

Abstract

Objectives: Highlight the importance of careful history when evaluating patients with mental handicap for stridor, discuss the challenges associated with laryngoscopy in this setting, and discuss safety implications of non-fixed dentures.

Study Design: Case report and literature review.

Methods: We report a case of a 52 year old male with a history of traumatic brain injury and seizure disorder who presented with breakthrough seizures. He was unable to communicate or cooperate with exam. He was admitted to the neurology service and was noted to have drooling and inspiratory stridor. This initially prompted a speech therapy swallow evaluation, who recommended ENT consultation. Plain film imaging was obtained and unremarkable. Flexible laryngoscopy was performed but inconclusive given patient's poor compliance with exam. Interview of his family revealed that his lower partial denture was missing.

Results: The patient was taken to the operating room for direct laryngoscopy and bronchoscopy. Glidescope® examination was very helpful in visualizing the upper airway prior to performing instrumentation. This revealed the lower partial denture lodged at the level of the glottis. It was safely removed with cup forceps and a Dedo laryngoscope. Post-removal rigid bronchoscopy was unremarkable. He had immediate relief of his stridor and the remainder of his hospitalization was unremarkable.

Conclusions: Dentures can be dangerous airway foreign bodies and are potential hazards in adults with compromised mental status. We would encourage consideration of fixed dentures in these patients to prevent catastrophic consequences.

Introduction

Foreign body aspiration is considered a medical emergency necessitating prompt intervention. Diagnosis can be delayed in individuals with altered mental status or other handicaps. They are relatively rare occurrences in the adult, comprising about 20% of all cases, and mostly in the later decades of life when protective mechanisms decline in function.¹ Those with altered mental status have an especially high risk given impaired coordination of swallowing, diminished reflexes, and behavioral impulsivity.² Among healthy and younger populations denture ingestion is quite rare.

Diagnosis is made on a detailed history and physical examination. History from family members and friends can provide important clues when patient participation is limited. Signs of wheezing, stridor, dysphonia, and diminished breath sounds are classic signs of aspiration. Plain imaging can provide helpful information but unless radiopaque, will often be missed. Operative airway assessment is recommended when suspicion is high and requires careful coordination of care with anesthesia staff.

Case Presentation

A 52 year old male presented to the emergency room with altered mental status and increased seizure activity after cocaine intoxication. His history was notable for a traumatic brain injury 16 years prior resulting in epilepsy. He was admitted to the neurology service for stabilization of these breakthrough seizures.

Stridor was noted upon arrival to the floor, so plain film imaging was obtained (Figures 1 and 2), which was unremarkable. The patient was made NPO pending a swallow evaluation. SLP assessment noted audible inspiratory stridor, as well as a missing lower partial denture. ENT evaluation was recommended for possible upper airway edema or foreign body aspiration.

On exam the patient was unable to communicate or cooperate secondary to his neurologic condition. Flexible bedside laryngoscopy was inconclusive, so the decision was made for formal airway evaluation in the operating room.

Initial attempts at visualization with a rigid laryngoscope were unsuccessful. A GlideScope® was utilized and then a pale, plastic object was noted in his glottic inlet (Figure 3). It was removed atraumatically with cup forceps. Rigid bronchoscopy was then performed and the remainder of the airway was unremarkable. He had no complications throughout the remainder of his hospitalization.



Figures 1 and 2: Neck and chest plain films.
No radiopaque foreign bodies were appreciated.

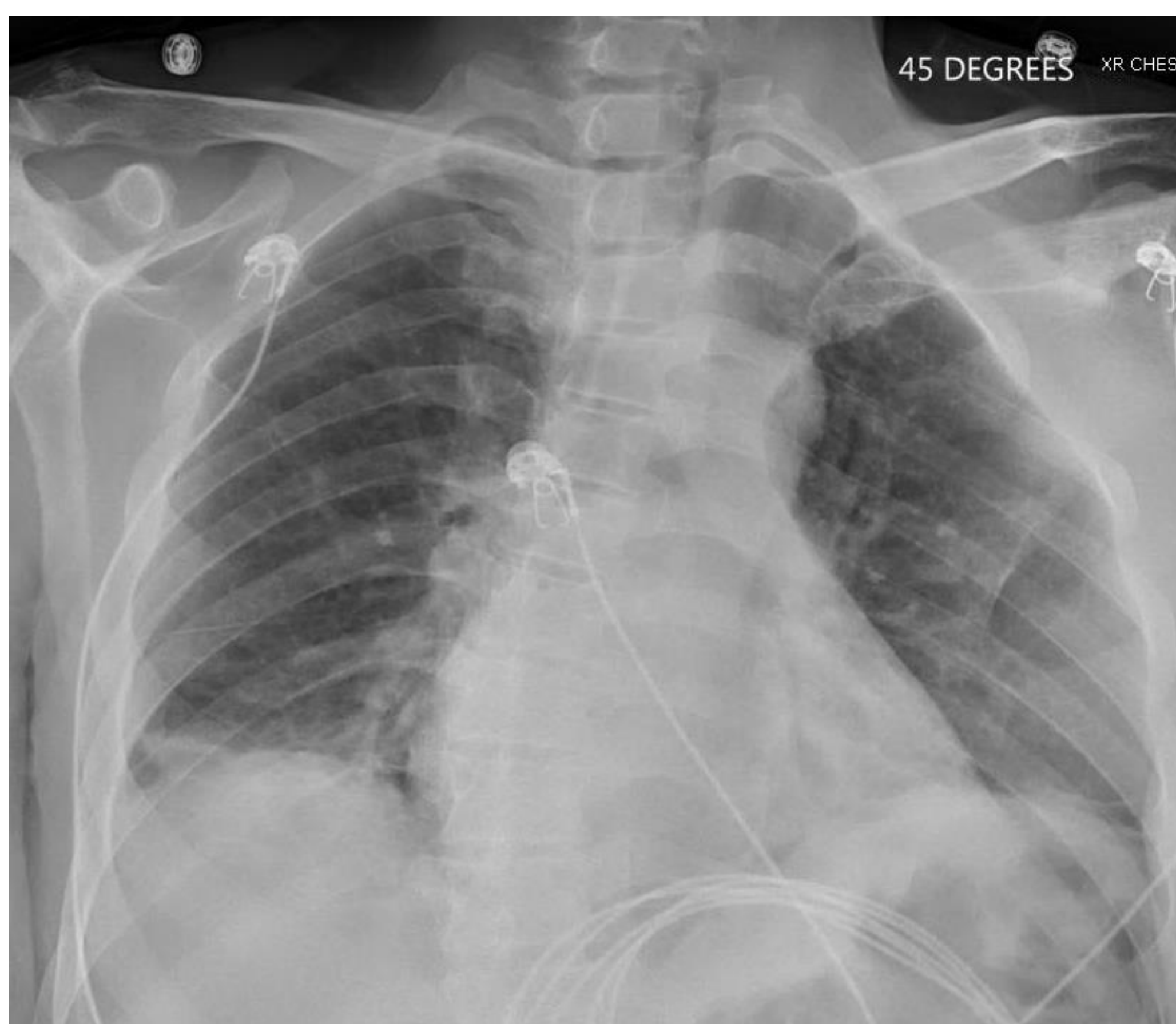


Figure 3. GlideScope® image demonstrating partial denture lodged in glottic inlet prior to removal.

Discussion

While providing obvious mastication benefits for those with missing teeth, dentures are not without their own range of problems. Given their smaller size, partial dentures can easily be dislodged posteriorly with swallowing and impact in the upper aerodigestive tract. In our case, the denture was precariously lodged in the glottic inlet. His poor mental status and diminished airway protective mechanisms may have actually prevented further disastrous dislodgment deeper into the airway.

Providers must have a high index of suspicion when evaluating for a possible aspiration event in those with compromised mental status. The careful history of a SLP provider and information from a family member provided important clues to the diagnosis in this patient. Flexible, awake laryngoscopy in these individuals is often difficult given their poor compliance with instructions during examination.

Video laryngoscopy can be a useful adjunct in operative airway assessment. The unique, sharp angulation of the blades allows minimal neck extension and reduces airway manipulation.³ We were unable to adequately visualize the larynx with traditional rigid laryngoscopes. Communication with the anesthesia team is also essential for a safe evaluation. Airway assessment is recommended before attempts at intubation to prevent possible dislodgement further into the airway.

Conclusions

The aspiration of dentures is a special type of foreign body which requires awareness by otolaryngologists. We recommend consideration of fixed, non-removable dental prosthetics in individuals with cognitive impairments.

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