

Mortality and morbidity associated with PEG insertion in England between 2007 and 2019

Abstract

Introduction

Percutaneous endoscopic gastrostomy (PEG) is utilised in a variety of medical conditions to provide nutrition and administer medications directly into the stomach when the oral route is unavailable. We have examined the 30-day mortality and 7-day complications associated with PEG insertion at a national level.

Methodology

All patients who had a PEG inserted in England, from 2007 to 2019, were identified from Hospital Episode Statistics. The indications for PEG were identified using International Classification of Diseases-10th revision codes. 30-day mortality and complications within 7 days were examined. A multivariable logistic regression model was utilised to examine factors associated with 30-day mortality.

Results

87,682 patients had a PEG insertion over our study period: 58.2% male, median age 69 (IQR 57- 79) years. Stroke was the predominant indication (41.2%) followed by other neurological conditions (30.6%) and head and neck cancers (23.8%). Overall, 30-day mortality was 8.9% with a significant reduction in mortality over the study period, from 13.2% in 2007 to 5.3% in 2019. Factors associated with 30-day mortality included increased age (odds ratio for ≥ 82 years quintile 4.44 (95% CI 4.01-4.92)), PEG inserted during an emergency admission (2.10 (1.97-2.25)), increasing comorbidity (charlson comorbidity score ≥ 5 , 1.67 (1.53-1.82)), dementia (1.46 (1.26-1.71)) and oesophageal cancer (1.74 (1.50-2.03)). Female sex (0.81 (0.77-0.85)), the least deprived quintile (0.88 (0.81-0.95)) and PEG inserted in recent years (PEG inserted in 2019 0.44 (0.39-0.51)) were negatively associated with mortality. 7-day post PEG insertion complications included pneumonia (14.2%), perforation (1.7%), bleeding (1.6%), abdominal wall infection (1.2%) and related to sedation (0.1%).

Conclusion

30-day mortality following PEG insertion in England has fallen significantly over the last decade. This is likely related to better patient selection for PEG insertion with multidisciplinary nutrition team input. The most common complication following PEG insertion is pneumonia, which is likely to be reflective of the patient cohort that requires PEG and highlights need for preventative measures to reduce the risk of pneumonia.

