Holistic Approach to Rectal Prolapse in Children


Abstract

Prolapse of the rectum is the herniation of the rectal wall through the anus and is uncommonly seen in industrialized countries which may be partial (mucosal) or complete (full thickness). The mucosal type of rectal prolapse is the least serious form and is the most common type in the paediatric population. These circumstances are most common from 3-5 years of age and usually first detected by the child’s parents and usually spontaneously reduce. The most common form of rectal prolapse is idiopathic. Potential causes are increased intra-abdominal pressure, and conditions predisposing to pelvic floor weakness. Children with conditions such as rectal polyps, diarrhoea, malnutrition, worms, proctitis, ulcerative colitis congenital megacolon, Ehlers-Danlos syndrome and cystic fibrosis also may have rectal prolapse. Diagnosis is predominantly clinical visualization of the prolapse may require the patient to strain while sitting or squatting. Imaging studies, including fluoroscopic or dynamic magnetic resonance defecography can confirm the prolapse if the diagnosis is uncertain. Endoscopy (sigmoidoscopy/colonoscopy) can aid in detecting other colonic/extra colonic pathology. Rectal prolapse has been associated with Escherichia coli, antibiotic-associated colitis, Entamoeba histolytica, Giardia, Salmonella, Shigella, and Trichuris species. The prognosis is worse when presentation occurs after the age of 4 years. Medicines like Chāngeri (Oxalis corniculata), Lodhra (Symplocos racemosa), Mūśika taila pichu and Mātrā Bastikarma with tail as well as Tub bath by Panchavalkala kaśāya or Phalatrikādi kaśāya to strengthen anal muscles and sphincters. The simplest, less invasive, yet highly effective approach, appears to be perirectal injection with a sclerosing agent. Rectal prolapse surgery (rectopexy) is required if all treatments fail. This paper retrospect the contemporary and Ayurvedic perspectives of rectal prolapse in child and recommends adoption of a holistic treatment, lifestyle, balanced diet with yoga which can prove to be an effective management of rectal prolapse in children.

Key words: Chāngeri, Lodhra, Mātrā Bastikarma, Panchavalkala, Rectal prolapse, Mūśika taila.

1 PG Scholar, 2 Associate Professor, 3 Professor, 4 Assistant Professor, 5 Ph.D. Scholar, Dept. of Shalya Tantra, IPGT&RA, Gujarat Ayurved University, Jamnagar. Gujarat.

CORRESPONDING AUTHOR
Dr. BIJENDRA SHAH,
PG Scholar, Dept. of Shalya Tantra, IPGT&RA, Gujarat Ayurved University, Jamnagar. Gujarat.
Email: bijendrashah17@gmail.com
INTRODUCTION

Ayurveda refers rectal prolapse as ‘Guda bhramśa’. Guda means anus / rectum. Bhramśa refers to dislocation or dislodge, moved away from its main site. Sushruta has described it under “Kṣu- dra Rogas”. [i] Vagbhata has described it’s under complication of Atisāra (Diarrhoea) and its management in the context of “Atisāra cikitsa” [ii]

Prolapse of the rectum is one of the first surgical entities described in the medical profession. It can be defined as the protrusion of a few or all layers of the rectal wall through the anal sphincter (Figure 1, 2, 3). Paediatric rectal prolapse is a relatively common disorder in children and in most cases it is self-limiting, characterized by prompt resolution with institution of conservative measures.

Figure: 1: Partial thickness rectal prolapsed

Figure: 2: Full-thickness rectal prolapsed with multiple circular folds

Figure: 3: Severe rectal prolapsed with oedema and mucosal ulceration

Rectal prolapse in childhood was first highlighted in 1939 by Lockhart-Mummery. [iii] The condition is due to malnutrition, careless nursing, constipation, diarrhoea, or parasitosis and laxative usage. About 60-70% of patients have fecal incontinence. [iv] The prolapse can spontaneously reduce or it can be digitally reduced. Altemeier et al (1971) classified rectal prolapse into 3 types. [v]

- **Type I**: Protrusion of redundant mucosa, termed false prolapse; it is usually associated with hemorrhoids
- **Type II**: Intussusception without sliding hernia of the cul-de-sac; it occupies the rectal ampulla but does not continue through the anal canal; the most common symptom is fecal incontinence, but solitary ulcers in the anterior rectal mucosa can be seen
- **Type III**: Complete prolapse, including full-thickness rectal wall prolapse; it is associated with a sliding hernia of the Douglas pouch and is the most frequent type

**Anatomy:** Anal canal consists of mucosa, submucosa, and 2 muscular layers: the internal anal sphincter (IAS), which is a continuation of the circular muscle of the rectum, and (2) the external anal sphincter (EAS), which lies outside the IAS as an elliptic cylinder and is continuous with the puborectalis muscle superiorly.

**Patho-physiology:** A pelvic floor defect with levator ani muscle diastasis and a deep endopelvic fascia have been described as a pathophysiological effect for the disease. Patients with rectal prolapse have lost the normal semi-horizontal rectal position; they also have weak muscle insertions to the pelvic walls and sacrum and an abnormally deep Douglas pouch. A redundant recto-sigmoid and a weaker and wider anal sphincter are common.

The normal resting tone of the anal sphincter decreases in response to rectal distention. In 1962, Porter found that patients with rectal prolapse have a profound and lengthy response and weakened tone of the levator ani muscles. [vi]

**Etiology**

Sushruta described that the root cause of guda bhramśa is due to following three factors. [vii]

1. **Pravāhana** (Excessive straining during defecation)
2. **Atisāra** (Chronic Diarrhoea)
In modern exact etiology of rectal prolapse in children is unknown. However, several predisposing factors have been identified. The most common underlying condition is chronic constipation and straining (52%). Other causes include diarrhoea (15%), rectal parasites (the most common cause of rectal prolapse in developing countries), neuromuscular and pelvic nerve disorders, myelomenigocele, bladder and cloacal exstrophy, Hirschsprung disease, high anorectal malformations, cystic fibrosis, chronic respiratory infections and cough, lymphoid hyperplasia, rectal polyps, and shigellosis.

**Epidemiology:** In children, the incidence is higher during the first year of life, after which it becomes increasingly infrequent. It is slightly more common in boys than in girls. Whether prolapse in children is predominantly mucosal prolapse (procidentia) rather than full-thickness prolapse is controversial.

**Prognosis:** Over 90% of children who experience rectal prolapse during the first 3 years of life respond to conservative treatment by age 6 years. Spontaneous resolution is much less likely in children who develop their first episode of prolapse after age 4 years. After a surgical rectopexy, continence is achieved in 92% of patients. Respective procedures are associated with decreased recurrence rates. Recovery of continence after surgery is not immediate and may take as long as 12 months.

**CLINICAL PRESENTATION**

**History:** It is often associated with tenesmus and mucus or bloodstained clothing. Constipation is present in 25-50% of individuals; up to 75% of patients have fecal incontinence. Inquire about history of Ehlers-Danlos syndrome, Hirschprung disease, Congenital megacolon, Polyplies, Pneumonia, Pertussis, Malnutrition/anorexia, Myelomenigocele, Parasitic infection, Rectal neoplasm. Patients with rectal prolapse frequently have an associated dysfunction, either fecal incontinence (50%) or constipation (15-65%).

**Physical Examination**

Frequently, physical examination findings are normal. Parents provide a history of a dark or bright-red mass protruding from the child’s anus, although the child appears to be pain free or in minimal discomfort.

In false or mucosal prolapse, the mucosa shows radial folds at the anal junction, whereas a full-thickness or complete prolapse has circular folds (see the images below).

If the prolapse is present upon examination, feeling the prolapsed mucosa between fingers allows the examiner to distinguish between mucosal and full-thickness rectal prolapse.

**Complications:** Complications of rectal prolapse includes Ulceration, hemorrhage, Prolapse rupture, Incontinence, Incarceration, Strangulation, gangrene and increase Cancer risk. 

**Differential diagnoses:** It includes prolapsing rectal polyp, ileocecal intussusceptions, Submucosal venous congestion secondary to straining, Hemorrhoids, Rectal tumors. Rare sequelae of rectal prolapse include solitary rectal ulcer syndrome and inflammatory cloacogenic polyp. Both are due to ischemia and are quite rare in children.

**Investigations:** Stool for ova and parasites, Barium Enema, Proctosigmoidoscopy, Video Defecography, Sweat chloride test, Magnetic Resonance Imaging (anatomic analysis of the internal anal sphincter (IAS) and external anal sphincter (EAS). Other Tests that is Anal Manometry, Electromyography, Anal Endosonography.

**Management of rectal prolapsed in children**

**Conservative Management**

**Manual Reduction:** Parents should have gloves and lubricant and should be taught how to reduce the prolapse at home. The prolapsed bowel may be grasped with lubricated gloved fingers and pushed back in with gentle steady pressure.

Conservative management should be the first approach since it may prove useful in over 90% of children. It is aimed at treating the cause and reducing straining. It should be attempted for 1 year before surgical management is chosen. In patients with diarrhoea and constipation, rectal prolapse usually resolves when the stool pattern returns to normal. Therefore, constipation should be aggressively managed.

Constipation is treated with dietary modification (total dose per day is 5 g of fiber plus an additional 1 g for each year of age; dose for adults is 20 g once or twice daily) and stool softeners (e.g., polyethylene glycol) to reduce straining.

Adequate fluid intake should be ensured. Infectious diarrhoea or parasitic infestation should be appropriately treated.
Ayurvedic Treatment indicated in Guda Bhramśa (prolapse of the rectum)

In initial stages, rectal prolapse treatment without surgery can be done with following medicine as mention in Susruta Samhita and Astang hridyā.\[^{[x]}\]

1. **Local Svedana -Snehana:** Repositioning of protruded Guda (rectum/anus) after doing the Svedana and Snehana. After Snehana and svedana muscles flexibility will be good to repositioning the prolapsed rectum. \[^{[x]}\]

2. **Gophana bandha:** It was used for fixation of prolapsed part and to avoid repeated protrusion. This Bandha has been mentioned by Sushruta and Vagbhata in the classic specifically to prevent the rectum to prolapse further during movement when intra-abdominal pressure increased. \[^{[x], [xii]}\]

3. **Chāngeri ghrita:** It is indicated to improve the strength of muscles and it should be taken orally. In children ghrita preparation are more palatable and help to improve the muscle weakness or laxity. \[^{[xxi]}\]

4. **Mūśika taila:**\[^{[xiv]}\] The ingredients of this taila are erand taila, daśamūla and intestine of Mūśika. Erand tail (castor oil) and daśamūla both are vāta shamak which are helpful improve the local sphincter tone and prevent the prolapsed. Taila pichu should be applied at bed time for 2- 4 weeks. This oil is applied to the prolapsed part, it is placed in its normal position and bandaging is done.

5. **Jātyadi Taila:** 5-10 ml Jātyadi taila per rectum in morning and evening before each act of defecation. It helps to evacuate the stool easily by its soothing effect and further inflammation at anorectal area.

6. **Anuloman:** The preparation that is Swādīśtha Virechan Chīrna 2-3gm or 5-10 ml Abhyārīśtha should be given with water after meal twice daily. This preparation helps to relieve constipation and prevent the straining during defecation improve the prolapsed rectum.

7. **Yoga:** These Yoga exercises and poses may assist child with prolapse by improving pelvic floor support and alleviating prolapse symptoms:

   a. **Mūlabandha** ("the root" or pelvic and deep abdominal core muscle exercise) It performed correctly this exercise it should promote and improved support for the pelvic organs. Mūla bandha can be practiced on its own or incorporated into other poses such as Mountain Pose for improved prolapse support.

   b. **Tādāsana** (Mountain pose) may be a beneficial posture exercise for children with prolapse and pelvic floor dysfunction.

   c. **Prāṇāyāma** (breath exercise) can be valuable for children with prolapse. Breathing is closely integrated with the function of the pelvic floor, in fact the pelvic floor moves up and down in coordination with the breath.

**Indications for Surgical Treatment**

**Indications:** Surgical treatment is reserved for patients who do not improve with conservative management or patients with complicated rectal prolapse (e.g. recurrent rectal prolapse, painful episodes, ulceration, rectal bleeding).

**Contraindications:** The only absolute contraindication for surgery is poor general condition that precludes a major operation.

**Surgical Procedures:** The surgical procedure for prolapsed rectum are summarised below and having their won indications as per condition of prolapsed with their complications.

- Thiersch operation, Injection Sclerotherapy, Cauterization Abdominal rectopexy, Ekehorn rectopexy, Delorme procedure, Perineal resection, Lockhart-Mummery operation, Open Abdominal and Perineal Surgical Procedures, Mucosal plication with anal encircling, Levator repair and posterior suspension, Closed rectosacropexy, Laparoscopic Repairs.

**Risk of surgery:** In 2008, a Cochrane Database Review of studies available in adult literature found that all reparative procedures have similar clinical outcomes with various degrees of risk. \[^{[xxv]}\]

**Long-Term Monitoring:** All paediatric rectal prolapses should be approached as a symptom of an underlying disease. Evaluate the child for cystic fibrosis. Evaluate whether or not the child has exhibited signs of constipation or diarrhoea.

If sweat chloride test results are negative and the bowel regimen has been normal, consider proctosigmoidoscopy to rule out rectal polyps or lesions.
CONCLUSION

Treatment should be directed to the underlying cause that is *nidāna parivarjana* which is prime part of treatment. Patients who present with a prolapsed rectum should undergo manual reduction. Conservative management is appropriate in selected patients as mentioned in Ayurveda. After treating the underlying cause, conservative management is usually successful. Surgical treatment is reserved for patients who do not improve with conservative management or patients with complicated rectal prolapsed.
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