



Outcomes and satisfaction in pediatric patients with Chait cecostomy tubes

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Summary

Introduction

Patients with spina bifida and other spinal dysraphisms commonly suffer from fecal incontinence and constipation, which can be treated with antegrade continence enemas. Currently, information regarding outcomes and satisfaction in children who have Chait cecostomy tubes is lacking. The aim of our study was to evaluate the effectiveness of Chait cecostomy tubes in management of constipation in children with spinal dysraphisms.

Materials and methods

A questionnaire was completed by patients and/or their families during office visits at the University of Iowa or Nationwide Children's Hospital during follow-up pediatric urology office visits. Two study groups completed the questionnaires: 1) Patients with neurogenic bowels who had a cecostomy tube in place (CT) and 2) patients with neurogenic bowels with no cecostomy tube (NCT). The survey used Likert scaled and nonrated questions to assess demographics, bowel continence, and satisfaction.

Results

A total of 86 patients completed the questionnaire: 53 CT patients and 33 NCT patients. CT patients rated the effectiveness of their cecostomy tube in managing their constipation significantly higher than the NCT group rated the effectiveness of their conventional bowel management methods ($p < 0.001$). Within the CT group, 48% of patients had complete or near complete continence, 40% had partial fecal incontinence, while only 12% remained incontinent. Of the CT respondents, 88% were overall satisfied with the cecostomy tube (Figure) and 92% would have the cecostomy tube placed again. In addition, hygiene, independence, and social confidence were significantly improved compared with baseline. Complications associated with the Chait tube included granulation tissue that required treatment (60%) and pain with irrigation (24%).

Conclusions

CT patients reported significantly improved constipation management, fecal continence, and improved quality of life compared with NCT patients. Our pilot study demonstrates that the Chait cecostomy tube is a well-tolerated, effective means for treating constipation and achieving fecal continence with minimal side effects in patients with neurogenic bowels.

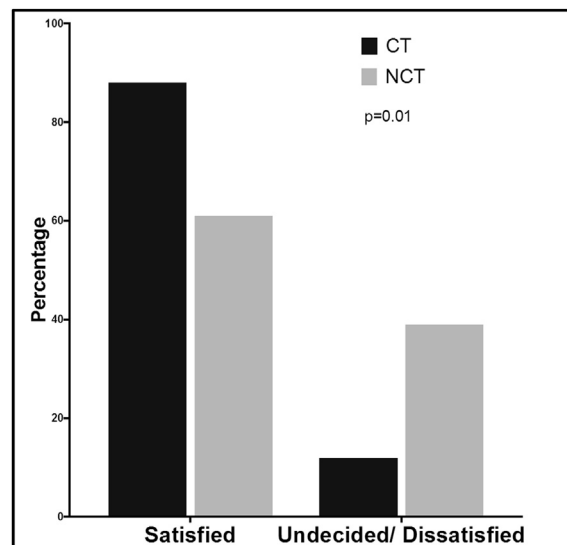


Figure Overall satisfaction with current bowel management methods.

Introduction

In 1990, Malone et al. first described their experience using the appendix as a conduit to perform antegrade enemas [1]. Children with neuropathic and structural abnormalities of the colon and rectum, secondary to disorders such as spinal dysraphisms, anorectal malformation, and cloacal malformations, have benefited immensely from this procedure by reducing and/or eliminating fecal soiling and constipation. Multiple studies have reported successful outcomes and an improved quality of life for children who have undergone the MACE procedure [2–4]. In addition, there has been a similar improvement in quality of life for the families of these children. However, the MACE is not without drawbacks, as complications associated with this procedure include stomal stenosis, stomal bleeding, stool leakage, wound infection, prolapse of the stoma, and appendiceal necrosis [5–8] (Fig. 1).

In 1996 Shandling introduced the Chait cecostomy tube [9]. While the MACE principle of antegrade enema administration remained the same, the Chait tube uses a silastic pigtail tube with an extracorporeal trapdoor as the conduit to perform colonic irrigation [10]. To date, there are limited data on the success rates, quality of life, and complications in patients who have been managed with Chait cecostomy tube placement.

Our institutions primarily use Chait cecostomy tubes in patients with neurogenic bowels who are interested in performing antegrade enemas for the treatment of constipation and fecal incontinence. We believe that this approach is successful in treating these patients and that it results in an improved quality of life for these patients and their families. Our primary study aims were to evaluate the effectiveness of Chait cecostomy tubes in management of neurogenic constipation and to determine the effect that this procedure had on quality of life. Additionally, we sought to establish the complications that occur secondary

to Chait cecostomy tube placement. We hypothesized that, compared with before cecostomy placement and with other patients with neurogenic bowels who have not had cecostomy tube placement, patients with Chait tubes have improved constipation, fecal continence, and quality of life, with a low complication rate.

Materials and methods

An IRB approved questionnaire (see Appendix) was completed by patients and/or their families during office visits at the University of Iowa or Nationwide Children's Hospital during follow-up pediatric urology office visits. Two study groups completed the questionnaires: 1) patients with neurogenic bowels who had a cecostomy tube in place (CT) and 2) patients with neurogenic bowels with no cecostomy tube (NCT). The survey used Likert scaled and nonrated questions to assess bowel continence and satisfaction. Questions on the survey queried overall satisfaction, social confidence, personal hygiene, independence, esthetic of button, irrigation characteristics, level of fecal continence, and pain associated with the tube. Demographic data on the patient and the family were also collected and nonrated questions were used to assess procedure specifics, ambulatory status, and prior medical treatment of fecal incontinence. A retrospective chart review was also performed to evaluate complications related to the Chait cecostomy tube. Likert responses were dichotomized into either positive or neutral/negative responses. Data were analyzed using logistic regression and bivariate analysis using Statistical Analysis System (SAS) 9.4.

Prior to undergoing cecostomy tube placement, all patients and their families had an extensive pre-operative discussion regarding peri-operative and post-operative expectations. Each patient and their families were given educational materials explaining the procedure and demonstrating the usage of the cecostomy tube from the American Pediatric Surgical Nurses Association website [11].

Ethical approval

The study was granted internal review board approval: IRB ID# 201405745.

Results

As seen in Table 1, a total of 86 patients completed the questionnaire. This included 53 CT patients and 33 NCT patients. The CT group included 25 males, with a mean age of 11 years (5–33). The NCT group included 13 males with a mean age of 13.6 years (3–42). When evaluating the entire study cohort, 80% had spinal bifida, 62% required mobility assistance devices, and 87% were Caucasian. As depicted in Table 2, the majority of patients (71%) had their cecostomy tube placed by 5 years of age and 81% had their tube in place for more than 1 year at the time of questionnaire completion. In addition, it seemed to take more than a month in 47% of patients to perfect the irrigation

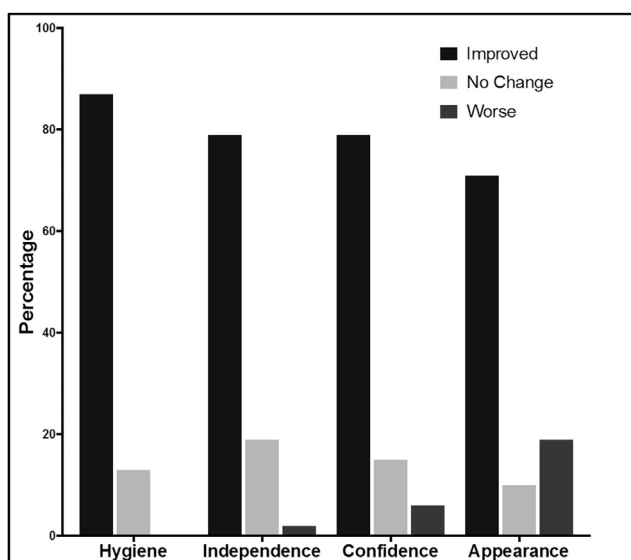


Figure 1 Quality of life measures after cecostomy tube placement. All categories were significantly positive responses ($p < 0.05$).

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