Unidentified Hyoid Bone Fracture and its Possible Impact on the Patient’s Life: A Report of 2 Cases

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Abstract

Hyoid bone fracture is usually due to strangulation, and, rarely, other forms of trauma. Its sequelaes are often immediate and distressing, and may be fatal. A prominent diagnostic sign is a palpable click. Concealed fractures can present confusing symptoms.

Two cases of previously undiagnosed hyoid bone fracture are presented, one affecting the greater cornu, the other, a fragmented fracture of the body of the hyoid. Considerable odynophagia was the main presentation in both cases, for two years in the first, and seven months in the second. In the first case, the probable cause was forcible deglutition against pressure. Spastic tongue and respiratory distress were encountered in both cases. The second patient finally presented with stridor after seven months.

Conclusion: Fracture of the hyoid bone can be missed during examination and may lead to spastic tongue and respiratory distress.

INTRODUCTION

Fractures of the hyoid bone are almost always traumatic [1-5], and several type of trauma has been reported as causes [7,8]. Dunsby and Davison [2] encountered 18 cases of isolated injury of the hyoid bone in their five-year study of coroners’ examinations. The cases were all the result of trauma, usually hanging or strangulation, but a significant minority involved a fall, assault, incised wound, gunshot wound, explosion, or road or railway collision. Self-induced vomiting has also been reported as a possible cause [4,5]. Among the rarer presentations of hyoid bone fracture, pseudo aneurysm of external carotid artery was reported [6].

Muscle action has been postulated as a cause, for example, in sudden hyperextension of the neck, but no case report supported the suggestion [1]. In one of the two cases presented here, forcible deglutition against pressure was the probable cause. The majority of these reported cases were managed conservatively. Recommended management includes close observation for 48–72 hours with special consideration to ensuring airway integrity. Notably, one of the patients here described presented with stridor and which called for urgent tracheotomy. Neck lacerations, odynophagia, dysphasia, and dyspnea should raise suspicion of the injury [1]. Martial arts players are prone to head and neck injuries, and with the increasing popularity of the sport, such injury should be considered in the players [7].

Special attention to the hyoid is recommended for persistent odynophagia that is resistant to treatment. An isolated hyoid fracture was discovered in a patient who had suffered from a globus sensation and persistent neck pain at the level of his thyroid cartilage for one year. His symptoms appeared suddenly after shouting; he developed a sudden "pop" and acute pain in the neck. Treatment necessitated excision of the dislocated segment of the hyoid bone [9].

Case 1

A 35-year-old male with a long, thick beard presented with a two-year history of dysphagia. His chief symptom was marked odynophagia. He had frequent episodes when he felt as though his tongue was spastic or sprained. The pain was sudden and sharp, always on the left side, and he found speaking impossible. The pain lasted about five minutes after the spasm. Infrequently, he felt asphyxiated during the episode. His main concern was the difficulty he met during meals. Food stopped in his throat, and he had to make a lot of effort, assisted with fluid intake, to pass the first bolus of food. Afterwards, deglutition became easier, and the discomfort was tolerable.

Two days prior to presentation, he was admitted at another hospital for respiratory distress. His tongue had fallen backwards and become spastic and immobile. His throat pain was severe. He was unable to speak. After a half-hour of oxygen by mask,
his tongue regained its mobility. However, he continued to experience pain when swallowing saliva. The patient did not recall appreciable trauma, but his complaint first occurred after an attack of aspiration and forcible deglutition. He did not complain of voice changes, and he had no sign of a compromised airway. Flexible nasal endoscopy showed a patent airway, freely mobile vocal cords, and normal valleculae, pyriform fossa and postcricoid area. Examination of the neck was made difficult by the patient’s beard, but fortunately, all regions were accessible. A definite click and tenderness were felt over the left greater cornu of the hyoid bone.

He underwent a CT scan of the neck, which demonstrated a fracture-dislocation between the left greater cornu and body of the hyoid bone Figure. Because of his beard, his previous neck examination may have been compromised, which might account for the missed diagnosis, in spite of the evident click overlying the fracture line. With the patient under general anesthesia and orotracheal intubation, the head and neck were hyperextended, with the face positioned to the right. The skin incision was continued through the subcutaneous tissue, and the platysma muscle was identified. Next, the hyoid bone was identified. The greater cornu was fractured and displaced upward, partially trapping the mylohyoid and hyoglossus muscles. The greater cornu of the hyoid was excised, with care to protect the lingual artery. The site was irrigated, a Penrose drain was placed, and the incision was sutured. The patient’s postoperative course included initial difficulty in swallowing, followed by progressive improvement and eventual cessation of the symptoms.

Figure 1 CT scan showing fracture at the junction of the left greater cornu and body of the hyoid bone.

Case 2

A 43-year-old male presented to the emergency department with severe throat pain and a spastic, backward-fallen, immobile tongue. He was distressed, agonized, and could not speak, therefore, was unable to give a detailed history. The patient’s colleagues from the airport reported that he had been driving a baggage cart that had collided with a bus, seven months earlier. The patient hit the steering wheel during the collision, and acquired a hematoma in the midline of his neck. His tongue became paralyzed and immobile, and he was dyspneic, but not distressed. By the time he arrived at the hospital, his symptoms had resolved. Later, he experienced several similar attacks; unfortunately, he was always referred for neurological consultation. Finally, he presented at the emergency department with a spastic tongue and persistent respiratory distress, which necessitated tracheotomy. The tracheotomy afforded complete relief. During surgery, a click was felt accidentally over the central part of the hyoid bone, which raised the suspicion of fracture. Immediate exploration revealed fragmented fractures of the hyoid bone, at the point of insertion of the hyoglossus muscle. The bony fragments were removed, a drain was inserted, and the wound was closed. Immediately after recovery, the patient’s tongue regained its normal position and movement. After two days, the tracheotomy tube was removed. Convalescence was uneventful.

DISCUSSION

The importance of hyoid fracture rests in the lethal potential of a missed diagnosis. Symptoms vary from mild neck pain to acute airway compromise.

In these two cases, the tongue spasms may have been initiated by entrapment of the suprahyoid muscle in the fracture site. The first patient experienced dysphagia, probably because the greater horn of the hyoid bone acted as a hinge on initiation of deglutition, which compressed the pharynx and lingual nerve. The fractured segment likely realigned in response to the forcible effort exerted by the patient’s pharyngeal muscles, mainly the middle constrictor.

In both cases, excision of a portion of the hyoid bone caused no impairment of the patient’s deglutition or speech.

CONCLUSION

Missed fracture of the hyoid bone has never been reported. Resistant odynophagia with or without spastic tongue and respiratory distress should raise suspicion of the injury. Radiography is recommended and should demonstrate injury if present. Two cases are presented here. The symptoms were confusing, and diagnosis was established accidentally.
Conservative management and close observation is the usual recommended management in the majority of cases of hyoid fracture. In the two cases presented here, treatment entailed excision of the fractured portion of the hyoid bone.

REFERENCES