Neurologic Deterioration Associated with Airway Management in a Cervical Spine-injured Patient

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CERVICAL spinal injuries pose problems in airway management. Chin lift, jaw thrust, and direct laryngoscopy cause movement in the cervical spine, and other methods of tracheal intubation also could disturb the spine to some degree. Several authors recommend avoiding direct laryngoscopy in cases of known or suspected cervical spinal injury because they believe that the spinal movement associated with airway management could cause secondary neurologic injury. However, there have been no reports of new neurologic deficits resulting from airway maneuvers in a cervical spine-injured patient. We describe the case of a man with an unrecognized cervical spinal injury who became quadriplegic after bag-mask ventilation, direct laryngoscopy, and cricothyroidotomy. In addition, we discuss the detection of cervical spinal injuries and the potential effects of these injuries on the airway. Finally, we review the current literature on the risks of sec-

References

morbidity and the potential for disastrous outcome. None of the current studies include enough patients to assess the risk. It was estimated that a study would need approximately 1,800 patients to be certain that an airway maneuver did not double the neurologic complication rate associated with cervical spinal injury from 2–4% (P < 0.05, β = 0.2).19

To the authors’ knowledge, this is the first documented report of neurologic deterioration associated with airway management in a patient with a cervical spinal injury. Other cases have been mentioned in the literature, but without details.20,24 This case demonstrates a real, not just theoretic, risk of neurologic injury associated with unprotected airway maneuvers in patients with cervical spinal injuries. Head and neck stabilization might reduce the chance of injury secondary to cervical spinal movement during airway management, but this has not been proved. Stabilization efforts do not prevent spinal movement completely during direct laryngoscopy.22,25 Anesthesiologists should consider the possibility of secondary neurologic injury during the planning of airway management for traumatized patients and use their judgment about how to protect the spinal cord.

References


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