

ORIGINAL ARTICLE

Post-operative Advantages of Transanal Endo-rectal Pull Through (TERPT) over Swenson's Procedure in Terms of General Surgical Complications

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Abstract:

Popular Swenson's pull through is still the most commonly practiced 'Gold Standard' of operative treatment for rectosigmoid Hirschsprung's disease. But minimally invasive transanal endo-rectal pull through (TERPT) is now being increasingly practiced worldwide for its treatment in many centres. Here experiences at Dhaka Shishu Hospital regarding the post-operative advantages of TERPT over Swenson's procedure are compared in terms of three general surgical complications, namely, urinary voiding dysfunction, wound sepsis and anastomotic stenosis. It is a prospective study during January 2000 to December 2001 on 32 (age, body weight, resected rectosigmoid length and follow-up duration matched) biopsy confirmed patients of rectosigmoid Hirschsprung's disease. The patients were divided into two Groups: Group A (n = 16) and Group B (n = 16) who under went TERPT and Swenson's pull through respectively. χ^2 (with Yate's correction) test was used for statistical analysis. In Group A (TERPT) the post-operative urinary voiding dysfunction (retention/incontinence), wound sepsis and anastomotic stenosis were significantly lesser than the Group B (Swenson's). Through this short term post-operative comparative study, TERPT was found to be more advantageous than the Swenson's pull through procedure in terms of three general surgical post-operative complications.

Introduction:

Hirschsprung's disease is recognized as the commonest cause of neonatal intestinal obstruction¹. In 90% cases, it involves the

recto-sigmoid region². Pull through operations devised by Swenson, Duhamel and Soave have been regarded as the 'Gold Standard' of operative treatment for Hirschsprung's disease. Though each of these procedures has the advantages and disadvantages of its own, none of the procedures described for definitive treatment of Hirschsprung's disease could achieve perfect functional result³.

Transanal endo-rectal pull through (TERPT) is a minimally invasive technical modification of Soave (endorectal) pull through operation where entire mucosectomy procedure is done through perineal approach without laparotomy or laparoscopy. Like Soave operation, TERPT

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does not interfere with the pelvic nerves and viscera. By TERPT, approximately 15 cm mucosal tube can be prolapsed through anus without laparoscopy⁴. Now it is being increasingly practiced worldwide for the treatment of recto-sigmoid Hirschsprung's disease with favourable recommendations^{3,4,6}.

At Dhaka Shishu Hospital, TERPT has been in practice since year 2000. As a new operative procedure, its safety margin needs careful study in every setting. Therefore, to show the post-operative advantages of TERPT over Swenson's pull through operation,

Materials and method:

It was a prospective study done at Dhaka Shishu Hospital during January 2000 to December 2001. Each patient was followed up for six months after operation. Total 32 biopsy confirmed rectosigmoid Hirschsprung's disease patients were selected in such a way that their mean age, body weight, resected rectosigmoid length and follow-up duration matched well for this comparative study.

They were divided into two groups:

Table-I: Post pull through urinary retention/incontinence in two groups of patients

Groups	Urinary retention/incontinence		Total number of patients	p value
	Present	Absent		
A	00	16	16	< 0.05
B	01	15	16	

comparative experience of these two procedures in terms of three post-operative

Group A (n = 16) under went TERPT and designated as study group.

Table-II: Post pull through wound sepsis in two groups of patients

Groups	Post pull through wound sepsis		Total number of patients	p value
	Present	Absent		
A	00	16	16	< 0.001
B	03	13	16	

general surgical complications namely, urinary voiding dysfunction (retention/incontinence), wound sepsis and anastomotic stenosis in short term follow-up in detailed here.

Group B (n = 16) underwent Swenson's pull through operation and designated as control group.

Parameters like urinary voiding dysfunction

Table-III: Post-pull through anastomotic stenosis in two groups of patients

Groups	Post-pull through anastomotic stenosis		Total number of patients	p value
	Present	Absent		
A	1	15	16	< 0.05
B	2	14	16	

(retention/incontinence), wound sepsis and anastomotic stenosis were defined qualitatively in terms of their presence or absence.

χ^2 (with Yate's correction) test was used for statistical analysis.

Results:

Table-I shows, among total 32 patients only one patient (3.12%) in group-B developed post-pull through urinary retention and incontinence. No patient after TERPT developed any urinary voiding dysfunction. This difference was significant ($p < 0.05$).

Three (18.25%) patients in group-B developed abdominal wound sepsis, but none in group-A. The difference was also highly significant ($p < 0.001$) (Table-II).

One (6.25%) patient in group-A and two (12.50%) patients in group-B developed post-pull through anastomotic stenosis. Here also the difference was significant ($p < 0.05$) (Table-III).

Discussion:

The patients who developed post pull through urinary retention/incontinence after Swenson's operation did not improve in his urinary function even after six months follow up period, whereas an American study⁵ showed that urinary voiding dysfunction was mostly reversible within months of operation but it may even take 10 years. So, it can not be categorically predicted the ultimate urinary function of patient from this short-term follow up.

Only 18.25% patients in controls developed abdominal wound sepsis, but no patient in the

study group developed anastomotic wound sepsis. Protective colostomy and gut preparation probably played important role here. An extra-laparotomy wound in Swenson's pull through operation always bears the risk of post-operative complications like- wound sepsis, delayed wound healing and even partial or complete wound dehiscence, in addition to the usual complications of scar (pain, itch, keloid) tissue after normal healing.

In this series, 6.25% patient in study group and 12.50% in controls developed post pull through anastomotic stenosis.

In the single case of anastomotic stenosis after TERPT, the poor rural mother failed to attend the routine follow up clinic for six weeks and did not initiate calibration schedule. At Minnesota⁶, one (4%) out of 25 patients; in Missouri⁷, eight (53%) out of 15 patients; and in California⁴ one (9%) out of 11 patients, developed post pull through anastomotic stenosis after TERPT which conform to this study result.

This limited comparative study with small number of rectosigmoid Hirschsprung's disease patients revalidated the post-operative advantages of TERPT over Swenson's pull through in terms of post-operative general surgical complications. More follow up studies will be required to evaluate the ultimate operative success of TERPT in terms of post-operative morbidities.

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