

Early and Late Intervention for Intubation-Related Laryngeal Injury



A study was conducted to determine if there were differences in functional outcomes between early and late intervention for intubation-related laryngeal injury.

Approximately 13 million to 20 million patients are intubated in the ICU every year. Clinical evidence shows that 57% of patients who are intubated for more than 12 hours develop acute laryngeal injury after extubation. Acute laryngeal injury is associated with worse patient-reported breathing and vocal symptoms compared to those without acute laryngeal injury.

Intubation injuries generally occur when the endotracheal tube is forced against the posterior glottis by the vector force of the tongue base. If left untreated, acute laryngeal injury can cause posterior glottic stenosis with restricted glottic mobility and impaired ventilation. Early intervention in laryngeal intubation is believed to disrupt the natural course of the disease and minimise fibrotic scar formation as well as long-term physiological impairment.

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This study included 29 patients with laryngeal injury from endotracheal intubation. Ten patients received early treatment, performed 45 days or less after intubation, while the remaining patients received late treatment, performed greater than 45 days after intubation. Study researchers compared the time to decannulation and the rate of decannulation among patients with early or late intervention for intubation-related posterior glottic injury. They also recorded the number of endoscopic and open reconstructive procedures that these patients underwent.

As part of the early intervention, patients received intravenous anaesthesia consisting of propofol combined with a muscle relaxant. Patients with late intervention underwent operative diagnostic endoscopy to facilitate anatomical staging of the airway disease. The most prevalent indication for intubation and mechanical ventilation for both groups (early and late treatment) was trauma.

Findings showed that compared to late intervention, early intervention for acute laryngeal injury after intubation was associated with fewer surgical procedures, shorter duration of tracheostomy dependence, a higher rate of decannulation, and restored laryngeal function without open reconstruction.

These findings suggest that early intervention in laryngeal injury may disrupt the natural course of the disease, minimise fibrotic scar formation and limit long-term physiological impairment. Study results may also be relevant for COVID-19 patients who require an extended duration of endotracheal intubation.

More focus should be placed on early diagnosis and intervention of acute airway injuries after intubation. There should also be more studies exploring the utility of screening protocols for high-risk patients with comorbid illness, prolonged intubation or extensive dyspnoea after extubation.

Source: [JAMA](#)

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