

Mobile teeth: An underestimated risk factor for lung infections in critical care settings

Neglected teeth create the risk of aspiration of infected material when the oral cavity is instrumented in critical care settings. In a critical care unit, due to the severity of illness and urgency of intervention, attention to neglected dentition may either be missed or be given less attention. Unexplained failure of recovery and prolonged illness may originate from unrecognized aspiration of a tooth or fragments of dental calculus. We draw attention to this under-recognized hazard and outline a strategy for prevention.

Elderly individuals with comorbid conditions often have neglected teeth that are carious, mobile or both. This may happen because comorbid conditions impede the visual and cognitive faculties and motor skills needed to perform oral healthcare by one's self. Badly-broken teeth may be deemed hopeless and would be indicated for removal rather than restoration. Reasons for deferring and avoiding extraction of these teeth typically include economics, physical inability to reach a dentist, patients' wishes, limited motor abilities, comorbid conditions that complicate delivery of dental services, fear of dental procedures or other disorders that are of greater concern to patients and caregivers than oral health. As these teeth are often painless, they may be retained and remain mobile in the oral cavity indefinitely.

Pulmonary infections linked to dental causes in elderly individuals are conventionally thought to be due to dental abscesses that result in aspiration of pus found in the mouth. However, the role of mobile teeth and root stumps in the aetiopathogenesis of lung abscess may be underestimated.¹ Loose teeth are easily displaced out of their sockets by rapid intubation or by a hastily placed oropharyngeal airway or even an urgently positioned and manipulated laryngoscope blade. These acute situations happen in emergency departments in cases of respiratory depression or arrest and other critical care settings. Even well-intentioned daily oral care performed by nursing staff can potentially dislodge a loose tooth that is precariously attached to bone and gingiva. The resultant aspiration of tooth or root fragment can be

the cause of subsequent pulmonary suppuration. Very small fragments may be missed on plain film radiographs of the chest or abdomen.

Teeth that are mobile also tend to be uncomfortable while brushing and when neglected tend to collect food debris that calcifies over weeks to become hard calculus. Calculus, which is a calcified dental plaque, may be missed in a cursory oral examination since with staining by food and beverage it takes on the colour of teeth. Larger chunks of calculus are a threat to the health of the airway because they are friable and can be easily chipped off by a laryngoscope blade and carried into the respiratory tract with their content of periodontal pathogens.² Having a lower calcium content than dental enamel, a small portion of calculus is unlikely to be noticed in a plain radiograph.

It is unwise to screen for loose teeth in emergencies and waste critical moments that could prevent a dangerous desaturation or other condition necessitating urgent intervention. However, a rapid dental examination must be performed with documentation at the earliest available opportunity in critical care units. We recommend that at least a rudimentary periodic dental examination of elderly individuals be performed by their physicians during routine check-ups. This is especially relevant to patients in remote rural locations with no regular access to professional dental care. Such mobile teeth can be identified for removal.³ Medical students must liaise with dental professionals during their training to gain familiarity with the oral cavity and its structures. Periodic oral examinations by medical professionals are justified if they reduce avoidable morbidity, mortality and cost-to-the-state towards providing critical care.

Conflicts of interest. None declared

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