operative management of patients presenting with a range of conditions. This non-operative management may include but is not limited to initial resuscitation, stabilization, selection of appropriate investigations, as well as arranging operative management, overseeing ongoing care, and organizing patient transfer as appropriate. For some of the condition listed operative treatment will not be required.
      1. Non-operative management
         a. Identification and management of patients whose condition may not require operative treatment but for whom it is appropriate that their care be overseen by a General Surgeon. This includes patients with the following conditions:
            i. Benign and malignant Upper GI tract obstructions
            ii. Nutritional deficiency states
         b. Provision of non-operative management of traumatic injuries where appropriate
      2. Endoscopy
         a. Appropriate monitoring of patients undergoing upper GI endoscopy
         b. Use of medications to facilitate endoscopic procedures, including but not limited to sedatives, narcotic analgesics, and antispasmodic medications.
   3. Recognition and management of intraoperative and perioperative complications
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Rotation Specific Goals and Objectives

a. Perioperative complications related to pneumoperitonym, including but not limited to acidosis, hypotension, hypoxia, and pneumothorax
b. Perioperative complications of abdominal access, including but not limited to injuries to the abdominal viscera and blood vessels.
c. Perioperative complications of thoracic access, including but not limited to injuries to the thoracic viscera and pulmonary vessels.
d. Perioperative complications of sternotomy, including but not limited to injuries to the pericardium, myocardium, and mediastinal vessels.
e. Perioperative complications of a neck dissection, including but not limited to injuries to the carotid artery, internal jugular vein, trachea, and recurrent laryngeal nerve.

4. Obtain appropriate informed consent for therapies  
5. Ensure patients receive appropriate end-of-life care  

5. Demonstrate proficient and appropriate use of procedural sills, both diagnostic and therapeutic.  
a. The procedural skills of Upper GI General Surgery and Thoracic Surgery include open procedures, minimally invasive surgery (MIS) procedures, and Upper GI endoscopy is an essential and evolving component and the specific choice of an open or MIS approach for a given procedure will depend on patient factors, the operating environment, and the skills and experience of the surgeon.
   i. Demonstrate effective, appropriate, and timely performance of diagnostic procedures relevant to General Surgery  
      1. Diagnostic Upper GI Endoscopy, which may include forceps biopsy
      2. Interventional GI endoscopy which may include dilations using the balloon dilator, Maloney dilator, and Savary dilator with and without fluoroscopic guidance.
   ii. Demonstrate effective, appropriate, and timely performance of therapeutic procedures relevant to General Surgery  
      1. Skills of minimally invasive surgery (MIS)
         a. Position patient to optimize patient safety and to facilitate access during MIS procedures
         b. Obtain safe access to the peritoneal cavity using open and closed techniques
         c. Appropriate port side selection, placement and closure
         d. Suture laparoscopically
         e. Achieve hemostasis
      2. Obtain appropriate informed consent for procedures.
      3. Document and disseminate information related to procedures performed and their outcomes  
      4. Ensure adequate follow-up is arranged for procedures performed.
b. **Surgical Procedures List A**
   i. On completion of training, General Surgery residents must have expert knowledge of the following procedures, including their indications, contra-indications, alternative treatment options, and more common complications. The graduates must be **competent to independently perform** these procedures and to provide appropriate perioperative care.
   ii. Esophagus:
      1. Control of perforation (including establishing source control, primary repair, tissue reinforcement) at different levels (neck, thorax and intra-abdominal)
   iii. Stomach:
      1. Hiatal hernia repair (transabdominal approach)
      2. Operative treatment for acute gastric volvulus
      3. Partial or total gastrectomy
      4. Wedge resection of the stomach
   iv. Abdominal wall and hernia:
      1. Repair of hernias of the abdominal wall and diaphragm
      2. Repair of abdominal wound dehiscence
   v. Surgical debridement of complicated infections:
      1. Cellulitis and necrotizing soft tissue infections of the chest wall
   vi. Head and Neck:
      1. Tracheostomy
         a. To include post-op care and management of complications
   vii. Trauma:
      1. Establishment of a surgical airway
      2. Surgical exploration of penetrating neck injuries with control of major vascular injuries
      3. Insertion of chest tubes (Seldinger chest tubes, conventional chest tube, pleurX)
      4. Emergent thoracotomy
      5. Trauma Laparotomy
   viii. Endoscopy:
      1. Upper GI endoscopy of hemostasis
      2. Endoscopic foreign body removal
      3. Endoscopic food bolus extraction (including overtube insertion)
      4. Insertion of feeding NG tubes
      5. Management of complications of endoscopic procedures, including but not limited to perforation of the esophagus and stomach, hemorrhage and infection

   c. **Surgical Procedures List B**
      i. On completion of training General Surgery residents must **understand the following procedures**, including the indications, contra-indications, alternative treatment options, and more common complications. The graduate **may be able to perform** these procedures independently.
      ii. Esophagus:
1. Esophageal dilation (balloon, Maloney, Savary +/- fluoroscopic guidance
2. Cricopharyngeal myotomy
3. Anti-reflux surgery
4. Heller myotomy
5. Repairs of Zenker’s diverticulum

iii. Stomach:
   1. Staging laparoscopy
   2. Laparoscopic liver biopsy

iv. Abdominal wall and hernia
   1. Management of ventral hernia

v. Head and Neck
   1. Thyroidectomy
   2. Parathyroidectomy
   3. Thyroglossal duct cyst excision
   4. Lateral neck dissection
   5. Central lymph node dissection
   6. Treatment of ranulas and mucoceles

vi. Trauma:
   1. Operative management of cardiac injuries
   2. Operative management of thoracic injuries
   3. Operative management of major vascular injuries
   4. Non-anatomic lung resection for trauma
   5. Hemorrhage control in the chest for trauma

vii. Endoscopy
   1. Stenting
   2. Dilation of stricture
   3. Management of variceal bleeding

d. Surgical Procedures List C
i. On completion of training, General Surgery residents will be able
to describe the principles of the following procedures, indications for referral, perioperative management, and complications. The graduate is not expected to be able to perform these procedures without further training.

ii. Esophagus
   1. Re-do antireflux surgery
   2. Esophagectomy
   3. Mid-esophageal and epiphrenic esophageal diverticulum repair.

iii. Lymph nodes
   1. Neck dissections (functional and radical)
   2. Surgical management of a chyle leak

iv. Head and neck
   1. Lateral neck dissection
   2. Parotidectomy
   3. Major salivary gland excision
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4. Laryngectomy
   a. Understanding anatomy and physiology

5. Mucosal malignancies of the upper aerodigestive tract
   a. Basic management principles.

6. Seek appropriate consultation from other health professional, recognizing the limits of their own expertise
   a. Demonstrate insight into their own limits of expertise
   b. Demonstrate effective, appropriate, and timely consultation of another health professional as needed for optimal patient care.
   c. Arrange appropriate follow-up care services for patients and their families

7. Contribute, as an individual and as a member of a team providing care, to the continuous improvement of health care quality and patient safety.
   a. Recognize and respond to harm from health care delivery, including patient safety incidents.
   b. Adopt strategies that promote patient safety and address human and system factors.

Communicator

A. Establishes a therapeutic relationship with the patient and the family or significant support persons recognizing the importance of understanding, trust, respect, empathy and confidentiality.

B. Able to obtain a complete history of the presenting problem including the patients beliefs, concerns and expectations while considering important factors such as age, gender, cultural, spiritual and socio-economic background.

C. Effective listener, allowing the patient to participate in the decision making process.

D. Communicates and cooperates effectively with referring doctors, nurses and allied health care professionals to ensure the best patient care including:
   a. Respecting and considering the opinions of nursing staff
   b. Facilitating medical student input in patient management

E. Demonstrates skill in communicating with others that have different ethno-cultural backgrounds and in communicating with angry and hostile patients and families.

Collaborator

A. Consults effectively with other physicians and health care professionals. Works effectively and harmoniously with the entire health team.

B. Contributes and takes a leadership role in the interdisciplinary team and housestaff team
   a. Includes attending and contributing to multidisciplinary conferences
C. Is able to describe the role of all members of the health care team.
D. Brings the same attributes to both the clinical setting as well as the research and quality assurance settings.

Leader

A. Utilizes resources wisely to balance patient care, research and education.
   a. Including day to day time management
   b. Identifying and recording morbidity and mortality
B. Effectively manage health care resources in the work up of patients.
C. Demonstrates the ability to work effectively and cooperatively in a health care team environment.
   a. Demonstrates ability to appropriately delegate tasks
   b. Demonstrates ability to take charge/lead in critical situations
D. Uses technology to optimize patient care, life long learning and other clinically related activities.

Health Advocate

A. Able to identify important determinants of health affecting patient’s well being.
B. Contributes effectively to improve the health of patients and communities
C. Responds to situations in which advocacy is appropriate for the patient, the profession and society in general.
   a. Appropriate involving services such as social work and geriatric rehab
D. Understands the role and function of support groups such as Alcoholics Anonymous, and the Canadian Cancer Society.

Scholar

A. Uses evidenced based practice to ensure optimal and current patient care
B. Facilitates the education of junior residents, medical students and other member of the health care team.
C. Contributes to the development of new knowledge.
D. Develop, implement, and monitor a personal continuing education strategy

Professional

A. Delivers the highest quality care with integrity, honesty and compassion.
B. Interact with patients, families, nurses and other health care personnel in a professional manner with appropriate attitudes and provide care in an ethical manner.
C. Exhibits appropriate personal and interpersonal professional behavior.
   a. Timeliness (on time for clinics, ORs, rounding, etc)
b. Accountability (ie answers pages)
c. Honesty (ie. Medical error disclosure)

D. Strive to balance personal and professional roles and responsibilities, and to demonstrate ways to resolve conflicts in these areas.

E. Practices medicine with the ethical consistency and obligation of a Medical Professional.