

Effect of Operative Time on Complications following Thyroidectomy for Thyroid Cancer

Introduction: Literature on the importance of operative time on patient outcomes following thyroidectomy is sparse. Our study aims to investigate the association between longer operative time (OT) and postoperative complications in patients undergoing thyroidectomy for thyroid cancer.

Methods: This retrospective cohort study used the National Surgical Quality Improvement Program to analyze patients undergoing thyroidectomy for malignancy between 2005-2018. Chi-squared analysis, independent sample t-test, and logistic regression were used to assess the effects of variables on postoperative complications.

Results:

34,286 patients who underwent thyroidectomy for thyroid cancer were included. The median OT (133 minutes) was used to categorize patients into two cohorts: ≤ 133 and > 133 minutes. Male sex, younger age, higher ASA classification (III and IV), and races other than white and Black were associated with prolonged OT ($P < 0.001$). Comorbidities including obesity ($P < 0.001$), disseminated cancer ($P < 0.001$), weight loss ($P < 0.001$), transfusions ($P = 0.006$), dialysis dependence ($P = 0.023$), and contaminated wounds ($P < 0.001$) were correlated with longer OT. Multivariate analysis revealed prolonged OT was independently associated with increased risk of overall postoperative complications (OR 2.08, 95% CI 1.69-2.55, $P < 0.001$). Patients with prolonged OT also had higher risk of postoperative bleeding, ventilator use (> 48 hours), sepsis, pneumonia, reintubation, prolonged hospital stay (> 2 days), and unplanned admission.

Conclusion: This study found that certain demographic parameters and comorbidities are associated with longer OT, and prolonged OT is associated with increased rates of postoperative complications following thyroidectomy.

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