Evaluation Of Three Different Strategies For Post-Pyloric Placement Of Enteral Feeding Tubes

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INTRODUCTION: Enteral nutrition has many advantages for critically ill patients, but can be complicated by volume intolerance in those who are gastrically fed. Post pyloric placement of the distal end of the feeding tube is considered more advantageous because: 1) there is better success at reaching nutritional targets and they are reached sooner when feeding into duodenum versus gastric feeding, and 2) there is a decreased incidence of pneumonia. We evaluated three different strategies for post-pyloric placement of feeding tubes. In the first method, a standard feeding tube (Entriflex, Kendall Inc.) was placed blindly by two experienced clinicians (A.S., J.D.) using a standardized protocol. The second method involved tube placement assisted by an external magnet (MagnaFlow Tube, Arrow International Inc.). The third method was frictional placement, where small plastic tabs allow the tube to be captured by peristalsis and carried passively (Tiger Tube, Cook Inc).

METHODS: We prospectively evaluated the success in placing 20 Entriflex tubes, 15 MagnaFlow tubes and 10 Tiger Tubes. Success was determined by a radiograph showing the tip of the tube beyond the pylorus.

RESULTS: Thirteen of 20 Entriflex tubes (65%), ten of 15 MagnaFlow tubes (67%) and nine of 10 Tiger Tubes (90%) were successfully placed past the pylorus. The only Tiger Tube which did not traverse the pylorus was one in which initial gastric placement was not possible, such that all Tiger Tubes which were placed into the stomach were captured by peristalsis and carried beyond the pylorus. The final location of the distal tip of the tiger tube was farther beyond the pylorus than that of the Entriflex or MagnaFlow tubes, with a much greater proportion ending up in the jejunum (7 jejunal of 13 post pyloric entriflex tubes, 2 jejunal of 10 post-pyloric Magnaflow tubes, and 8 jejunal of 9 post pyloric Tiger Tubes). The average physician time was considerably less with the frictional feeding tube (<10 min for all tubes) versus the entriflex (25 min, range 6-45), the magnetically guided feeding tube (26 min, range 5-60 min). The only complication with any tube was minor nasal bleeding.

CONCLUSION: This prospective study suggests that the frictional feeding tube achieves a high success rate in post-pyloric placement and may show promise as a simple, relatively non-invasive method of bedside feeding tube placement.

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