

Answer

Esophageal Injury

The CT scan was very concerning for esophageal injury. To further delineate the operative approach of right thoracotomy vs left neck exploration to examine the esophagus, a meglumine diatrizate (Gastrografin) swallow study was performed. The swallow study showed a bullet in the superior mediastinum in the cervicothoracic esophagus. This was best approached through the left neck (**Figure 2**). At exploration, a 4-cm tear in the cervical esophagus was noted. The cervical esophagus injury was closed in 2 layers, with closure of the mucosa with an interrupted inner layer of 4-0 nonabsorbable suture. The muscular layer of the esophagus was closed with interrupted Lembert sutures of 4-0 silk. A Jackson-Pratt drain was placed. Postoperatively, the patient did well; he did develop a thoracic duct leak that was conservatively managed. He had negative Gastrografin swallow study results on postoperative day 6, tolerated a general diet, and was subsequently discharged home on postoperative day 13.

Transmediastinal gunshot wounds can be devastating injuries. In hemodynamically unstable patients, immediate operation is indicated as these patients may have major cardiac or vascular injury. In hemodynamically stable patients, however, the patient can be uninjured or have occult vascular, esophageal, or tracheobronchial injury. Evaluation of these patients traditionally includes angiography, bronchoscopy, esophagoscopy, and pericardial window. With the advent of contrast-enhanced CT scan, however, evaluation of injury can often be accomplished with only a CT scan showing the missile tract through the mediastinum. Certainly further investigational studies can be used to better delineate injuries that may require further intervention.¹

Penetrating esophageal injuries are an uncommon injury because of the esophagus's central and protected lo-

cation.² Esophageal injuries occur in approximately 3% to 6% of neck injuries.³ These injuries carry a high morbidity and a mortality of 20%.⁴ Factors that lead to the increase in morbidity include difficulty of accessing the esophagus, propensity of esophageal repair breakdown due to its lack of a strong serosal layer, and proximity of vital structures.⁵ Delay in operative repair is one of the key factors that has been shown to increase esophageal morbidity.⁶

The mainstay of diagnostic workup of esophageal injury is CT scan, which can show extraluminal air, fluid, or abscess. Water-soluble contrast study is the gold standard for further delineating esophageal perforation.⁷ If patients cannot undergo such evaluation then videoendoscopy may be an alternative method of diagnosis in high-risk trauma patients.⁸ Nonoperative treatment is often appropriate for patients with iatrogenic perforation; however, standard treatment for penetrating esophageal injury includes immediate operative repair without delay. Primary repair, if possible, should be attempted, while exclusion and diversion should be considered if damage is too extensive.⁵

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Figure 2. Initial meglumine diatrizate (Gastrografin) swallow study results.

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