

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

Journal of Acute Medicine 1 (2011) 30–32

[www.e-jacme.com](http://www.e-jacme.com)

## Case Report

## Traumatic esophageal laceration presenting as a tongue laceration

Yauh-Mirng Jehng<sup>a</sup>, Francis Tzen-Tak Lee<sup>a</sup>, Yung-Chia Pai<sup>a,b</sup>, Wai-Mau Choi<sup>a,b,\*</sup><sup>a</sup> Department of Emergency Medicine, Hsinchu Mackay Memorial Hospital, Hsinchu, Taiwan<sup>b</sup> Institute of Injury Prevention & Control, Taipei Medical University, Taipei, Taiwan

Received 30 March 2011; accepted 1 April 2011

Available online 15 September 2011

**Abstract**

Esophageal injuries may occur spontaneously because of iatrogenic instrumental injury, foreign body impaction, or external trauma. Traumatic esophageal laceration is rare and can lead to significant morbidity such as perforation, mediastinitis, retropharyngeal abscess, or deep neck infection. Early detection of esophageal injury improves patient outcome and survival compared with a diagnosis that is delayed by more than 24 hours after rupture. We describe the case of a 45-year-old man with esophageal laceration after facial contusion and tongue laceration. Upper airway compromise is the major concern for emergency physicians. In a nonsurgical approach, close observation is needed because there is a potential risk of progression to delayed esophageal rupture. If there is clinical deterioration, repeat endoscopy or surgical intervention should be considered. Early detection of esophageal rupture in patients with minor head injuries can reduce mortality and morbidity and avoid major surgery and, in most cases, allows the esophagus to heal normally.

Copyright © 2011, Taiwan Society of Emergency Medicine. Published by Elsevier Taiwan LLC. All rights reserved.

**Keywords:** Tongue laceration; Traumatic esophageal laceration**1. Introduction**

Esophageal injuries may occur spontaneously, as in Boerhaave's syndrome, or can be caused by iatrogenic instrumental injury, foreign body impaction, severe vomiting, or external trauma. Traumatic esophageal laceration is rare and can lead to significant morbidity, such as perforation, mediastinitis, retropharyngeal abscess, or deep neck infection. Early detection of esophageal injury in the emergency department (ED) is important because it improves patient outcome and survival compared with a diagnosis that is delayed by more than 24 hours after rupture.

**2. Case report**

A 45-year-old man visited our ED seeking a second opinion because of tongue laceration and difficulty in swallowing after

a traffic accident. On the previous day, he suffered contusion of the neck and chest wall in a traffic accident. The emergency medical services were called and he was brought to a nearby hospital for medical management. A chest contusion with tongue laceration was diagnosed shortly after primary evaluation in the ED. The tongue laceration was sutured by the emergency physician and chest radiography revealed no evidence of rib fracture or pneumothorax. However, the next day, he visited our ED because of progressive difficulty in swallowing. The patient had sublingual swelling and left-side neck tenderness. He could not lie down because of pain and difficulty in breathing, so he remained in a tripod position. His blood pressure was 201/118 mmHg, with a regular pulse of 83 beats per minute and a normal respiratory rate, with 100% oxygen saturation. The patient complained of worsening difficulty in swallowing, progressive enlargement of the tongue, chest pain, odynophagia, and dysphagia. He could not drink and drooling was noted.

On examination, the patient was alert and oriented. His body temperature was 36.2°C. His tongue was markedly enlarged, with a sutured laceration site; the uvula was invisible and the oral airway was almost obstructed because of tongue

\* Corresponding author. Department of Emergency Medicine, Hsinchu Mackay Memorial Hospital, 690, Section 2, Guang Fu Road, Hsinchu 30071, Taiwan.

E-mail address: [a5873@ms7.mmh.org.tw](mailto:a5873@ms7.mmh.org.tw) (W.-M. Choi).

enlargement (Mallampati class 4: only the hard palate visible). There was a tender point on the left upper chest wall, but the chest expanded symmetrically and no decrease in breath sounds was observed. The extremities were warm and well perfused with normal capillary refill. Laboratory test data are shown in Table 1.

Neck and chest computed tomography (Figs. 1 and 2) showed a constant small left-esophageal air pocket at the level of the cricoid cartilage. A small esophageal laceration was thus suspected.

Esophagography studies confirmed this suspicion. Flexible esophagography was not possible because of enlargement of the tongue, which almost obstructed the oral airway. The patient was admitted to the surgical ward for conservative treatment and antibiotics. He was discharged 1 week later without any complications during his hospital stay.

### 3. Discussion

Esophageal injury is rare among trauma victims. The esophagus is relatively protected by the thoracic rib cage and mediastinal structures. This anatomic position impairs the clinical detection of esophageal injuries. Moreover, damage to mediastinal organ structures often results in immediate death. Early detection of esophageal injury improves patient outcome and survival<sup>1,2</sup> compared with a diagnosis that is delayed by more than 24 hours after rupture. The true incidence of esophageal damage related to external trauma is not known because many patients die immediately from injuries to mediastinal major vessels, the heart, airway, or cervical spine. Esophageal perforation has traditionally been considered a catastrophic, often life-threatening event, with mortality rates of 10–40% in general. Even higher rates are reported following spontaneous perforations in septic patients.<sup>3–7</sup>

Patients often present with nonspecific complaints and subtle physical findings, which make diagnosis difficult. The problem frequently goes unrecognized until late in the clinical course. Higher mortality rates have been attributed to delays in diagnosis.<sup>8–10</sup> Other suggested factors that influence outcome

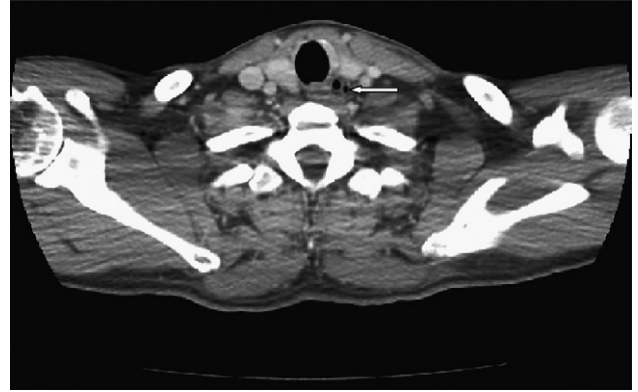


Fig. 1. Axial computed tomography scan indicating a constant small left-periesophageal air pocket at the level of the cricoid cartilage (arrow).

include age, the presence of underlying esophageal disease, the etiology of the perforation,<sup>8,10</sup> and the mode of treatment.<sup>11</sup> Esophageal perforation presents both a diagnostic challenge and a therapeutic problem. A previous study advocated aggressive surgical therapy and indicated that early initiation of treatment was crucial for success.<sup>12</sup>

Despite aggressive surgical management, morbidity remains high. Some authors suggest, nevertheless, that overall morbidity and mortality may be decreasing, partly owing to advances in intensive care management, antibiotics, and parenteral nutrition.<sup>8,13</sup>

The diagnosis of esophageal contusion is based on clinical, endoscopic, and tomographic evaluation. In a nonsurgical approach, frequent clinical observation is needed because there is a potential risk of progression to delayed esophageal rupture. If there is clinical deterioration, repeat endoscopy or surgical intervention should be considered.<sup>14</sup>



Fig. 2. Computed tomography scan indicating a constant small left-periesophageal air pocket at the level of the cricoid cartilage (arrow).

Table 1  
Laboratory results

Hemoglobin	15.8 gm/dL
Hematocrit	47.1%
White blood cells	18000/ $\mu$ L
Banded neutrophils	0
Neutrophils	90
Eosinophils	0
Basophils	0
Monocytes	4
Lymphocytes	6
Platelets	$297 \times 10^3$ / $\mu$ L
Glucose (AC)	107 mg/dL
Blood urea nitrogen	10 mg/dL
Creatinine	0.7 mg/dL
K	3.8 mEq/L
Na	138 mEq/L

AC = ante cibum.

Flexible esophagoscopy seems to be an accurate diagnostic tool in assessing traumatic esophageal injuries. Endoscopists should be aware of two clinical findings, laceration with esophageal perforation and esophageal contusion. Lacerations require surgical repair. Esophageal contusion is a non-perforating injury to the esophageal wall that requires correlation with CT, and may be managed nonsurgically with close clinical observation.<sup>14,15</sup>

#### 4. Conclusion

We present our experience with a patient with esophageal laceration after facial contusion and tongue laceration. In a nonsurgical approach, close observation is needed because there is a potential risk of progression to delayed esophageal rupture. We believe that early detection of esophageal rupture in patients with minor head trauma can reduce mortality and morbidity.

#### References

- Asensio JA, Berne J, Demetriades D, et al. Penetrating esophageal injuries: time interval of safety for preoperative evaluation – how long is safe? *J Trauma*. 1997;43:319–324.
- Attar S, Hankins JR, Suter CM, Coughlin TR, Sequeira A, McLaughlin JS. Esophageal perforation: a therapeutic challenge. *Ann Thorac Surg*. 1990;50:45–49.
- Kiernan PD, Sheridan MJ, Elster E, et al. Thoracic esophageal perforations. *South Med J*. 2003;96:158–163.
- Okten I, Cangir AK, Ozdemir N, Kavukçu S, Akay H, Yazuver S. Management of esophageal perforation. *Surg Today*. 2001;31:36–39.
- Gupta NM, Kaman L. Personal management of 57 consecutive patients with esophageal perforation. *Am J Surg*. 2004;187:58–63.
- Jougou J, McBride T, Delcambre F, Minniti A, Velly JF. Primary esophageal repair for Boerhaave's syndrome whatever the free interval between perforation and treatment. *Eur J Cardiothorac Surg*. 2004;25:475–479.
- Zumbro GL, Anstadt MP, Mawulawde K, Bhimji S, Paliotta MA, Pai G. Surgical management of esophageal perforation: role of esophageal conservation in delayed perforation. *Am Surg*. 2002;68:36–40.
- Jones WG II, Ginsberg RJ. Esophageal perforation: a continuing challenge. *Ann Thorac Surg*. 1992;53:534–543.
- Gouge TH, Depan JH, Spencer FC. Experience with the Grillo pleural wrap procedure in 18 patients with perforation of the thoracic esophagus. *Ann Surg*. 1989;209:612–619.
- White RK, Morris DM. Diagnosis and management of esophageal perforations. *Am Surg*. 1992;58:112–119.
- Goldstein LA, Thompson WR. Esophageal perforations: a 15 year experience. *Am J Surg*. 1982;143:495–503.
- Skinner DB, Little AG, DeMeester TR. Management of esophageal perforation. *Am J Surg*. 1980;139:760–764.
- Nesbitt JC, Sawyers JL. Surgical management of esophageal perforation. *Am Surg*. 1987;53:183–191.
- Arantes V, Campolina C, Valerio SH, et al. Flexible esophagoscopy as a diagnostic tool for traumatic esophageal injuries. *J Trauma*. 2009;66:1677–1682.
- Fonseca AZ, Ribeiro MAF Jr, Frazão A, Costas MC, Spinelli L, Contrucci O. Esophagectomy for a traumatic esophageal perforation with delayed diagnosis. *World J Gastrointest Surg*. 2009;1:65–67.