Assessment of results of suture rectopexy technique for obstructed defecation syndrome, analysis of recurrent factors

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Received date: 01/8/2022
Accepted date: 29/8/2022
Published date: 15/9/2022

Abstract

Introduction: Based on the obliterative suture technique or stapled transanal rectal resection procedure (STARR technique), Nguyen Trung Vinh introduced Suture Rectopexy Technique for Rectal Intussusception associated with Rectocele can not be treated by preservative management. This study aimed to to evaluate the recurrent factors after surgery.

Patients and methods: 54 female patients with Obstructed Defecation Syndrome (ODS) underwent Suture Rectopexy for Rectal Intussusception associated with Rectocele from 2017 to 2020 at Trieu An Hospital. These patients were followed up and evaluated up to 18 months after surgery. The related factors evaluated were: Defecation Syndrome, ages, number of delivery, defecation duration, pre-operative ODS (Obstructive Defaecation Syndrome Score), size of rectocele on MRI, images of rectocele on MRI, post-operative urinary retention, anal stricture after surgery.

Results: Suture Rectopexy Technique was performed on 54 patients, of them, there were 40 patients had fully follow up for18 months. The improvement of defecation syndrome according to ROME IV after 18 months was 87.5%. ODS (Obstrucive defaecation syndrome Score) post surgery 18 months was 8,13 ± 3,95, the improvement was statiscally significant compares to pre surgery which was 14,6 ± 1,78 ($P < 0,05$). There were no severe complications recorded. The reccurent factor was found is the defecation duration before surgery.

Conclusions: Suture Rectopexy Technique for Rectal Intussusception associated with Rectocele is highly efficient and safe. The reccurent factor was found is the defecation duration before surgery.

Keywords: Suture Rectopexy Technique, Rectal intussusception, Rectocele, Constipation,Oobstructed Defecation Syndrome (ODS).

Introduction

In the world, there have been surgical methods to treat chronical constipation caused by Rectal Intussusception associated with Rectocele at the same time as Delorme surgery, suturally fold rectum mucosal by Shafik, stapled transanal rectal resection (STARR), modified Bresler surgery, modified Block surgery combined with rectopexy and mucosal fixation. However, the surgical result of these methods was not so positive, especially long-term result was gradually worsened, the equipment was too expensive [1].

Based on technique of obliterative suture technique stapled transanal rectal resection procedure (STARR surgery), Nguyen Trung Vinh introduced Suture Rectopexy procedure (2005) to treat Rectal Intussusception combined with Rectocele with surgical principles: (1) Suturally fold the mucosa and anterior wall of rectum to cover anterior wall rectum prolapsed; (2) Suturally fold posterior mucosal rectum to remove musoid in posterior wall rectum.

Our study aimed to evaluate the related factors of recurrence after surgery in order to make the recommendation of suitable selection of patients before surgery, also to improve the prognostic outcomes.

Patient and methods

Patients: Studying subjects were female patients diagnosed with Rectal Intussussception associated with Rectocele who had constipation (according to Rome IV Diagnostic Criteria Guidelines) and were treated using Suture Rectopexy Technique at Trieu An Hospital HCMC from 06/2017 – 12/2020.

Designing research: Prospective case series study, clinical intervention without control group.

Subject selection: Female patient, adult, had or had not given birth (Cesarean delivery or Vaginal delivery) admitted to hospital due to ODS caused by Rectal Intussussception (findings from defecography-MRI or during surgery) associated with Rectocele.

Selection criteria and surgical indication: Interrogation of patients to determine the ODS based on ROME IV criteria [2], the severity of ODS was assessed based on evaluated according to ODS scale [3]; clinical examination to detect the Rectal Intussussception associated with Rectocele; defecography MRI to determine patient with moderate anterior rectocele (retocele size < 4cm, grade II according to Yang) + Rectal Intussussception [4]; during surgery grade I Rectal Intussussception was found according to Longo + Rectocele; patient was treated conservationhad preservation treatment failed.

Exclusion criteria: including functional constipation, constipation caused by physical damage (pelvis floor problem), IBS, colon atony; perineal infection, rectovaginal fistula, anal fistula; perianal abscess; anal stenosis unable to insert anal dilator (CAD33); flatulence or faecal incontinence, already underwent operation to insert composite graft into vaginal and rectum; heart failure, liver failure, acute or chronic renal failure, coagulopathy; patient had cancer or pelvic tumor.

Postoperative follow-up and variable

Ages, history of obstetric and surgery, related factors to constipation including the defecation manifestation according to ROME IV, defecation duration (month), ODS, images of Rectal Intussussception and Rectocele on MRI by defecography or evaluation during surgery, defecation reflex, balloon expulsion test.

The complications including early complications and complication in late. Early complications were bleeding, urinary retention, surgical site infection. Late complications were anorectal stenosis, vagino-rectal fistula and other.

Variable related to the surgical outcomes were: constipation syndrome based on ROME IV criteria 18 months after surgery.

Data gathering

Data collection tools: Data was recorded according to data collection template and saved to computer with Excel 2007 software.

Data collection process: Collect data using template form. Data of monitoring after discharged was collected directly from patients with template form: invite the patient for follow-up or exchange information through phone.

Processing data and statistically analyze

Data was processed and analyzed with SPSS 16.0 software. The quantitative variables were calculated according to the average and standard deviation. The qualitative variables were calculated in proportion. Chi squared test was used to compare the frequencies. T test with paired samples was used to compare the quantitative variables. Fisher's test was used to evaluate the correlation of subgroup variables.Poisson regression test was used to find multivariate correlation. The differences were significant when p value < 0,05.

Ethic aspect in research

The study proposal was approved by Ethical Committee of HCMC Pharmaceutical University Hospital. All the patients in researching were carefully explained and agreed to sign the consent.

Results

During the period from June/2017 to Dec/2020, Trieu An Hospital had 54 female patients received constipation treatment caused by Rectal Intussussception associated with Rectocele by Suture Rectopexy. Of them, 40 patients were fully followed up for 18 months after surgery.

The average age was 51 years old. The group of patients that had the longest of constipation was over 36 months (32.5%). Average of natural delivery was two times most commonly (67.5%).

On preoperative MRI, the average size of rectocele was from 20mm – 30mm accounted for 77.5%. Intussussception found on MRI was 22 cases (55%). 100% of patients had defecation reflexes before surgery. 72.5% of patients had no ballon explusion reflex.

Preoperative ODS average was 14,69 + 1,78.

There were 10 (25%) patients with postoperative urinary retention which all occured on the first day after surgery. Patients were managed by urinary catheterization for one day until urinary retention was fixed. 2 (3,7%) cases had anal stenosis, but were treated successfully afterwards by anoplasty. Complications of rectal vaginal fistula, dyspareunia, bleeding at incision site, pelvic hematoma, pelvic infection caused by perforation, urinary and fecal incontinence, bleeding post surgery, incision dehiscence, flatulence or feacal incontinence, constipation were not seen in this series.

Constipation symptoms improvement based on ROME IV

The rate of patients improved constipation symptoms according to ROME IV criteria postoperation was 87,5% in 18 months

Assessment of related factors to constipation symptoms improvement.

Univariate

Table 1: Related factors to constipation criteria in 18 months after surgery.

Descriptions		18 months after surgery		PR (KTC 95)	P
		Có	Không		
Ages		47,40 ± 2,52	51,57 ± 1,97		0,2219[t]
Average time	<12 months	2(28,6)	5(71,4)	1	0,041[f]
	12-24 months	3(27,3)	8(72,7)	0,34(0,19-6,20)	
	24-36 months	0 (0,0)	9(100,0)	0,11(0,04-0,38)	
	36-48 months	0 (0,0)	13 (100,0)	0,04(0,01-0,24)	
Number of delivery	≤ 2 lần	4(14,8)	23(85,2)	1	0,469[f]
	> 2 lần	1(7,7)	12(92,3)	0,52(0,64-4,19)	0,469[f]

Preoperative ODS		14,20 ± 1,24	14,54 ± 0,31		0,8006[t]
Rectocele size	20-30mm	4 (12,9)	27 (87,1)	1	0,689[f]
	30-40mm	1(11,1)	8 (88,9)	0,86(0,11-6,77)	
Responding to balloon expulsion	Yes	1(9,1)	10(90,9)	0,66(0,82-5,27)	0,578[f]
	No	4(13,8)	25(86,2)	1	
Rectoceleon MRI.	Yes	3 (13,6)	19(86,4)	1,23(0,23-6,57)	0,598[f]
	No	2 (11,1)	16 (88,9)	1	
Urinary retention	Yes	3(30,0)	7(70,0)	4,50(0,87-23,19)	0,089[f]
	No	2(6,7)	28(93,3)	1	
Anal stenosis	Yes	0 (0,0)	2 (100,0)	//	0,763[f]
	No	5 (13,2)	33 (86,8)		

f: Fishers test //: Cant count t: t-test

Multivariate

Table 2: Related factors to constipation criteria in 18 months after surgery used Possion multivariate

Descriptions	PR_{tho} (KTC_{tho} 95)	Value P_{tho}	PR_{hc} (KTC_{hc}95)	Value P_{hc}
Average time*				
<12 months	1	0,041	1	<0,001
12-24 months	0,34 (0,19-6,20)		0,34 (0,19-6,20)	
24-36 months	0,11 (0,04-0,38)		0,11 (0,04-0,38)	
36-48 tháng	0,04 (0,01-0,24)		0,04 (0,01-0,24)	

Discussions

In 2014, Nguyen Trung Vinh introduced the technique of suture rectopexy for rectocele size < 4 cm and small rectal intussusception.A retrospective study conducted by Nguyen Trung Vinh in 2018 for a period of follow up more than 60 months showed that the constipation improvement was up to 92.72%. There were no severe complications after surgery recorded [5].Our prospective study also showed positive results.After 18 months of surgery, the rate of patients who improved their constipation symptoms according to ROME IV criteria was 87.5%. Only 2 patients had postoperative anal stenosis but successful repair.

Obstructive defecation syndrome is a syndrome with a complex pathogenesis. Therefore, the factors affecting the treatment outcome have not been clearly identified [9]. Here, we studied the relationship between patient characteristics and the outcome of the persistence of postoperative constipation.

In our series, postoperative constipation improvement was related to preoperative constipation time.Patients with a longer preoperative period of constipation improved their symptoms more than the group of patients with a shorter preoperative period of constipation.The group of patients with constipation duration of less than 12 months, respectively, improved their constipation symptoms worse than the group 12-24 months, the group 24-36 months and the group 36-48 months.This correlation appeared in both univariate and multivariate analyses.This finding is contrary to the popular view that the longer the duration of constipation, the greater the impact on bowel function, leading to a poor response to treatment [10].Visconte studied on 74 patients with ODS treated with STARR surgery for 10 years of follow up and found that the longer the duration of constipation, the greater the strain and damage to the pudendal nerve [6]. This results in pelvic floor dysfunction.However, it can be seen that our patients had a preoperative period

of constipation only from 4 years, so the change in response to treatment may be different from the group of patients of Visconte.

Age is also a factor that is often considered. Aging impacts the strength of connective tissues and increases the time to against the pressure.However, the current studies have not found any relationship. In study of Gaghiardi, the subjects with a mean age of 56 years have no correlation [8].Also in Zhang's study of patients with a mean age of 54 found no relationship [7].Our study had a mean age of 51 years old, also found no correlation.The number of delivery is also a significant factor, as multiple deliveries impacted on the pelvic floor.However, in both our study and Zhangs study, multiple deliveries were not associated with improvement of postoperative constipation symptoms.

Our study is the first prospective study to evaluate the effectiveness and factors related to the suture rectopexy technique for constipation caused rectal intussusception associated with rectocele.Our study therefore has the advantages of a prospective study such as patients are closely followed, data is fully collected according to the original plan. Some limitations of study was the patients have not been tested for bowel movement, measuring the anorectal pressure to more comprehensive assessment of constipation status. On the other hand, the study sample size was still quite small and the follow-up period was relatively short.The increase in the number of cases and follow-up time, full implementation of constipation tests will help to more accurately assess the effectiveness and related factors of the technique in the future.

Conclusions

Suture rectopexy technique for rectal intussusception associated with rectocele is an effective surgery in the treatment of constipation due to obstructive defecation syndrome, with few complications.The factor related to the constipation recurrence after surgery is the time of constipation before surgery.

Conflict of interest: The authors declare that they have no conflict of interest.

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