

Delayed Tracheostomy After Cervical Fusion Is Not Associated with Improved Outcomes: A TQIP Analysis

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Introduction

Patients with unstable cervical spine (C-spine) fractures are at significant risk of respiratory failure. There is no consensus on the optimal timing of tracheostomy in the setting of recent operative cervical fixation (OCF). This study evaluated the impact of tracheostomy timing on surgical site infections (SSI) for patients undergoing OCF and tracheostomy.

Methods

TQIP was used to identify patients with isolated cervical spine injuries who underwent OCF and tracheostomy between 2017 and 2019. Early tracheostomy (<7 days from OCF) was compared with delayed tracheostomy (≥ 7 days from OCF). Logistic regressions identified variables associated with SSI, morbidity, and mortality. Pearson correlations evaluated time to tracheostomy and length of stay (LOS).

Results

Of 1,438 patients included, 20 had SSI (1.4%). There was no difference in SSI between early versus delayed tracheostomy (1.6% vs 1.2%, $P=.5077$). Delayed tracheostomy was associated with increased ICU LOS (23.0 vs 17.0 days, $P<.0001$), ventilator days (19.0 vs 15.0, $P<.0001$), and hospital LOS (29.0 vs 22.0 days, $P<.0001$). Increased ICU LOS was associated

with SSI (OR 1.017; CI 0.999-1.032; $P=.0273$). Increased time to tracheostomy was associated with increased morbidity (OR 1.003; CI 1.002-1.004; $P<.0001$) on multivariable analysis. Time from OCF to tracheostomy correlated with ICU LOS ($r(1354)=.35$, $P<.0001$), ventilator days ($r(1312)=.25$, $P<.0001$), and hospital LOS ($r(1355)=.25$, $P<.0001$).

Conclusion

In this TQIP study, delayed tracheostomy after OCF was associated with longer ICU LOS and increased morbidity without increased SSI. This supports the TQIP best practice guidelines recommending that tracheostomy should not be delayed for concern of increased SSI risk.

Key Take-Away

Early tracheostomy is not associated with an increased risk of SSI in patients who have recently undergone operative cervical fixation