



Long Term Outcomes of the Antegrade Colonic Enema for Stooling Dysfunction in Children

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Introduction

Severe constipation and encopresis or soiling are significant problems for a number of children, and may lead to physical, social, and psychological issues if they persist. A fair proportion can be treated through medical management including laxatives and dietary modification, but there is a cohort of patients whose problems remain refractory and then surgical options are considered. The Antegrade Colonic Enema (ACE) was devised in the early 1990s as a treatment option. This procedure creates an ostomy in the umbilicus in order to wash out the colon. The purpose of this study is to assess the long-term outcomes in children following the ACE procedure.

Methods

We reviewed all patients that underwent the open and laparoscopic ACE procedure between 1999 and 2013 at a single institution. Data collected included diagnosis and indication for surgery, change in bowel movements and soiling patterns before and after surgery, admissions for clean-outs before and after surgery, flush therapy and changes to regimen, and long term complications. Comparative data was analyzed using the Fischer's exact test, Mann-Whitney U test, and the Student's T-test.

Results

A total of 42 patients were found who had complete charts. The mean age at surgery was 10 years, with 54.8% male. Encopresis or soiling was the indication in 56% of cases. Patients suffered for a mean duration of almost 7.5 years prior to surgery, with over half having symptoms since birth. The appendix was used as conduit in 90% of cases, and a majority were placed in the umbilicus, with over 50% performed laparoscopically. Over an average follow up of 4.5 years, 33 (79%) of the children had improvement in their bowel regimens. 8/42 (19%) were weaned off the ACE and continued to have normal BMs without it. All cases of Hirschsprungs, functional constipation and spina bifida were successful while success rates varied for other diseases such as slow transit constipation (60%), imperforate anus (50%), and cerebral palsy (33%).

Overall Outcome	Before (n=42)	After (n=42)
Soiling	33/42 (78.59%)	2/42 (4.76%) P<.001
Avg # BMs/week	10.49	5.97 P=.021
Admission for impaction	22/42 (52.38%)	8/42 (19.05%) P=.003

High volume flushes (greater than 250 mL solution) had significant improvements in soiling (p<.001), average number of BMs/week (p=.032) and admission for impaction (p=0.25). We found no statistical significance between once daily and twice daily flushes.

Conclusions

We found the ACE procedure to have a high rate of success in reducing soiling, constipation, and need for disimpaction. Further refinement of the selection criteria would increase the success. Complications were minor and well tolerated. Enema fluid changes were very frequent and these data will be used to improve family discussion and satisfaction. This procedure should be part of a comprehensive treatment plan for encopresis and constipation in children.