

POSTERIOR LEVATOR REPAIR AND RECTAL SUSPENSION FOR RECURRENT RECTAL PROLAPSE: AUTHOR'S EXPERIENCE

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ABSTRACT

Rectal prolapse is not uncommon in young children, and is usually a self limited condition. Recurrent rectal prolapse not responding to conservative management requires surgical intervention. Using posterior sagittal approach, levator repair and rectal suspension was done in 35 patients over a period of 8 years at our Paediatric Surgical Department. Median age of the patients was 4.5 years. Post operatively 5 patients had mild mucosal prolapse and 3 had wound infection. None of the patient had recurrence.

Keywords: Rectal Prolapse, Posterior Sagittal Approach, Levator Repair and Rectal Suspension

INTRODUCTION

Rectal prolapse is defined as circumferential descent of rectum through the anus. It represents either a sliding hernia through a defect in pelvic fascia or intussusception of rectum through anus (Theuerkauf *et al.*, 1970). Factors leading to rectal prolapse include altered bowel habits diarrhea or constipation, parasitic infections, rectal polyp and protein energy malnutrition (Lockhart-Mummery, 1939). In children, rectal mucosa is loosely adhered to underlying muscles and the child's perineal musculature is developing in face of increasing demands for continence and toilet training. Developing sacrum remains flatten. In this age group the increased intra abdominal pressure exerts direct pressure on anus instead of exerting towards the hollow of the pelvis (Lockhart-Mummery, 1939; Porter, 1962; Nigro, 1958). This altered force converts the pelvic peritoneum into a deep pouch and the levator mechanism is dilated, allowing the rectum to herniate through the anus (Ashcraft *et al.*, 1977). Children with neuromuscular problems such as meningomyelocele, exstrophy of bladder or post-operative case of sacrococcygeal teratoma often have prolapsed (Sarin and Sharma, 1993). Recurrent prolapse leads to progressive enlargement of the canal in the levator sling through which the rectum passes. Supports of rectum and lower colon relax, allowing protrusion through this large defect (Ashcraft *et al.*, 1977). Narrowing of levator hiatus and rectal suspension is more anatomical procedure and prevents further prolapse.

MATERIALS AND METHODS

From January 2000 to September 2012 we have operated 35 patients by posterior sagittal approach. Most of our patients were from poor social background, were malnourished and having recurrent rectal prolapse. Age at the time of admission for surgical procedure ranged from 2-10 years. The median age was 4.5 years. Twenty three patients were male and twelve were female. Median duration of prolapse prior to repair was 9 months.

No other associated lesion was present. At time of presentation, patients had complete rectal prolapse more than 5 to 10 cm below the anal verge on each defecation, requiring manual reduction. Five patients had patulous anus admitting 2 fingers easily. In all patients conservative management was employed first. It included correction of altered bowel habits, de-worming and correction of malnutrition. Pelvic muscle exercises were also advised in older children (>4 years). On failure of conservative management, older children were subjected to posterior levator repair and rectal suspension straightaway. In younger children (< 4years) Thiersch wiring was attempted first, with definitive correction reserved for children refractory to Thiersch wiring. 15 of the 35 patients were younger than 4 years and thus had undergone previous Thiersch wiring.

Operative Procedure

Patient placed in the Prone Jackknife position, a small Hegar dilator is placed in the rectum to allow easy identification during surgery. A mid line sagittal incision is made from the coccyx extending about half

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way to the anus. This incision is deepened to expose the coccyx, which is then removed. The retrorectal space is entered by blunt dissection. The levator muscle is divided in the midline. The rectum is pulled cephalad and tacked to cut edge of sacrum using 2-3 interrupted non-absorbable sutures. The levator ani and muscle complex is closed tightly posterior to rectum using interrupted 3-0 vicryl sutures incorporating the posterior wall of pulled-up rectum (Figure 1 & 2). The wound is then closed in layers. Post operatively stool softeners were used for 1 to 2 weeks.

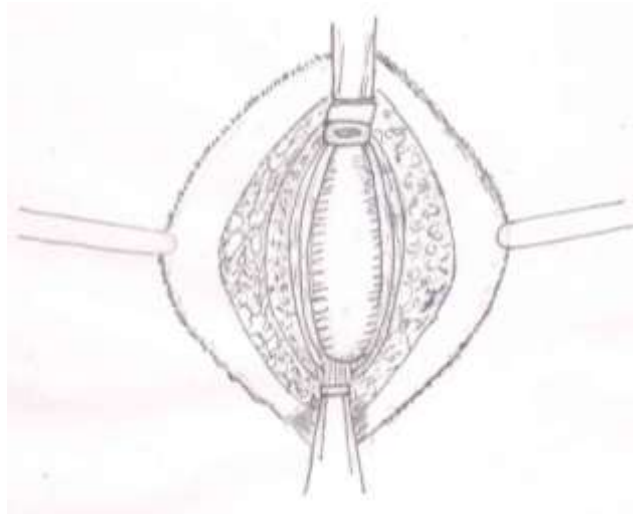


Figure 1: Exposure of rectum with coccygectomy

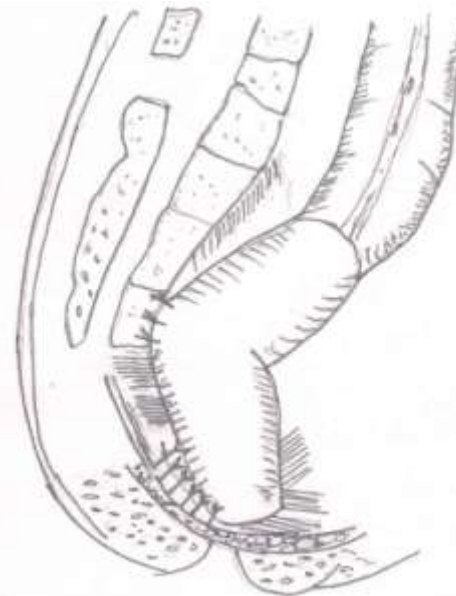


Figure 2: Operative view of rectal fixation and repair of hiatus (tightened muscle complex)

RESULTS

In our series, out of these 35 patients, 5 had mild mucosal prolapse post-operatively (Table 1). Three patients had superficial wound infection treated with routine dressing and antibiotic coverage. There was no recurrence of prolapse during the follow up period of 6 months to 8 years. None of the patient developed constipation or incontinence following surgery.

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Table 1: Results of Posterior Levator Repair and Rectal Suspension for Recurrent Rectal Prolapse

S No.	Group	Age (Years)	No. of patients (30)	Mild mucosal prolapse (5)	Wound infection (3)	Recurrence	Constipation /Incontinence
1	Younger children	<4	15	2	1	Nil	Nil
2	Older children	>4	20	3	2	Nil	Nil

DISCUSSION

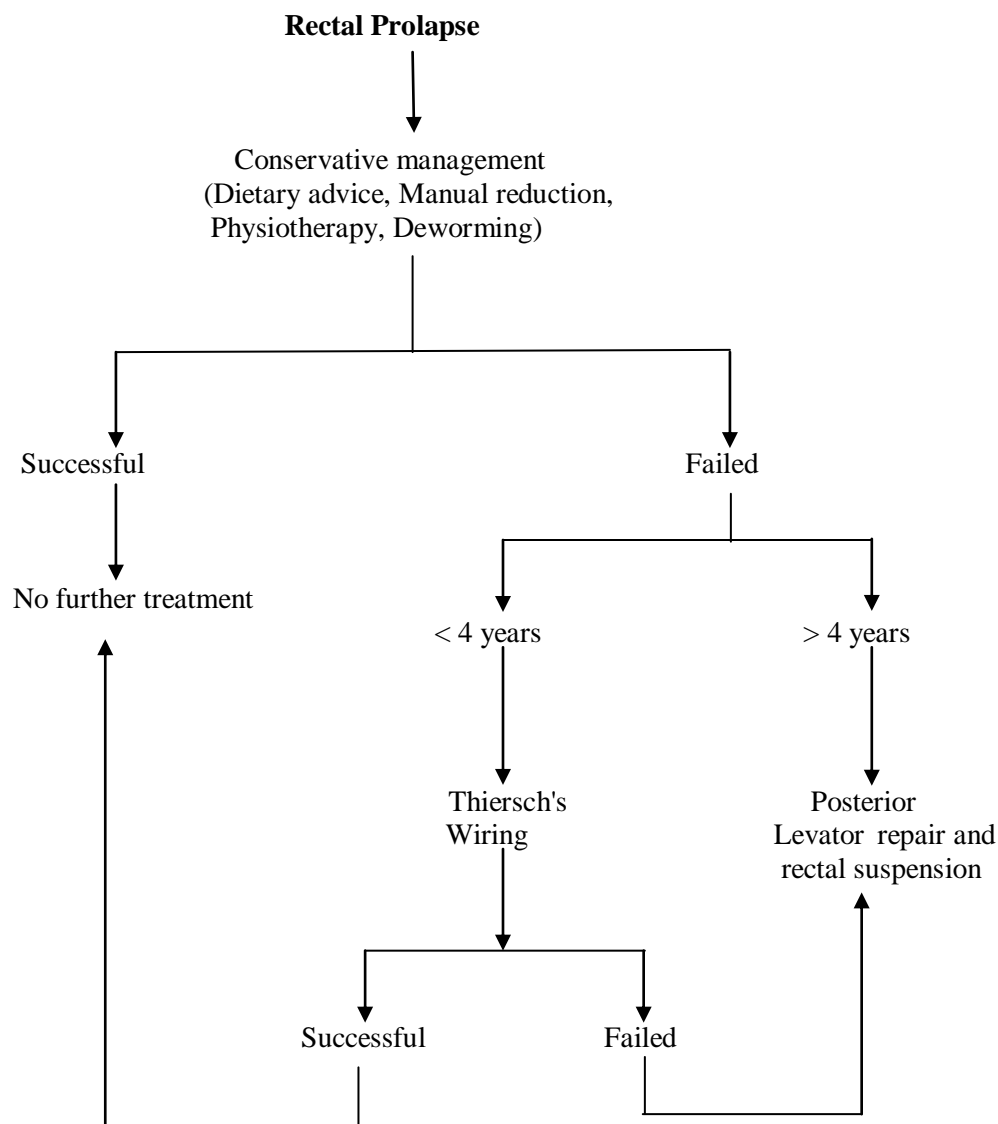


Figure 3: We propose an algorithm for the management of rectal prolapse

Most of the times rectal prolapse is a self limiting problem (Stern *et al.*, 1982; Wassef *et al.*, 1986; Qvist *et al.*, 1986) but recurrent prolapse demands some kind of surgical intervention. Conservative management is more successful in patients younger than 4 years of age and with an associated condition. It should be directed at underlying condition like constipation, diarrhea, or malnutrition. Recurrent rectal

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prolapse not responding to conservative management requires surgical intervention whatever the illness which initiated the prolapse of the rectum (Tsugawa *et al.*, 1995; Ashcraft *et al.*, 1990). We propose an algorithm for the management of rectal prolapsed (Figure3). As younger patients (<4 years) has good prognosis, simpler technique like Thiersch's wiring is employed first in these patients if they do not respond to conservative management. Injection sclerotherapy is a reasonable alternative in such patients and is being preferred by many (Chan *et al.*, 1998; Shah *et al.*, 2005). In patients refractory to conservative management recurrent prolapse produces dilation of levator sling, relaxation of external and internal anal sphincter, and stretching of normal supports of rectum (Ashcraft *et al.*, 1977). The common anatomical features found during surgery for rectal prolapse include (Hoffman *et al.*, 1984).

- Patulous or weak anal sphincter with levator diastasis.
- Deep anterior Douglas cul-de-sac.
- Poor posterior rectal fixation.
- Long rectal mesentery.
- Redundant rectosigmoid.

Posterior levator repair and rectal suspension is a technically sound procedure as it attempts to correct the associated anatomical defects (Ashcraft *et al.*, 1990). The technique was originally described by Ashcraft *et al.*, (1977). Our technique is a variant of the approach used by Ashcraft *et al.*, and is different, as the levator is split in the midline using right angle forceps without any attempt to lift it away from the rectum. Ashcraft *et al.*, (1990) reported a series of 46 patients treated with this technique. Overall, 42 patients had satisfactory resolution of their rectal prolapse. Four patients developed recurrence. These 4 patients were found to be having sigmoid intussusception originally. We have operated 35 patents using this technique. During the follow-up of 6 months to 8 years, no recurrence was noted. As most of our patients are from poor socio-economic background, malnutrition is almost universal. Delayed presentation exaggerates the levator diastasis and other anatomical defects making spontaneous resolution less likely. Absence of any recurrence in our series can be explained by the fact that none of patient had sigmoid intussusception as an inciting event. We believe that this simple and effective technique is even better suited for usually malnourished patients in developing nations. It is much more direct approach on the problem with minimal risk, brief hospitalization, no disturbance to bowel function and restoration of anatomic relations to a more normal state.

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