Case Report

Hyoid bone fracture caused by blunt neck trauma

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Received 24 February 2012; accepted 15 March 2012
Available online 28 September 2012

Abstract

Hyoid bone fracture is usually the result of direct trauma to the neck because of manual strangulation, hanging, blunt trauma or projectiles. However, hyoid bone fracture caused by a fall has seldom been reported. We report the case of a young man who fell from 1.5 m while painting, which resulted as an isolated hyoid bone fracture. Hyoid bone fracture secondary to trauma may occur when a victim falls with a direct contusion of the neck.

1. Introduction

Blunt neck trauma is usually caused by motor vehicle accidents, strangulation, sport injuries or assaults. However, fracture of the hyoid bone is rare because it is protected by the mandible. In fact, most hyoid bone injuries are caused by strangulation.1 The management of patients with blunt neck contusion is difficult. This injury can cause rapid deterioration of a patient’s condition and can quickly become life-threatening. In most cases, a missed or delayed diagnosis can result in morbidity and death. The management of this injury has special considerations. Nevertheless, serious injuries following blunt neck trauma are not common.2–4

2. Case report

A 36 year-old man who came to our emergency department with odynophagia and left wrist pain after falling from about 1.5 m while he was painting. The patient had no significant medical history. Physical examination revealed mild swelling of the left side of the neck, with a 1 cm superficial laceration at zone II on the left side of the neck; there was no limited range of the motion of the neck. Left wrist swelling and deformity were also noted. No subcutaneous emphysema or expanding hematoma was found during physical examination. The patient complained of mild soreness, odynophagia, hoarseness and dysphonia, but neither respiratory distress nor focal neurological deficits were found. Soft tissue view radiography of the left wrist and lateral neck showed a distal radius fracture, as well as increased thickness of the retropharyngeal and the retro tracheal soft tissue spaces.

Neck computed tomography (CT) was done because of persisting neck pain and it revealed a bony fracture involving the left side of the hyoid bone with adjacent soft tissue swelling (Fig. 1). A fiberscopic examination was showed symmetric motion of the bilateral vocal cords with no vocal palsy. This patient was treated conservatively with oral analgesics and transferred to a medical center for further care.2,4–6

3. Discussion

Neck injury can manifest with various symptoms and signs; sometimes, no specified physical findings are noted in a stable patient, which makes diagnostic strategies difficult. Zone II extends from the inferior margin of the cricoid cartilage cephalad to the angle of the mandible. Injuries in
zone II may involve the carotid and vertebral arteries, jugular veins, esophagus, trachea, larynx, and spinal cord. Soft and hard signs of neck trauma should be evaluated carefully, and if there is high clinical suspicion of organ damage, ancillary studies such as neck soft tissue radiography, CT scan, direct nasolaryngoscopy, further pharyngoscopy, and laryngobronchoscopy may help to confirm or exclude the possibility of associated injuries.\textsuperscript{7}–\textsuperscript{9}

Hyoid fractures can be detected with a lateral cervical radiograph.\textsuperscript{8} Head and neck CT provide more detailed information and reveals the possible involvement of associated structures. Most head and neck trauma result in fractures of the mandible, the cervical spine, and other laryngeal cartilage.\textsuperscript{11}

The Practice Management Guidelines Committee of the Eastern Association for the Surgery of Trauma state that for neck trauma “selective operative management and mandatory exploration of penetrating injuries to Zone II of the neck are equally justified and safe”.\textsuperscript{10}

4. Conclusion

We described a case of left-side comminuted fracture of the hyoid bone due to direct contusion after a fall. Direct nasolaryngoscopy was performed to ensure safety of the airway. Moreover, CT was performed to confirm the findings of lateral radiography of the neck as well as to exclude the possibility of associated injuries. The great majority of uncomplicated cases of hyoid fracture, as shown in the literature, can be treated conservatively. Uncomplicated cases of closed neck trauma to the hyoid can be managed conservatively with oral analgesics, nasogastric feeding of a liquid diet, restricted movement, and consultation with speech and language pathologists to ensure adequate phonation.\textsuperscript{11} However, blunt cervical trauma can result in significant morbidity, and symptoms are often minimal or delayed. Head, facial, and cervical spine injuries frequently accompany blunt neck trauma, and conclusions about penetrating trauma may not apply to this condition. Furthermore, symptoms of carotid artery or aerodigestive injuries may be misinterpreted in the context of these associated injuries. We present this rare case to remind emergency physicians that the signs, symptoms and mechanism of neck trauma mandate aggressive diagnostic evaluation, close observation, and admission for treatment.

References