

Corpak with Cortrak

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Commercial Disclosures: No commercial affiliation

Background:

This study was carried out as an initiative to improve patient safety and overall patient outcomes by reducing the length of time needed to properly place Small Bowel Feeding Tubes (SBFT) and thus begin enteral nutrition earlier for critically ill patients. Enteral tube feeding was not being started as promptly as desired due to the length of time necessary to insert the Corpak (SBFT) tubes and validate the correct tube placement.

Cortrak is a real-time, computer-based system that uses electromagnetic technology to guide clinicians in the placement of nasoenteric feeding tubes. The device helps direct feeding tube placement by showing the relative location of the tube as it proceeds down the alimentary tract.

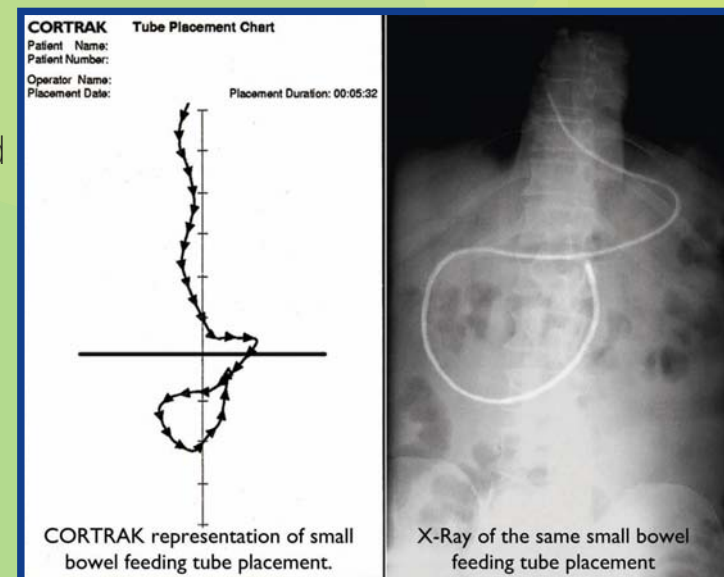


Objective:

To evaluate and validate the effectiveness of the Cortrak, a noninvasive device which aides in the bedside placement of small-bore feeding tubes into the small bowel. The researchers evaluated the time period between physician order and the initiation of enteral feeding, successful placement of the tube into the duodenum on the first placement attempt, cost savings and complications related to both methods of tube placement.

Method:

The researchers recruited 40 subjects from a convenience sample of patients in two separate ICU's. The Cortrak tube placement was done in conjunction with standard hospital protocol for small bowel feeding tube placement. Abdominal x-rays were used to confirm the placement of the tubes. Data was collected prospectively on 20 SBFT placements in ICU, where tubes were placed using standard protocol (control group) and on 20 SBFT placements in a different ICU where the Cortrak was used for tube placement (study group). The following variables were measured: (a) success rate of placement of the small bowel feeding tubes into the small bowel on the first attempt, (b) number of x-rays needed to confirm placement in the duodenum, (c) number of patients requiring fluoroscopy, (d) complications related to SBFT placement, and (e) the time from physician order to initiation of enteral feedings.



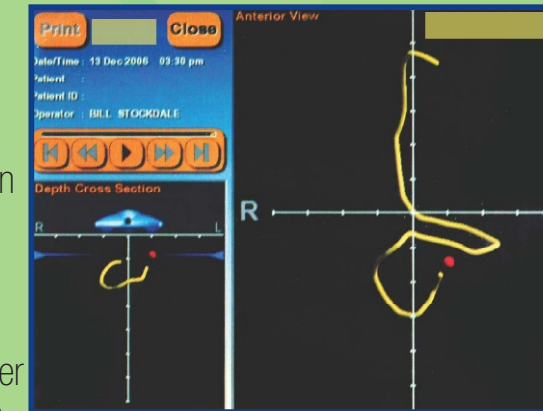
Results:

Data reveals that **7%** more x-rays were done in the control group. Fluoroscopy procedures were required in 45% of the patients in the control group in order to place the feeding tubes into the small bowel, only 10% of those in the intervention group required fluoroscopy.

A T-test for independent groups did not demonstrate a significant difference between the length of time from the physician's order to insert a feeding tube in order to initiate tube feeding and the time the tube feeding was begun ($t=1.40$; $p=.17$).

The mean feeding time for the experimental group, or the subjects where the Cortrak was used for the insertion of the Corpak tube, was .8194 days (19.66 hours). The mean feeding time for the control group was 1.1913 days (28.59) hours. This is a difference of 8.93 hours, meaning that patients whose tube was put down with the assistance of the Cortrak were able to start tube feeding over 8.5 hours earlier than the control group patients. Even though this did not demonstrate statistical significance, this is very important from a practical significance perspective.

The difference in the cost was **\$2700** for the experimental group compared to \$8100 for the control group. 18 out of 20 were not required to have the procedure done under fluoroscopy with use of Cortrak, as compared to 11 out of 20 for the control group. In relation to the overall costs, the total cost was **\$5,318 less** for the Cortrak group or \$316 less on average per patient, considering the cost of the fluoroscopy, the x-rays and tube cost.



	Standard Placement, n=20	Cortrak Placement, n=20
Time interval from MD order to initiation of feeding	28.6 hours	19.7 hours
Duodenal placement on first attempt	6	12
Average number of X-rays needed per patient	1.55	1.45
Number of Fluoroscopy procedures	9	2
Complications	0	0
Average cost per patient	\$678	\$362

Conclusions:

This study validates that the use of the Cortrak device for placing small bowel feeding tubes improves the efficiency and lessens the discomfort of the insertion procedure. The Cortrak device helped reduce the time from physician order for tube insertion to the initiation of feeding. The total overall cost of tube placement was also reduced.



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SP-21 - Corpak with Cortrak

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Introduction: Background: This study was carried out as an initiative to improve patient safety and overall patient outcomes by reducing the length of time needed to properly place Small Bowel Feeding Tubes (SBFT) and thus begin enteral nutrition earlier for critically ill patients. Objective: To evaluate and validate the effectiveness of the Cortrak, a noninvasive device which aides in the bedside placement of small-bore feeding tubes into the small bowel. The researchers evaluated the time period between physician order and the initiation of enteral feeding, successful placement of the tube into the duodenum on the first placement attempt, cost savings and complications related to both methods of tube placement.

Methods: The researchers recruited 37 subjects from a convenience sample of patients in two separate ICU's. The Cortrak tube placement was done in conjunction with standard hospital protocol for small bowel feeding tube placement. Abdominal x-rays were used to confirm the placement of the tubes. Data was collected prospectively on 18 SBFT placements in ICU, where tubes were placed using standard protocol (control group) and on 19 SBFT placements in a different ICU where the Cortrak was used for tube placement (study group). The following variables were measured: (a) success rate of placement of the small bowel feeding tubes into the small bowel on the first attempt, (b) number of x-rays needed to confirm placement in the duodenum, (c) number of patients requiring fluoroscopy, (d) complications related to SBFT placement, and (e) the time from physician order to initiation of enteral feedings.

Results: Data reveals that 36% more x-rays were done in the control group. Fluoroscopy procedures were required in 44% of the patients in the control group in order to place the feeding tubes into the small bowel, only 5% of those in the intervention group required fluoroscopy. The patients in the intervention group were fed on average 9 hours and 36 minutes earlier than those patients in the control group. **Conclusions:** This study validates that the use of the Cortrak device for placing small bowel feeding tubes improves the efficiency and lessens the discomfort of the insertion procedure. The Cortrak device helped reduce the time from physician order for tube insertion to the initiation of feeding. The total overall cost of tube placement was also reduced.

	Standard Placement n=18	Cortrak Placement N=19
Time interval from MD order to initiation of feeding	29.0 hours	19.4 hours
Duodenal placement on 1st attempt	6	12
Avg. # of X-rays needed / patient	1.67	1.35
Complications	0	0
Avg. cost/patient	\$596	\$245