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Title: The association of frailty with morbidity following surgical tracheostomy

Body: Background: This study aimed to assess whether frailty (measured using the 5 item modified frailty index) was associated with increased morbidity following surgical tracheostomy.

Methods: A single-centre retrospective cohort study analysing a prospectively maintained database between 2022 – 2023. Univariable and multivariable regression was used to determine factors (including frailty) associated with increased morbidity.

Results: A total of 174 patients underwent surgical tracheostomy in the study period with 28 patients determined as frail (16.1%). Overall, 21 patients (12.1%) suffered a tracheostomy-specific complication. Multivariable regression found an association between frail patient status and increased tracheostomy specific complications (OR 4.09, 95% Confidence Interval [CI] 1.51 – 11.11; $p=0.006$) and longer hospital length of stay (LOS) (15.76 days, 95% CI 1.06 – 30.44; $p=0.036$).

Conclusion: Frailty was associated with increased morbidity and longer hospital stay following tracheostomy. Assessment of frailty may guide decision making and patient discussions when planning surgical tracheostomy.

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