

ELECTROMAGNETIC GUIDED FEEDING TUBE INSERTION: ENHANCING PATIENT SAFETY

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Introduction: Insertion of nasoduodenal feeding tubes (NDFT) typically requires an abdominal radiograph (AR) for placement confirmation. A newly developed device, an electromagnetic guided (EMG) feeding tube, has recently challenged the need for radiographic confirmation of nasoduodenal feeding tubes.

Hypothesis: The purpose of this study is to compare the EMG and AR results regarding ND FT placement.

Methods: Medical surgical intensive care unit (ICU) patients requiring a NDFT insertion were eligible for the study. The electromagnetic feedings tubes were identical to the standard ND FT except for the electromagnetic tip of the guidewire. The electromagnetic insertion was tracked by a small receiver displayed on a bedside monitor. Three study nurses inserted the EMG NDFT and recorded the location of the distal tip according to the bedside display. AR were obtained following the feeding tube insertion. Demographic data were recorded.

Results: Two hundred electromagnetic NDFT insertions were attempted in ICU patients, 128 (64%) males and 72 (36%) females, with an average age 65 +1- 16 years. Ten

patients did not receive NDFT due to agitation or anatomical issues. Twenty-one patients had preexisting nasogastric or orogastric tubes and 134 (67%, 101 endotracheal and 34 tracheostomy) patients had an airway in place. The average time for nasoduodenal tube insertion was 30 + 1 - 17 minutes. Ten patients required repositioning of the ND FT during the insertion as the tube was tracking into the airway. None of the tubes were documented to be in the airway by abdominal radiograph. Compared to AR, EMG correctly documented distal feeding tube tip position in 167 (88%) of 190 patients. EMG correctly documented duodenal tip position in 148 (90%) of 164 patients and gastric position in 19 (73%) of 26 patients.

Conclusions: Compared to abdominal radiography, the position of, the EMG NDFT was correctly identified in 88% of the patients. One-hundred percent of feeding tubes were located in the duodenum or stomach and airway placement was avoided. Abdominal radiographic confirmation may not be required for electromagnetic guided NDFT placement that is intended to be placed in either the stomach or duodenum.