

OUTCOME OF FECAL CONTINENCE AFTER PURE TRANS-ANAL PULL THROUGH VERSUS LAPAROSCOPIC ASSISTED IN MANAGEMENT OF HIRSCHSPRUNG'S DISEASE

By

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ABSTRACT

Background: Several operative techniques have been developed for the treatment of Hirschsprung's disease (HD) in the past decades. One-stage trans-anal pull-through (TAPT) was first performed in 1998.

Objectives: To evaluate fecal continence after laparoscopic assisted and trans-anal endo-rectal pull-through (TERPT) for recto-sigmoid Hirschsprung's disease (HSD).

Patients and Methods: This prospective study was performed on 40 pediatric patients with Hirschsprung's disease from July 2013 to July 2016 at Al-Azhar University Hospitals. The patients were divided into two equal groups: group (A) underwent laparoscopic assisted trans-anal endo-rectal pull-through, and group (B) underwent pure trans-anal endo-rectal pull-through (TERPT). Demographic, clinical data, preoperative investigations, operative records, postoperative outcome were studied. A continence evaluation questionnaire (CEQ, max score = 10) assessing frequency of motions, severity of staining, severity of perianal erosions, anal shape, and requirement for medications was used. Severity of staining was graded as none = 2, occasional = 1.5, often = 1, and always = 0. Electromyogram (EMG) and magnetic resonance imaging (MRI) were also used in follow-up.

Results: After one year of follow up , group A, continence score was normal in 10 (50%), good in 9 (45 %), and fair in 1 (5%); while group B, continence score was normal in 5 (25 %), good in 14 (70%), and fair in 1 (5%). However, staining/soiling in group A was present in 2(occasional staining); while group B, staining/soiling was present in 2(occasional staining). Statistically significant difference was found between groups according to continence score after 1 month and 6 months, but no statistical significance clinically after 12 months.

Conclusion: Laparoscopically assisted trans-anal endo-rectal pull through was less invasive and can provide a better clinical outcome compared with trans-anal endo-rectal pull through as regard fecal continence and stooling function.

Key words: Fecal continence, Hirschsprung's disease, laparoscopy and trans-anal endo-rectal pull-through.

INTRODUCTION

There has been a major development in the surgical treatment of classic segment Hirschsprung's disease after the introduction of the one-stage trans-anal endo-rectal pull-through. Previous to this procedure, the most commonly used pull-through techniques were the Swenson, Soave or Duhamel pull through (De La Torre and Langer, 2010).

In the 90s, two major new approaches were developed, the laparoscopic approach in which the transition zone can be identified, biopsies taken and the rectum and sigmoid mobilized before pull-through (Georgeson et al., 1999). The other technique is the complete trans-anal endo-rectal pull through introduced by de La Torre and Langer (De La Torre and Ortega, 1998 and Langer et al., 1999). Both techniques have proven to be preferable to the open techniques (Visser et al., 2010 and Langer et al., 2012). Trans-anal endo-rectal pull-through (TERPT) with or without laparoscopic assistance for HD has been widely applied as it has a low degree of invasiveness (Kohnno et al., 2009).

It is unclear whether laparoscopic-assisted transanal pull-through (LATP) or complete transanal pull-through (CTP) is superior for the surgical management of Hirschsprung's disease (Guerra et al., 2016).

We reported our comparison of fecal continence after laparoscopic assisted endo-rectal pull through and trans-anal endo-rectal pull through using not only a clinical evaluation method, but also using some investigatory tools including electromyography and also MRI.

PATIENTS AND METHODS

This prospective comparative randomized study was conducted on 40 patients with Hirschsprung's Disease at Pediatric Surgery Department, Al-Azhar University Hospitals, Cairo, Egypt in the period between July 2013 to July 2016 were listed and evaluated. With the approval of our institutional ethical committee, written informed consents were obtained from all patients to be included in this study after explanation of disease nature and different methods of treatment. Randomization was achieved through sealed envelopes that were opened in the operating room. Patients were divided into two equal groups: group (A) with laparoscopic assisted trans-anal endo-rectal pull through, and group (B) with pure trans-anal endo-rectal pull-through.

Inclusion criteria:

- 1- Histopathological documented Hirschsprung's disease.
- 2- Disease was confined to recto-sigmoid.
- 3- Absence of huge proximal colonic dilation.

Exclusion criteria:

- 1- Previous colorectal surgery other than laparoscopic leveling and rectal biopsies.
- 2- Associated congenital syndromes, e. g. Down syndrome.
- 3- Neurological problems, e. g. Meningomyelocoele.

Preoperative Assessment:

1- Full clinical history: All cases were presented with chronic constipation and abdominal distension. They had history of

delayed passage of meconium (more than 48 hours).

2-Clinical examination included general condition, weight, and abdominal examination: abdominal distension, palpable colon, and rectal examination (presence of fecal matter, gush of stools, anal tightness and sphincter state).

3- Laboratory tests: Routine preoperative laboratories: CBC, coagulation profile (PT, PTT, and INR), liver and renal function tests (AST, ALT, albumin, and Na, K, Urea, creatinine).

4- Radiological examination: Contrast (Barium or Gastrograffin) enema for the transition zone (TZ), retained contrast on a post-evacuation film, and abnormalities of the rectal mucosal folds.

5- Rectal Biopsy: All patients were submitted to full thickness rectal biopsy under general anesthesia. The definitive diagnosis of HD was based on histological evaluation of a rectal biopsy, looking for the presence or absence of ganglion cells and the finding of hypertrophied nerve trunks.

6- Laparoscopic leveling biopsies to detect the accurate level of aganglionosis.

Operative procedure:

A) Preoperative Preparation:

Preparation of the bowel was done one week before radical treatment to reduce complications. The colon was cleaned with special enema preparations (saline solution, 20cc/kg/enema). During the days preceding surgery, rectal probing was repeated and alternated with evacuating enemas. Preoperative intravenous antibiotic prophylaxis was started 1 hour before surgery.

Operative technique:

- Laparoscopic Assisted Trans-anal Pull-through in group A

- Total Trans-anal Endo-rectal Pull-Through in group B

The postoperative investigations:

- Histopathological examination of the excised segment.

- **EMG anal sphincter** after 6 months of the surgery to assess the neuropathic changes of sphincter.

-**MRI pelvic floor and anal sphincter** after 6 months of the surgery to assess damage of sphincter or any structural abnormality related to surgery.

Evaluation and follow up for all patients after surgery:

Regular clinic visits at varying interval following the surgery (2 weeks, 3 weeks, 1 month, 6 months and 1 year).

1- Stooling pattern assessment: All patients were submitted to a questionnaire (El-Sawaf et al., 2007) 1 month, 6 months and 1 year postoperatively. This questionnaire was designed specifically to address the complication of surgeries for HSD. The maximum total score after questionnaire was 40, while minimum score was 0 (0 to 10 was excellent; 11 to 20 was good; 21 to 30 was fair; 31 to 40 was poor).

2- Evaluation of continence: All patients were submitted to evaluation of continence (Ishihara et al., 2005) 1 months, 6 months and 1 year postoperatively. Evaluation of continence involved scoring five parameters (frequency of motions, severity of staining/soiling, and severity of perianal erosions, anal shape, and requirement for medications) on a 3-point scale (0, 1, and 2). Continence evaluation was classified as normal for 10 points were scored; good for 8–9 points; fair for 6–7 points and poor for 0–5 points. Staining meant fecal markings on underclothing and soiling meant actual feces on underclothing.

3- EMG anal sphincter after 6 months of the surgery to assess neuropathic change in sphincter.

Outcome measure:

- A. Stooling pattern assessment.
- B. Continence evaluation score.
- C. Occurrence of anastomotic leak.
- D. Presence of postoperative buttocks excoriations, and for how long.
- E. Occurrence of enterocolitis.
- F. Stricture formation which was evaluated by per rectal examination after two weeks and at regular follow up intervals.
- G. EMG anal sphincter after 6 months of the surgery to assess neuropathic change in sphincter.
- H. MRI pelvic floor and anal sphincter after 6 months of the surgery to assess damage of sphincter or any structural abnormality related to surgery.
- I. Histopathological results of the resected segment.

Statistical analysis:

Data were analyzed using Statistical Program for Social Science (SPSS) version 20.0. Quantitative data were expressed as mean± standard deviation (SD). Qualitative data were expressed as frequency and percentage.

The following tests were done:

Independent-samples t-test of significance was used when comparing between two means.

Paired sample t-test of significance was used when comparing between related sample.

- Chi-square (X²) test of significance was used in order to compare proportions between two qualitative parameters.

- Binary logistic regression: was used to predict the outcome of categorical variable based on one or more predictor variables.

- P-value <0.05 was considered significant.

RESULTS

Of the 20 LAP assisted trans-anal group patient, 16 were males and 4 were females, and of the 20 trans-anal group patients, 13 were male and 7 were female. The mean age at operation was 23.85±20.22 months for LAP Assisted trans-anal group and 22.15±20.63 months for trans-anal group.

The rectal biopsy was a ganglionic in 18 and hypo ganglionic in 2 of 20 lap Assisted trans-anal group patient, and 20 a ganglionic in 20 trans-anal group patient. EMG was normal in both groups.

There was no statistically significant difference between the two groups as regard demographic data, (age, sex, weight at the time of the operation, contrast study, histopathology of biopsy and preoperative EMG), this denotes that both groups are actually comparable.

Two cases developed enterocolitis and managed conservatively .Four cases developed anastomotic stricture and managed by regular Hegar's dilatation. Morbidity leading to colostomy in this

group was two cases. Anastomotic leakage occurred in two patients and managed by transverse de-functioning colostomy. Pathological processing of the resected colon revealed adequate proximal margin in all patients.

Three cases developed enterocolitis and managed conservatively. Four cases developed anastomotic stricture and managed by regular Hegar's dilatation. Morbidity leading to colostomy in this group one case. Anastomotic leakage occurred in one patient and managed by transverse de-functioning colostomy. Pathological processing of the resected colon revealed adequate proximal margin in all patients.

There was no statistically significant difference between the two group's early post-operative follow up as regard, anastomotic leakage, anastomotic stricture and intestinal obstruction, enterocolitis, buttock excoriation and morbidity leading to colostomy. There was statistically significant difference

between the two group's operative data as regard, operative time (120-180 minutes for group A and 50-120 minutes in group B).

After one year of follow up : group A (total patient 20) continence score was normal in 10, good in 9, fair in 1, poor in 0; while group B (total patient 20) continence score was normal in 5, good in 14, fair in 1, poor in 0; however, staining/soiling in group A was present in 2 (occasional staining in 2 cases, staining in 0, staining always in 0, and soiling in 0); while group B staining/soiling was present in 2 (occasional staining in 2 cases, staining in 0, staining always in 0, and soiling in 0). As regard continence in the post-operative period we found statically significant (except at after 12 months score which is clinically no statically significant) with positive trend of improvement of continence score in group A as regard: score at 1 month, 6months and 12 months postoperative follow up (Table 1).

Table (1): Comparison between two groups according to continence score after 1 and 6 months

Groups Continen- ce score	Lap assisted trans-anal group	Trans-anal group	p-value
After 1 Month			
Mean \pm SD	8.06 \pm 1.16	7.21 \pm 0.92	0.014
Range	5 - 10	6 - 8	
After 6 Month			
Mean \pm SD	9.06 \pm 0.80	8.47 \pm 0.61	0.013
Range	7 - 10	8 - 10	
After 12 Month			
Mean \pm SD	9.35 \pm 0.81	8.95 \pm 0.83	0.131
Range	7 - 10	7 - 10	

As regard stooling pattern assessment in the post-operative period we found clinically significant yet no statically significant (except at after 12 months score which is statically significant) with

positive trend of improvement of stooling score in group A as regard: score at 1 month, 6months and 12 months postoperative follow up (Table 2)

Table (2): Comparison between two groups according to stooling score after 12 months.

Groups Stooling score	Lap assisted trans-anal group	Trans-anal group	p-value
After 1 Month			
Mean \pm SD	10.11 \pm 7.15	13.58 \pm 6.33	0.112
Range	3 - 30	6 - 30	
After 6 Month			
Mean \pm SD	6.67 \pm 6.62	10.42 \pm 5.68	0.062
Range	1 - 25	4 - 25	
After 12 Month			
Mean \pm SD	4.45 \pm 5.25	8.65 \pm 5.70	0.020
Range	1 - 20	1 - 20	

As regard obstructive symptom in the post-operative period we found clinically significant yet no statically significant (except at after 6 months score which is statically significant) with positive trend

of improvement of obstructive score in group A as regard: score at 1 month, 6 months and 12 months year postoperative follow-up (Table 3)

Table (3): Comparison between groups according to Obstructive symptoms Score after 6 months.

Obstructive symptom score \ Groups	Lap assisted trans-anal group	Trans-anal group	p-value
After 1 Month			
Mean ± SD	0.33±0.59	0.84±1.30	0.18
Range	0 - 2	0 - 4	
After 6 Month			
Mean ± SD	0.22±0.43	0.89±1.15	0.02
Range	0 - 1	0 - 3	
After 12 Month			
Mean ± SD	0.15±0.37	0.35±0.81	0.322
Range	0 - 1	0 - 3	

Postoperative anal EMG showed neuropathic changes (in form large amplitude and long duration) in 2(one of them had fair continence score) cases in

group (A) (10%) and in 4 (one of them had fair continence score) cases in group (B) (20%) (Table 4).

Table (4): A Comparison between groups according to postoperative EMG.

EMG \ Groups	Lap assisted trans-anal group	Trans-anal group	p-value
Amplitude(mv)			
Mean ± SD	0.35 ± 0.14	0.36 ± 0.15	0.838
Range	0.21 - 0.74	0.21 - 0.74	
Duration(s)			
Mean ± SD	4.61 ± 1.82	4.79 ± 2.23	0.782
Range	3.32 - 10.34	3.21 - 10.21	
Phases			
Mean ± SD	4.25 ± 4.27	5.10 ± 5.13	0.572
Range	2 - 18	2 - 20	

No abnormal MRI findings of the pelvic floor (except in 3 cases in lap assisted endo-rectal pull-through group A attenuated right levatorani muscle and 2cases in trans-anal group).

Anorectal angle was normal in all cases except 2 cases with fair continence score was more than 120 degree

DISCUSSION

Several operative techniques have been developed for the treatment of Hirschsprung's disease (HD) in the past decades. Since one-stage trans-anal pull-through (TAPT) was first performed in 1998, multiple studies have shown favorable short and mid-term results compared to other techniques with shorter operation length, shorter hospital stay and lower complication rates (Zimmer et al., 2016).

This study was conducted on two groups of patients suffering from HSD, classified into group A (20 patients) operated upon using laparoscopic assisted trans-anal endo-rectal pull-through and group B (20 patients), operated upon using trans-anal endo-rectal pull-through technique.

These patients diagnosed as having HSD by careful clinical assessment, radiological and confirmed by Histopathological examination and in this study the rectal biopsy was done in all patients (100%) and laparoscopic leveling biopsy done in all patients (100%), with accuracy rate 100%.

There were no statistically significant differences among groups with respect to gender, age, at the time of the pull-through, weight, length of the a ganglionic segment, intraoperative complications or level of the transition zone.

In this study concerning to laparoscopic assisted trans-anal endo-rectal pull-through group, the early postoperative complications were reported in 11(55%) cases and mean time for buttock excoriation is less than one week.

In contrast to the pure trans-anal group, the early postoperative complications were occurred 5 (25%) cases and mean time for buttock excoriation is more than one week.

The incidence of tight strictures after 6 months follow up were (5%) lower than reported in other series. properly due to familiarity of the procedure in our institution and lower manipulation and maintenance of adequate vascularity of the pulled through colon Teitelbaum and Coran, 2008).

Morbidity leading to colostomy was two cases in group A (10%), due to disruption at the site of anastomosis, and one case in group B (5%), due to disruption at the site of anastomosis.

EI-Sawaf et al. (2007) 15-items questionnaire provides a detailed real-life evaluation of the outcome after TRAT for HSD. This questionnaire is an objective way of assessing the stooling function after the TAPT. Interestingly, we are one of the first prospective studies that can describe continence as being excellent, good, fair, or poor after TRAT.

Obstructive score was used to add more distinction between the stooling disturbance and the obstructive attacks commonly occurs in the HSD patients post TAPT.

The improvement in stooling score in group A could be explained by better sphincter function, owing to less sphincter damage, with less anal manipulation with the avoidance of overstretching the anal sphincters in pure TAPT procedure.

This is consistent with 2 studies done in adults. They documented changes in manometric findings after similar trans-anal procedures. In one study, 21 patients underwent a trans-anal rectocele repair, and in the other study, 40 patients were selected by random for a hemorrhoidectomy with or without the use of an anal retractor.

Both of these reports showed lower resting anal pressures and squeeze pressures postoperatively compared with controls. In addition, in a large multicenter study, the authors reported transient soiling and increases in bowel movements in a significant number of their patients, and they felt the cause was the overstretching. However they stated that this soiling was transient (EI-Sawaf et al., 2007).

Evaluation of continence involved using a standardized continence evaluation questionnaire (CEQ) covering 5 parameters (frequency of bowel motions, severity of staining (SS), severity of perianal erosions, anal shape, and requirement for medications). Five parameters were scored on a scale of 0 to 2, giving a maximum score of 10.

In this study, we tried to determine what happens over time by conducting prospective evaluations of bowel habit after lap-assisted trans-anal and pure trans-anal pull through. Our CEQ was focused on SS/soiling and provided us with valuable information about the effectiveness of surgical management.

In this study, concerning the laparoscopic assisted trans-anal group, fecal continence score after one year were; ten cases had normal score (50%), nine cases had good score (45%), one cases had fair score (5%) and zero case had poor score (0%), however, staining/soiling was present in 2 (10%) of 20 subjects (occasional staining in 2 cases, staining in 2, staining always in 0, and soiling in 0). staining/soiling was present in 5 (25%) after 6 months and 12 (60%) after 3 months. we found improvement in staining/soiling through 12 months follow up, in first 6 months this improvement is better than pure trans-anal.

In contrast to the pure trans-anal group, fecal continence score after one year were; 5 cases had normal score (25%), fourteen cases had good score (70%), one cases had fair score (5%) and zero case had poor score (0%), however, staining/soiling was present in 2 (10%) of 20 subjects (occasional staining in 2 cases, staining in 2, staining always in 0, and soiling in 0). staining/soiling was present in 9 (45%) after 6 months and 16 (80%) after 3 months.

In this study, 2 cases who fair continence score trans-anal dissection was started at the dentate line, CE were significantly worse when compared with subjects who had trans-anal dissection was started above dentate line.

Presumably, a low anastomosis distal to the dentate line may damage the delicate nerve endings that play a part in anorectal continence.

Oh et al. (2016) reported that the level of submucosal dissection and anastomosis in single-stage LATEP influenced postoperative stool frequency in the patients with recto-sigmoid segment confined to HD. At 24 and 36 months after corrective surgery for a ganglionosis of the recto-sigmoid colon, the number of bowel movements was significantly smaller in patients with anastomoses created 15mm above the dentate line than in patients with anastomoses created 2mm above the dentate line.

Following a systematic rationale in the classification of patients with fecal incontinence and applying selectively, individualized management, it is possible to achieve a 95% success rate in patient suffering from fecal incontinence (Andrea and Manuel, 2010).

This study is one of the few prospective studies to compare the status of postoperative fecal continence on an annual basis according to surgical procedure. We found that annual CEQ scores after laparoscopic assisted trans-anal were higher than those after pure trans-anal, because the feeding vessels to the ganglionic rectum/colon are divided laparoscopically without any need to stretch the anal canal when dividing vessels.

One stage EPT was reported successfully in other series and can be a good option in developing countries providing quality care in one hospitalization and preventing the stigma

of having a colostomy (Stensrud et al., 2012).

De La Torre and Langer (2010) Found that the one stage endo-rectal pull-through (OSEP) is a safe procedure, reduce hospital stay and morbidity related to the colostomy. One stage trans-anal endo-rectal pull-through in the late diagnosed HD represent no risk for the sphincter mechanism, if we respect the rule of the dissection outside of the anus without retraction of the anus sphincter, and the hugely dilated colon tends to decompress after an efficient bowel management making the dissection outside the anus without retraction safer for the sphincter mechanism during OSEP.

Ishihara et al. (2005) found in 20 subjects with a follow-up period of more than 12 months after surgery of HSD, final CE was normal in 5, good in 10, fair in 4, and poor in 1, despite staining/soiling being present in 12 (60%) of 20 subjects.

Lap-assisted trans-anal pull-through is a satisfying operation for HD. The extent of laparoscopic and trans-anal mobilization of rectum makes no difference in the outcomes. The effect of stretching of external sphincter during trans-anal dissection appears to be short-lived (Mathur et al., 2014).

Ishikawa et al. (2008) Constipation was defined as requiring anorectal myectomy and soiling as "greater than once per week at three years post-surgery.

Thomson et al. (2015) conducted a meta-analysis for the outcomes following totally TERPT versus TERPT with any form of laparoscopic assistance for infants with uncomplicated HD, and found no significant differences concerning

postoperative enterocolitis, fecal incontinence, or constipation.

Because of the prospective nature of our study, as well as personalized interviews with patients' parents at each regular outpatient follow-up visit to evaluate continence, we feel that our results are more reliable than those obtained from a retrospective study and accurately reflect the true status of our patient.

In HSD, the possible causes of postoperative fecal incontinence may be intraoperative sphincter damage and/or existing associated anomalies in sphincter muscles or their innervations. Even though numerous studies have been attempted to clarify the pathophysiology of a ganglionic segment, little attention has been paid to the striated muscle function in HSD (Gadallah et al., 2008).

To investigate the possibility of iatrogenic trauma during operation, preoperative and postoperative EMG assessments were performed.

In this study, preoperative anal EMG was normal in all cases, Postoperative anal EMG showed neuropathic changes (in form large amplitude and long duration) in 2 cases in group (A) (10%) and in 4 cases in group (B) (20%). These 6 cases had a definitely recognized intraoperative reason. During surgery, endo-rectal dissection was difficult in those five cases as it was bloody, adherent, and time consuming, with considerable anal stretch.

Trans-anal dissection time was higher in those who had postoperative neuropathic EMG than those without, highlighting the effect of prolonged

intraoperative manipulation on anal sphincter integrity. Thus, postoperative pathological EAS findings could be attributed to the surgical procedure itself in only 6 cases of our cases.

The surgical outcomes of HD and ARM patients have improved with modern surgical techniques, and there is increased understanding of the anatomic and physiologic derangements. Despite this however, many patients have impaired fecal and urological control, which may negatively impact their health related quality of life (Rintala and Pakarinen, 2010).

El-Shafei et al. (2015) reported that postoperative EMG showed neuropathic changes in 15 of the 25 cases (60%) in the form of large amplitude and/or wide polyphasic motor unit, of whom 7 (28% of the total patients) had preoperative findings and 8 (32% of the total patients) showed only postoperative motor unit changes. Among the seven cases that showed preoperative pathological motor unit, there was no statistically significant difference between pre-EMG and post-EMG motor unit.

In this study all cases showed no abnormal MRI findings of the pelvic floor (except in 3 cases in group A attenuated right levator ani muscle and 2 cases in group B). Anorectal angle was normal in all cases except 2 cases with fair continence score was more than 120 degree.

Strength of the present study is that the two groups of patients has well balanced demographic data and preoperative clinical presentation, only two expert surgeons performed all procedures. Finally, all patients had objective follow

up and precise pathologically reassessing the resected colon, which allowed us to confirm normal proximal end of the specimen, all patients had ganglion cells confirmed by section analysis of the proximal margin. The limitations of this study, the median follow up time was rather short and the sample size was too small.

ACKNOWLEDGMENT:

The authors acknowledge Dr. Yossef Mohamed, Assistant Lecturer of Pediatric Surgery Department, Al-Azhar University Hospital for collecting data.

CONFLICT OF INTEREST:

Abdelaziz Yehya, Magid Ismail and Samir Gouda have no conflicts of interest and have no any financial support.

CONCLUSION

Both pure trans-anal and laparoscopic assisted pull through are feasible and durable in treatment of Hirschsprung disease. The stooling pattern, continence score, and EMG data are significantly better for the laparoscopic assisted group compared to pure trans-anal pull through. These findings raise an important issue about the current surgical management of HSD. However, further investigation in randomized clinical trials with a large sample size was recommended.

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نتائج التحكم في التبرز بعد إستئصال القولون عن طريق فتحة الشرج من داخل المستقيم مباشرة وبمساعدة منظار البطن الجراحي لعلاج مرض هيرشسبرانج

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خلفية البحث : هناك عدة طرق لعلاج مرض هيرشسبرانج في الفترة الأخيرة . وهناك طريقة التحكم في التبرز عن طريق فتحة الشرج من داخل المستقيم مباشرة والتي كانت أول ما استخدمت في عام ١٩٩٨ .

الهدف من البحث: تقييم التحكم في التبرز بعد استئصال القولون عن طريق فتحة الشرج من داخل المستقيم مباشرة وبمساعدة منظار البطن الجراحي لعلاج مرض هيرشسبرانج.

المرضى وطرق البحث: أجري هذا البحث علي أربعين مريض يعانون من مرض هيرشسبرانج في الفترة من يوليو ٢٠١٣ حتي يوليو ٢٠١٦. وقد تم تقسيم المرضى إلي مجموعتين متساويتين: المجموعة الأولى اجريت لهم عملية إستئصال قولون عن طريق فتحة الشرج من داخل المستقيم مباشرة و المجموعة الثانية أجريت لهم العملية بمساعدة منظار البطن الجراحي. وقد تم رصد وتسجيل كل نتائج الفحوصات قبل وبعد العملية وكذلك درجة التحكم في عملية التبرز إكلينيكيًا، وبمساعدة رسم العضلات والرنين المغناطيسي علي عضلات الحوض والشرج التي تستخدم في مرحلة المتابعة.

النتائج: بعد أكثر من عام من المتابعة ، في المجموعة الأولى كانت درجة التحكم في ١٠ (٥٠%) حالات بدرجة طبيعية جدا ، ٩ (٤٥%) حالات بدرجة جيد جيدا وحالة وحيدة منذرة (٥%) ، بينما جاءت نتائج المجموعة الثانية نسبة إلي درجه التحكم ٥ حالات بدرجة طبيعية جدا (٢٥%) و ١٤ حالة جيد جدا (٧٠%) و حالة وحيدة منذرة (٥%).

الاستنتاج: نتيجة التحكم في عملية التبرز أفضل في حالة إستئصال القولون بمساعدة المنظار الجراحي عن سحب القولون عن طريق فتحة الشرج بدون منظار، وكذلك التحسن في نمط التبرز ودلالات رسم العضلات.