Trauma of the Gastrointestinal Tract

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INTRODUCTION

The gastrointestinal (GI) tract runs from the mouth to the anus, passing through the head, neck, thorax, and abdomen. The GI tract is vulnerable to trauma in each of these areas. In blunt trauma, the small or large bowel may be injured in up to 5% to 10% of patients, with injury occurring secondary to direct compression, deceleration, or a rapid increase in intra-abdominal pressure. In penetrating trauma, all regions of the GI tract are vulnerable to missiles or blades. A thorough understanding of the evaluation and management of trauma to the GI tract is essential to surgeons who care for traumatically injured patients.

ESOPHAGEAL TRAUMA

CASE PRESENTATION 1

A 21-year-old man presents to the emergency department (ED) trauma resuscitation area 10 minutes after sustaining a gunshot wound to the neck. Upon arrival the patient is awake and alert with moderate anxiety. There is an obvious 5-mm wound at the midline just above the thyroid cartilage, with air exiting the wound on expiration. He is vocalizing with mild hoarseness and no dyspnea. Peripheral pulses are intact and symmetric. His heart rate is 104 bpm.

• What are the next steps in the assessment of this patient?

The first step is to assess the ABCs of trauma as described in the Advanced Trauma Life Support Course. The next step in management is to fully assess the patient for additional wounds or injuries and determine the location of projectiles. After removing all clothing, the patient must be promptly log rolled to look for additional wounds, and a chest radiograph should be obtained. Radiographs of the cervical spine may aid in assessing the location of the projectile. Given the risk for loss of airway, the patient can never be left unattended and should not be taken to the radiology department without a secured airway.

CASE 1 CONTINUED

The physician notes that the patient is hemodynamically stable with a patent airway on arrival. Secondary survey demonstrates focal sensory and motor deficits of the right upper extremity. Cervical spine immobilization is continued with a hard collar. Plain films of the cervical spine and chest show a retained projectile and a likely cervical spine injury (Figure 1). There is no evidence of pneumothorax. Airway remains intact with no change in the subtle hoarseness of the patient’s voice.

• Should this patient be intubated at this time?

Although the patient has a patent airway at present, he has an obvious injury to the airway as evidenced by air exiting the wound. Blind intubation may inadvertently create a false passage in the submucosal space and thus worsen an injury or totally occlude the airway. Preferred options to secure this patient’s airway include fiberoptic image–guided intubation or placement of a surgical airway (tracheostomy) below the level of the injury.

CASE 1 CONTINUED

The patient undergoes an uneventful tracheostomy under local anesthetic and mild sedation in order to maintain his airway. Direct bronchoscopy performed at the time of his tracheostomy reveals an injury at the level of the vocal cords anteriorly. The patient remains hemodynamically stable without active bleeding from the wound or evidence of neck hematoma.

• Once the airway is secured, is formal neck exploration mandatory?

For the evaluation and care of trauma patients, the neck is often divided into 3 anatomical zones (Figure 2). By physical examination and imaging, the patient appears to have an injury in zone 2 of the neck. Traditional teaching in the care of trauma patients is that penetrating injuries to zones 1 and 3 are managed with a strategy of selective operative exploration and that hemodynamically stable patients undergo evaluation with endoscopy, esophagography, angiography, and bronchoscopy. In contrast, patients with injuries to zone