An Evaluation of the Cortrak Enteral Access System in our Intensive Care

AM Dolan, C O’Hanlon, J O’Rourke
Beaumont Hospital, Beaumont, Dublin 9

Abstract
Appropriate nutrition is considered a cornerstone of Intensive care; however its successful initiation is frequently impeded by decreased gastric emptying secondary to opiates, sepsis, or ileus. The presence of a postpyloric feeding tube will guarantee delivery of calories while reducing the incidence of reflux and aspiration. Enteral nutrition is approximately 100% more efficient than parenteral nutrition. A nasojejunal tube may be placed blindly (success 15%), by direct vision with a gastroscope, or under fluoroscopic guidance in the X-ray department. This study examines the use of the Cortrak Enteral Access System (CEAS) in placement of nasojejunal tubes, a method facilitated by the use of an electromagnetic transfixed guide wire. A retrospective review was conducted to evaluate the effectiveness of the CEAS for establishing nasojejunal feeding in the Intensive Care Unit (ICU) between January and December 2010. Our results found that the CEAS was successful in positioning a nasojejunal tube in ten out of twelve patients (83% success rate). Successful placement was confirmed by portable abdominal / chest x-ray. Placement took an average of 30 minutes, and prokinetic agents were used to facilitate two placements. The duration of successful enteral nutrition varied from 2 to 15 days post placement. The CEAS is a simple bedside tool for placing postpyloric tubes. While there is a learning curve associated with its use, it may confer significant benefits to individual patients and also to those responsible for ever shrinking budgets.

Introduction
All patients expected to stay in the Intensive Care Unit (ICU) for greater than 3 days and who are unlikely to commence diet during this time should be considered for nutritional support. Catabolic and malnourished patients in particular should be considered for nutritional support, commencing within 24-48 hours of ICU admission. The placement of enteral nutrition is associated with its use, it may confer significant benefits to individual patients and also to those responsible for ever shrinking budgets.

Methods
This study comprised a retrospective analysis of NJT placement during 2009 and prospective analysis of patients in whom NJT placement was attempted during 2010 within the ICU. The Ethics Committee at our institution stated that this project could be regarded as an audit and in that case ethical approval does not apply. Data from 2008, and 2009 were extracted from the ICU audit, from individual medical records and from the department of nutrition and dietetics. The CEAS arrived in early 2010 and all patients who had attempted placement whether successful or not by three operators CEAS was successful in positioning a nasojejunal tube in ten out of twelve patients (83% success rate). Once in position, what is the most accurate method for verifying the exact position of the postpyloric tube? Practices will vary depending on the ICU. Following blind placement, auscultatory methods together with assessment of the ph of aspirated small bowel fluid and a positive snap are considered encouraging signs. However, unless the tube has been placed by endoscopy or with the aid of ultrasound, radiological confirmation of placement is almost always mandatory. This study examines the use of the Cortrak Enteral Access SystemTM (CEAS) in a magnetic Nasojejunal Tube (NJT) linked to a computerized system which provides a visual display of the NJT as it traverses the gastrointestinal tract. It is a bedside placement system which will facilitate placement and confirm the position of the NJT by means of a characteristic display printout. The policy adopted by our ICU was that all NJT be confirmed by portable chest/abdominal radiograph before initiation of feeding. This practice is also supported by the British Society of Gastroenterology, and National Patient Safety Authority in the UK.

Results
In 2008 and 2009 approximately 200 patients per year were fed parenterally within the ICU within a population of approximately 1800. Apart from cases where there was a clinical indication for parenteral nutrition such as short GUT syndrome, post-gastrointestinal surgery, failed external feeding was sited as the main reason for initiation of parenteral nutrition. In 2009 twenty four of the intensive care unit patients were fed via the nasojejunal route. Postpyloric tubes were placed by Endoscopy and Radiology departments within the hospital. This amounted to a total of 308 and 385 days in 2008 where parenteral nutrition was administered to patients who had failed to tolerate enteral nutrition. During 2010 the Cortrak NJT’s were successfully inserted into 10 of the 12 patients in whom it was attempted (83% success rate). Gastroparesis was sited as the main indication for positioning a NJT in 11 out 12 patients (91%) with regurgitation of feed being sited as the indication for positioning a NJT in only one patient.

Discussion
As stated previously the establishment of enteral nutrition is an extremely important aspect of each patients therapy while in the ICU. The benefits to patients themselves are multiple and include prevention of catabolism, maintenance of host's immune system and preservation of immune function. Enteric nutrition is associated with a reduction in bacterial translocation is feasible, reduced enterohepatic recirculation and intestinal bacterial overgrowth. Apart from the plethora of benefits to the patient, enteric nutrition is of benefit to the community as a whole, scarce resources. Our study has confirmed a saving of 4000 euro in seven patients. The evidence relating to cost effectiveness of the CEAS has been reported in other studies. A multidisciplinary nutritional care plan is in place within our ICU led and directed by our dieticians. All patients will have had a caloric requirement assessment following admission and enteral nutrition commenced as early as. Where gastric residual volumes are high prokinetic agents such as metoclopramide and erythromycin are used as recorded in 2 of our 12 patients. Failing this patients were considered for postpyloric placement of a NJT. A considerable amount of time and resources are required to transfer any critically ill patient to radiology for fluoroscopic placement.

Evaluation of the Cortrak Enteral Access System in our Intensive Care

An Evaluation of the Cortrak Enteral Access System in our Intensive Care

AM Dolan, C O’Hanlon, J O’Rourke
Beaumont Hospital, Beaumont, Dublin 9

Abstract
Appropriate nutrition is considered a cornerstone of Intensive care; however its successful initiation is frequently impeded by decreased gastric emptying secondary to opiates, sepsis, or ileus. The presence of a postpyloric feeding tube will guarantee delivery of calories while reducing the incidence of reflux and aspiration. Enteral nutrition is approximately 100% more efficient than parenteral nutrition. A nasojejunal tube may be placed blindly (success 15%), by direct vision with a gastroscope, or under fluoroscopic guidance in the X-ray department. This study examines the use of the Cortrak Enteral Access System (CEAS) in placement of nasojejunal tubes, a method facilitated by the use of an electromagnetic transfixed guide wire. A retrospective review was conducted to evaluate the effectiveness of the CEAS for establishing nasojejunal feeding in the Intensive Care Unit (ICU) between January and December 2010. Our results found that the CEAS was successful in positioning a nasojejunal tube in ten out of twelve patients (83% success rate). Successful placement was confirmed by portable abdominal / chest x-ray. Placement took an average of 30 minutes, and prokinetic agents were used to facilitate two placements. The duration of successful enteral nutrition varied from 2 to 15 days post placement. The CEAS is a simple bedside tool for placing postpyloric tubes. While there is a learning curve associated with its use, it may confer significant benefits to individual patients and also to those responsible for ever shrinking budgets.

Introduction
All patients expected to stay in the Intensive Care Unit (ICU) for greater than 3 days and who are unlikely to commence diet during this time should be considered for nutritional support. Catabolic and malnourished patients in particular should be considered for nutritional support, commencing within 24-48 hours of ICU admission. The placement of enteral nutrition is associated with its use, it may confer significant benefits to individual patients and also to those responsible for ever shrinking budgets.

Methods
This study comprised a retrospective analysis of NJT placement during 2009 and prospective analysis of patients in whom NJT placement was attempted during 2010 within the ICU. The Ethics Committee at our institution stated that this project could be regarded as an audit and in that case ethical approval does not apply. Data from 2008, and 2009 were extracted from the ICU audit, from individual medical records and from the department of nutrition and dietetics. The CEAS arrived in early 2010 and all patients who had attempted placement whether successful or not by three operators CEAS was successful in positioning a nasojejunal tube in ten out of twelve patients (83% success rate). Once in position, what is the most accurate method for verifying the exact position of the postpyloric tube? Practices will vary depending on the ICU. Following blind placement, auscultatory methods together with assessment of the ph of aspirated small bowel fluid and a positive snap are considered encouraging signs. However, unless the tube has been placed by endoscopy or with the aid of ultrasound, radiological confirmation of placement is almost always mandatory. This study examines the use of the Cortrak Enteral Access SystemTM (CEAS) in a magnetic Nasojejunal Tube (NJT) linked to a computerized system which provides a visual display of the NJT as it traverses the gastrointestinal tract. It is a bedside placement system which will facilitate placement and confirm the position of the NJT by means of a characteristic display printout. The policy adopted by our ICU was that all NJT be confirmed by portable chest/abdominal radiograph before initiation of feeding. This practice is also supported by the British Society of Gastroenterology, and National Patient Safety Authority in the UK.

Results
In 2008 and 2009 approximately 200 patients per year were fed parenterally within the ICU within a population of approximately 1800. Apart from cases where there was a clinical indication for parenteral nutrition such as short GUT syndrome, post-gastrointestinal surgery, failed external feeding was sited as the main reason for initiation of parenteral nutrition. In 2009 twenty four of the intensive care unit patients were fed via the nasojejunal route. Postpyloric tubes were placed by Endoscopy and Radiology departments within the hospital. This amounted to a total of 308 and 385 days in 2008 where parenteral nutrition was administered to patients who had failed to tolerate enteral nutrition. During 2010 the Cortrak NJT’s were successfully inserted into 10 of the 12 patients in whom it was attempted (83% success rate). Gastroparesis was sited as the main indication for positioning a NJT in 11 out 12 patients (91%) with regurgitation of feed being sited as the indication for positioning a NJT in only one patient.

Discussion
As stated previously the establishment of enteral nutrition is an extremely important aspect of each patients therapy while in the ICU. The benefits to patients themselves are multiple and include prevention of catabolism, maintenance of host's immune system and preservation of immune function. Enteric nutrition is associated with a reduction in bacterial translocation is feasible, reduced enterohepatic recirculation and intestinal bacterial overgrowth. Apart from the plethora of benefits to the patient, enteric nutrition is of benefit to the community as a whole, scarce resources. Our study has confirmed a saving of 4000 euro in seven patients. The evidence relating to cost effectiveness of the CEAS has been reported in other studies. A multidisciplinary nutritional care plan is in place within our ICU led and directed by our dieticians. All patients will have had a caloric requirement assessment following admission and enteral nutrition commenced as early as. Where gastric residual volumes are high prokinetic agents such as metoclopramide and erythromycin are used as recorded in 2 of our 12 patients. Failing this patients were considered for postpyloric placement of a NJT. A considerable amount of time and resources are required to transfer any critically ill patient to radiology for fluoroscopic placement.

Equally endoscopic placement of NJT’s can require considerable effort on the part of many staff. In this study we have shown the CEAS to have a high (83%) success rate in placing of NJT’s. While some will suggest that a confirmatory
An Evaluation of the Cortrak Enteral Access System in our Intensive Care

References