

An Observational Study of Laparoscopic Transanal Suture Rectopexy

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ABSTRACT

BACKGROUND

Rectal prolapse is the protrusion of full thickness rectal wall through the anal canal. Historically it affects women more often than men, at a ratio of 6:1.¹ Patients with rectal prolapse suffer from anal incontinence, constipation, mucous or blood discharge from the protruding tissue and pain. This study analysed the results of LTSR (Laparoscopic Trans Anal Suture Rectopexy), its complications and benefits.

METHODS

Twenty patients were subjected to LTSR between July 2017 and June 2019. The surgical technique used was LTSR, where the posterior rectal wall and mesorectum were fixed to the sacral promontory and presacral fascia with PDS suture.

RESULTS

Postoperative hospital stay was 2 days. One patient had intraoperative hematoma, which was treated with local compression and antibiotics. One patient had recurrence. One patient developed difficulty in micturition. No death occurred.

CONCLUSIONS

LTSR is a simple, low cost technique, which has shown good efficacy in rectal prolapse control.

KEYWORDS

LTSR (Laparoscopic Trans Anal Suture Rectopexy)

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BACKGROUND

Rectal prolapse is the protrusion of full thickness rectal wall through the anal canal. Historically it affects women more often than men, at the ratio of 6:1.¹ Patients with rectal prolapse suffers from anal incontinence, constipation, mucous or blood discharge from the protruding tissue and pain. Patient with rectal prolapse frequently found to have anatomic characteristics, like diastasis of the levator ani, abnormally deep cul-de-sac, redundant sigmoid colon, patulous anal sphincter, and loss of the rectal sacral attachments are commonly described. Several treatment methods have been proposed which includes various procedures performed through perineal, abdominal or trans anal approach, all giving good results, but none without recurrence even if candidate selected properly.² When comparing between the different treatments modalities for rectal prolapse post-operative morbidity, recurrent rectal prolapse, fecal incontinence, and worsening constipation are all important outcome variables to examine. The choice of approach is largely influenced by surgeon preference as well as patient factors, including comorbidity, age, gender and sexual activity. Most surgeons prefer perineal procedures in elderly or frail patients and abdominal approaches in fit patients.³ Although there is increasing evidence that laparoscopic procedures are safe even in the very elderly.⁴ The choice of procedure should also take into account the presence of concurrent genital prolapse, constipation, evacuatory difficulties, faecal incontinence and history of pelvic floor injury. In 2015 Cochrane review of 15 randomized control trials and over 1000 patients failed to display superiority of any approach in terms of recurrence rate and quality of life after procedure. Resection rectopexy has traditional been recommended for patients who have both constipation and rectal prolapse, although there is little evidence to support this practice. Men tend to be offered perineal procedures in view of the potential for erectile dysfunction from rectal mobilization during abdominal approaches.

We wanted to analyse the results of LTSR, its complications and the benefits of this new natural orifice surgical technique.

METHODS

As this procedure is not well documented, with due consent 20 patient of rectal prolapse who volunteered after thorough explanation about the merits and de merits of the procedure, got treated with LTSR were included in this study. None of these patients had history of previous intervention for rectal prolapse.

Inclusion Criteria

1. Full thickness rectal prolapse.
2. Age 15-80 years.

Exclusion Criteria

1. Large bowel malignancy
2. Unfit for surgery
3. Hip joint pathology, not able to give lithotomy position
4. Previous pelvic surgery
5. Inflammatory and infective pathology of rectum
6. Previously operated for rectal prolapse
7. Associated anterior compartment prolapses

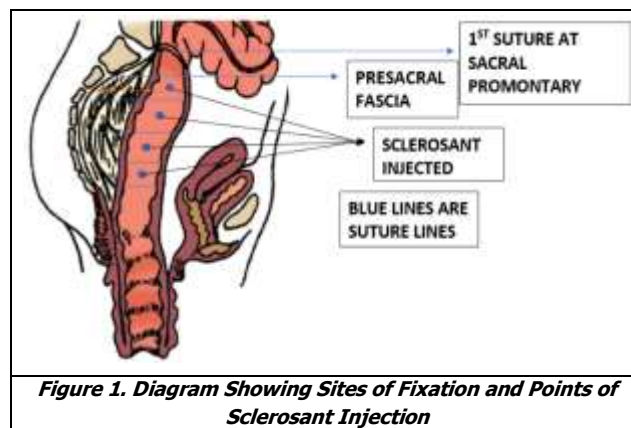


Figure 1. Diagram Showing Sites of Fixation and Points of Sclerosant Injection



Figure 2. Pre-Operative Photo

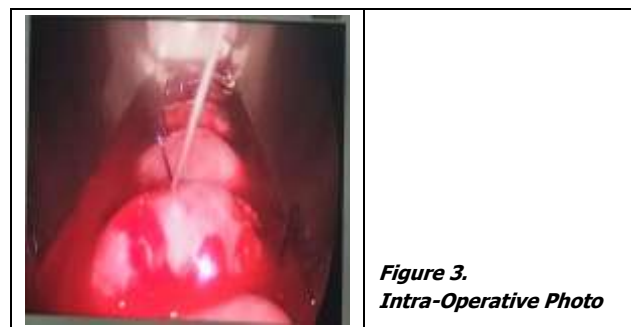


Figure 3. Intra-Operative Photo

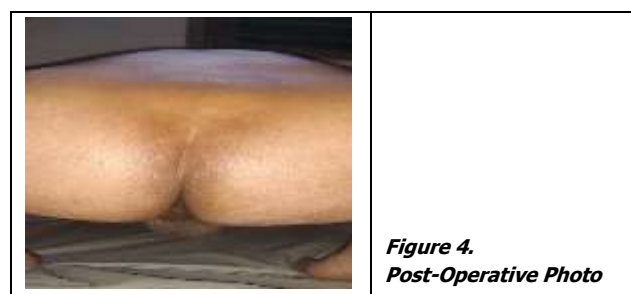


Figure 4. Post-Operative Photo

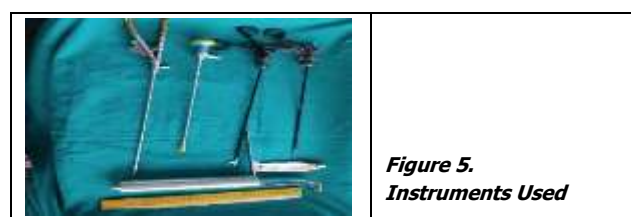


Figure 5. Instruments Used

Technique

Preoperatively day before the surgery laxatives are given and enema is given on the day of surgery. Prophylactic antibiotic (inj. ceftriaxone 1 gm and inj. Metronidazole 500 mg) are given intravenously before surgery. After giving saddle or spinal anaesthesia, high lithotomy position is given with steep head low. With the help of specially designed proctoscope (made up of stainless steel of 22 cm in length, circumference of 12 cm), prolapse is reduced and rectal wall stretched, and then four to five stitches are taken starting from the level of sacral promontory. Further three to four stitches are placed below it at the gap of 2-3 centimeters with the help of PDS no. 0 suture (40 mm needle, round body). To ensure proper placement of the stitches we gave testing traction on suture line to confirm inclusion of pre sacral fascia along with rectal wall in the stitch before tying the knot. In between two stitches 1.5 ml of 0.5% povidocanol was injected beyond the rectal wall to increase the fibrosis between rectum and pre sacral fascia. Patient were advised not to strain for 3 months. All patients were discharged on 2 post-operative day on oral laxatives. Patient were followed up at 6,12,18,24 months (for the period of 6 months to 24 months).

longest was about 75 mins. In our study majority of the patient had the prolapse size of 6-8 cm. Biggest prolapse which was repaired with this procedure was 1 case above 10 cm, which case also presented with recurrence at 24 months follow up. In my study seven symptoms were studied preoperatively in each patient and most of the symptoms had shown improvement clinically post procedure ranging from 75%-100%, making this procedure simple and effective having comparable result with other procedures with excellent symptomatic relief. None of the patients had deterioration of the pre-operative symptoms, post operatively.

RESULTS

Sex	No. of Patients	Percentage
Male	14	70
Female	6	30
Total	20	

Table 1. Sex Wise Distribution

Age Group	No. of Pts.	%
11 to 20 yrs.	1	5
21 to 30 yrs.	2	10
31 to 40 yrs.	8	40
41 to 50 yrs.	5	25
51 to 60 yrs.	2	10
61 to 70 yrs.	1	5
71 to 80 yrs.	1	5
TOTAL	20	

Table 2. Age Wise Distribution

In my study 70% cases were males and remaining were females. In my study 70% cases were males and remaining were females. In my study patient between the age of 15 to 80 year were taken, with the youngest aged 15 years and oldest in the study is 77 years. Majority of the patient were of age between 31-50 years. In our study majority of the procedure took 40 – 60 mins of operative time while the fastest procedure was completed in about 35 mins and

Operative Time	No. of Pts.	%
31-40 min.	1	5
41-50 min.	6	30
51-60 min.	8	40
61-70 min.	4	20
71-80 min.	1	5
TOTAL	20	

Table 3. Operative Time

Prolapse	No. of Pts.	%
<6 cm	2	10
6-8 cm	13	65
8-10 cm	4	20
>10 cm	1	5
TOTAL	20	

Table 4. Prolapse Size

	Name of Complication	No. of Pts.	Follow Up (in Months)				
			Intra op	6	12	18	24
Intra Op	Hematoma	1	1	0	0	0	0
		No. of Pts.	20/20	15/20	13/20	7/20	
Post Op	Recurrence	1	N/A	0	0	0	1
	Difficulty in Micturition	2		0	1	1	0
	Bleeding p/r	2		0	0	1	1
	Constipation	4		2	1	1	0

Table 6. Complications

In the study one patient out of 20 undergoing this procedure developed small hematoma intra operatively which was managed by local compression and was resolved immediately, with no post-operative sequelae. All these subjects were followed up from 6 month up to 24 months, in which only one patient developed a recordable complication of recurrence which was noticeable on clinical examination at 24 months follow up. The case which recurred was a 41-year male patient which had the prolapse of size more than 10 cm with extremely patulous anal sphincter requiring Thiersch wiring in addition to the above procedure.

Sr. No.	Symptoms	Pre-Operative		Post-Operative		Post-Op Improvement of Symptoms		Post-Op Deterioration of Symptoms	
		No. of Pts.	%	No. of Pts. (Unrelieved)	%	No. of Pts.	%	No. of Pts.	%
1	Bleeding p/r	12	60	2	10	10	83.3333333	Nil	Nil
2	Something Coming Out	20	100	1	5	19	95	Nil	Nil
3	Constipation	18	90	4	20	14	77.7777778	Nil	Nil
4	Diarrhoea	0	0	0	0	0	100	Nil	Nil
5	Difficulty in Micturition	8	40	2	10	6	75	Nil	Nil
6	Pelvic Pain	8	40	0	0	0	100	Nil	Nil
7	Incomplete Evacuation	16	80	2	10	14	87.5	Nil	Nil
8	ANAL INCONTINENCE	0	0	0	0	0	0	Nil	Nil

Table 5. Symptomatology (Pre- & Post-Procedure)

DISCUSSION

In our study the male/ female ratio is 2.33:1, which is contrary to publish other studies showing male/ female ratio of 1: 6. The age group of 30-50 years showed maximum number of patient which is well comparable with the studies done in the past.^{1,2} In our study majority of the procedures got completed in 40-60 minutes, (shortest time 35 min and longest 75 mins).

In our study we had observed that maximum patients had prolapse size ranging from 6-8 cm. We have also observed that more the prolapse size greater are the chances of post-operative complications or getting less relief of symptoms from LTSR. In our study there is significant reduction in the symptoms post operatively, as compared to other procedure for rectal prolapse making this procedure very attractive, simple, and easy with less operative time, less morbidity and post-operative complications. Other studies had shown reduction in symptoms post operatively ranging from 20-90% while in our study relief was present in about 75-100%, making this procedure more effective as compared to other procedures.⁵⁻¹¹ In our study there is no deterioration of the symptoms post operatively. There was one case of intra operative small hematoma due to needle handling which was effectively managed with local compression with no post-operative complication. One case Had recurrence (5%), while the other published studies showed more rate recurrence as described in the table below. 5-15% of patients in our series had minor complaints like bleeding p/r due to anal fissures (with no other rectal or anal pathologies present), constipation and difficulty in micturition, as compared to other published literature which showed significant number of complains post procedure or even deterioration of the pre-operative symptoms.¹²⁻¹⁹

Abdominal Procedure ²⁰⁻²⁷	Rr (%)	Perineal Procedure ²⁸⁻³⁴	Rr (%)
Mesh Rectopexy	2-5%	Altemeier procedure	12-24%
Suture Rectopexy	3-9%	Delorme procedure	12-31%
Resection Rectopexy	2-5%	Thiersch procedure	up to 75%
Ventral Rectopexy	2-9%	LTSR	5%

Table 7. Recurrence Rate (RR) After Various Procedure for Rectal Prolapse

RR: Recurrence Rate

CONCLUSIONS

LTSR is a very simple, effective and minimally invasive procedure with less morbidity, less operative time, less hospital stay, less recurrence rate of just about 5% and better patient compliance. Post procedure, there is a great reduction in the symptoms of the patients making this an even more attractive modality. This procedure fulfils the ideal goal of rectopexy to mobilize the rectum and straighten the lower rectum in the sacral curve and suture it at the level of sacral promontory to prevent the prolapse. As we are not putting any foreign body in the retro rectus space and as well as not violating lateral pelvic attachment of rectum,

many of the complication arising out of lateral ligament division have not been seen in this procedure and management of recurrence if any can be done from both abdominal as well as perineal route, thus providing us vast varieties of treatment options for the cases of recurrence. Thus, we conclude that LTSR is the wonderful treatment modality for full thickness rectal prolapse, though more studies and longer follow up will be required to validate our observations.

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