Ultrasonography for nasogastric tube placement verification: an additional reference

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Introduction

Nasogastric tube (NGT) insertion is a common procedure performed by community nurses but verifying correct placement can be challenging due to the limitations of conventional methods e.g. pH test is limited by its low sensitivity while X-ray scan is not readily available. Growing evidence suggests ultrasonography is useful in confirming correct tube placement and can avoid X-ray control. A local study was designed to compare the effectiveness of point-of-care ultrasonography (POCUS) with conventional tests in confirming NGT placement by Community Nurses of Pamela Youde Nethersole Eastern Hospital HKSAR, from 15/03/2018 to 30/11/2019.

Objectives

This study aimed to investigate the effectiveness of POCUS for verifying NGT placement and to explore the feasibility of using this imaging modality as the first-line reference for correct NGT placement verification. The validity of the gastric aspirate pH test was also evaluated.

Methodology

This was a single-centre, retrospective, single-blind study using a convenience sample of patients who required NGT placement in home settings. POCUS was performed by a trained community nurse, and the pH test was performed by the parent team after tube insertion. The results of the POCUS and pH test were compared.

Results

A total of 68 patients with an M/F sex ratio of 24/44 and a mean age of 82.13 ± 9.43 years were included. The sensitivity and specificity were found to be 95.45% and 100%, respectively, for POCUS. False negative results of the pH test lowered its sensitivity to 90.91% whilst its specificity was 100%. Conclusions: POCUS can provide accurate diagnostic imaging of NGT position and avoid X-ray controls. This imaging modality can complement pH testing as the first-line reference for correct NGT placement verification where X-ray scans are not readily available.