

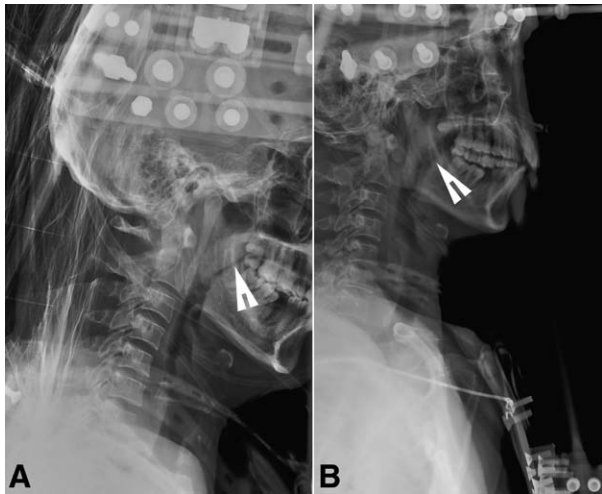
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Excessive Occipital-C1 Flexion via Halo Vest Immobilization

Oropharyngeal Space Reduction Leading to Difficult Airway Establishment

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THIS image demonstrates a complex C1 fracture reduced via excessive occipital-C1 flexion via halo vest immobilization (fig. A). Note arrow indicating slit-like oropharyngeal space originating below the soft palate. Halo vest immobilization occurred 30 min before emergent surgery for treatment of open femur fractures after a 15-foot fall. Shortly thereafter, the patient became tachypnic, dyspneic, and required supplemental oxygen to maintain oxygen saturations in the mid 90% range. Heart rate, blood pressure, skin examination, and A-a gradient were normal.

General anesthesia with laryngeal mask-assisted endotracheal tube placement was planned. Upon insertion, the laryngeal mask developed an extremely flexed position, producing clear bilateral breath sounds but minimal chest excursion with consistently increased end-tidal carbon dioxide. Routine measures to alleviate upper airway obstruction were ineffective. Fiberoptic examination revealed proximal laryngeal mask

angulation that encumbered bronchoscope advancement and revealed only soft tissue. Oxygen saturations remained 100% throughout. Given the brief predicted surgical time and otherwise normal vital signs, the laryngeal mask was left *in situ* for surgical duration. Postoperative halo vest immobilization realignment (fig. B) resulted in rapid dyspnea resolution with normal respiratory mechanics and ventilation. Note arrow indicating the expanded oropharyngeal space below the soft palate.

Intraoperative surgical fusion or halo vest immobilization has resulted in upper airway obstruction and difficulty in airway reestablishment.^{1,2} This case, however, illustrates the importance of preoperative halo vest immobilization and oropharyngeal space assessment before definitive airway management. Anesthetic management considerations may include preoperative halo vest repositioning, awake fiberoptic intubation, and postoperative intubation for 2–3 days.³

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