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Are the long-term results of the transanal pull-through equal to those of the transabdominal pull-through? A comparison of the 2 approaches for Hirschsprung disease

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Abstract

Purpose: The transanal endorectal pull-through (TERPT) is becoming the most popular procedure in the treatment of Hirschsprung disease (HD), but overstretching of the anal sphincters remains a critical issue that may impact the continence. This study examined the long-term outcome of TERPT versus conventional transabdominal (ABD) pull-through for HD.

Methods: Records of 41 patients more than 3 years old who underwent a pull-through for HD (TERPT, n = 20; ABD, n = 21) were reviewed, and their families were thoroughly interviewed and scored via a 15-item post–pull-through long-term outcome questionnaire. Patients were operated on between the years 1995 and 2003. During this time, our group transitioned from the ABD to the TERPT technique. Total scoring ranged from 0 to 40: 0 to 10, excellent; 11 to 20 good; 21 to 30 fair; 31 to 40 poor. A 2-tailed Student *t* test, analysis of covariance, as well as logistic and linear regression were used to analyze the collected data with confidence interval higher than 95%.

Results: Overall scores were similar. However, continence score was significantly better in the ABD group, and the stool pattern score was better in the TERPT group. A significant difference in age at interview between the 2 groups was noted; we therefore reanalyzed the data controlling for age, and this showed that age did not significantly affect the long-term scoring outcome between groups.

Conclusion: Our long-term study showed significantly better (2-fold) results regarding the continence score for the abdominal approach compared with the transanal pull-through. The stool pattern and enterocolitis scores were somewhat better for the TERPT group. These findings raise an important issue about the current surgical management of HD; however, more cases will need to be studied before a definitive conclusion can be drawn.

Traditionally, treatment of Hirschsprung disease (HD) had consisted of a colostomy at diagnosis followed by one of a variety of pull-through procedures later on [1]. Over the past decade, an evolution in the surgical management of HD has occurred. The previous gold standard of multistaged procedures with a preliminary stoma was replaced by one stage pull-through in many centers worldwide with results as favorable as multistaged procedures [2-4], and there may be a cost advantage as well [3]. More recently, minimally invasive

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procedures for pull-through have become popular; these have consisted of pull-throughs using laparoscopic abdominal and pelvic mobilization of the rectum and colon [5].

De la Torre-Mondragon and Ortega [6] first described the exclusive transanal endorectal pull-through (TERPT) technique in 1998 and were followed by Albanese et al [7] and Langer et al [8] in 1999. This may not include any intraabdominal or pelvic dissection, and may not require laparotomy or laparoscopy [9]. The risks of contamination and adhesion formation are minimal; the procedure does not damage the pelvic structures, it is not expensive, and it has the best cosmetic results.

Recently, TERPT has become the most popular procedure for the treatment of HD, but overstretching of the internal anal sphincter remains a critical issue, which may impact the long-term continence outcome. Because TERPT is a relatively new procedure, to our knowledge, there is no single report in the literature that addresses the long-term results of this procedure and compares these to other pull-through approaches. This study represents the first report of the long-term outcome of TERPT and compares these results with the conventional transabdominal (ABD) pull-through results.

1. Methods

From 1995 to 2003, 124 HD cases were treated at the CS Mott's Children Hospital, University of Michigan. The study protocol was fully approved by our hospital Institutional Review Board (IRB approval number: HUM00000592). During that time, our group transitioned from the ABD to the TERPT technique. Patients who

Table 1 Telephone questionnaire scores for patients older than 3 years

Study no.		Patient initials:	Reg #:	
No.	Question	Answer	Points	Score
1	Frequency of defecation:	Only with enema	4	
		Only with suppository	3	
		Every 3 d or more but spontaneous	2	
		Every 1-2 d	1	
		Normal (1-2/d)	0	
		Often (3-5/d)	1	
		6-7/d	2	
		8 or more movements/d	3	
2	Stool consistency	Hard	1	
		Normal	0	
		Loose	1	
		Liquid	2	
3	Stool odor	Normal odor	0	
		Offensive odor	1	
4	Is he/she fully continent?	Yes	0	
		Partially (occasional accidents)	2	
		Not continent	3	
5	Requires diapers:	None	0	
		Night or activity	1	
		Continuously	3	
6	Soiling	None	0	
		Occasional (1-3 times/d)	1	
		Often (4-6 times/d)	2	
		Permanent (more than 6 times/d)	3	
7	Time of soiling	None	0	
		At night or activity	1	
		At day and night	2	
8	Urgency period: A—at day	Normal (min)	0	
		Short (s)	2	
		Absent	3	
	B—at night	Normal (min)	0	
		Short (s)	1	
		Absent	2	
9	Sense of fullness and evacuation after defecation	Fullness and full evacuation	0	
		Fullness but partial evacuation	1	
		Absent sense of fullness	2	
10	Loss of stool during coughing or crying:	No	0	
		Gas	1	
		Liquid	2	
		Solid	3	
11	Need for medical therapy to control stooling:	No	0	
		Long period but finally weaned off	1	
		Occasionally	2	
		Always	3	
12	Distension	No	0	
		Mild	1	
		Moderate to severe	2	
13	Recurrent attacks of enterocolitis:	None	0	
		1-3 attacks	1	
		4-6 attacks	2	
		More than 6 attacks	3	
14	When was their last attack of HAEC?	None	0	
		36 mo or less postoperative	1	
		More than 36 mo postoperative	2	
15	For how long since they have been on medications postoperatively?	Less than 1 mo	0	
		1-18 mo	1	
		More than 18 mo	2	

HAEC, Hirschprung-associated enterocolitis.