

Internal Rectal Intussusception—Fact or Fancy?

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PURPOSE: There is still considerable debate whether internal intussusception represents a functional disorder. We have reviewed our results in an effort to define its symptomatology and to assess defecography. **METHODS:** Rectopexy has been performed for internal intussusception in 37 patients. Eighteen had solitary rectal ulcer syndrome (SRUS), and 31 had anterior rectal wall prolapse. Defecography demonstrated anterior wall prolapse in 13, circular prolapse in 21, and no disorders in 3 patients. Pelvic floor function was normal. Follow-up varied from one to nine years. **RESULTS:** Twenty-six patients became asymptomatic. Anterior wall prolapses could not be palpated anymore. All SRUS lesions healed. Patients with SRUS ($P < 0.001$) or circular prolapse ($P < 0.001$) became significantly more asymptomatic. Results in patients with anterior rectal wall prolapse were significantly worse ($P < 0.001$). **CONCLUSIONS:** Internal intussusception is a distinct functional rectal disorder. Its symptomatology and findings during physical examination are aspecific. Characteristic defecographic features and presence of SRUS are indications for surgery, provided pelvic floor function during straining is normal. [Key words: Defecography; Incomplete evacuation; Rectopexy; Solitary rectal ulcer syndrome; Internal intussusception]

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There is still considerable debate whether internal rectal intussusception indeed represents the pre-stage of complete rectal prolapse or just should be considered as a variation of normal physiology. Definition of the exact clinical picture is difficult, and results of surgery are moderate.¹⁻⁶ A feeling of incomplete evacuation is commonly considered to be the major symptom of internal rectal intussusception. It has been our policy to advocate posterior rectopexy to patients with a feeling of incomplete evacuation as their major symptom, when investigation of the colon-rectum and pelvic floor did not reveal other pathology. We reviewed our surgical results in an effort to determine whether internal intussusception does exist as a functional disorder, to define its symptomatology, and to assess the diagnostic value of defecography in internal rectal intussusception.

PATIENTS

Between 1981 and 1992, posterior rectopexy has been performed for suspected internal rectal intussusception in 37 patients. Other functional disorders had been excluded by functional tests. All were referred by gastroenterologists for defecation disorders, and the diagnosis was suggested before referral in three patients. Eighteen patients were known to have solitary rectal ulcer syndrome (SRUS; 49 percent). There were 24 females and 13 males. Ages ranged from 18 to 78 (mean, 46) years.

Duration of symptoms varied from 0.5 to 10 (mean, 4.6) years. A feeling of incomplete evacuation and persistent urge resulting in frequent and severe defecation straining was considered a symptom typical for internal intussusception. It constituted the indication for surgery and was, therefore, present in all patients (100 percent). Loss of bloody mucus occurred in 19 patients (51 percent), perineal pain in 6 (16 percent), and soiling in 9 (24 percent). Impaired continence for flatus and loose stool (insufficiency) or solid stool (incontinence) was present in 12 patients (33 percent). Digital rectal examination revealed anterior rectal wall prolapse in 31 patients (84 percent).

Sigmoidoscopy, performed in all patients, showed SRUS in 18 (49 percent) patients. SRUS was located within 3 to 4 cm from the anal canal, anteriorly in 12, posteriorly in 3, and circularly in 3 patients. Diagnosis was confirmed by histology. Other abnormalities were not found.

Defecography was performed in all patients. Small residual folds measuring several millimeters, occurring approximately 3 to 7 cm from the anal canal and located mainly in the posterior rectal wall, were common findings during evacuation. They were transient in nature and considered normal.⁷ The rectum evacuated normally in all patients, and there were no signs of pelvic floor contraction during straining.

Anterior rectal wall prolapse (Fig. 1) occurred in 13 patients (35 percent), and circular prolapse creating a funnel-like configuration—as seen in complete rectal

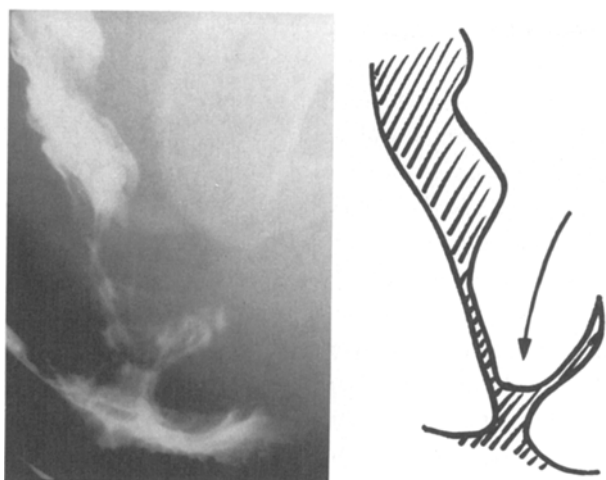


Figure 1. Anterior rectal wall prolapse. The patient is in the left lateral position, and the lower rectum and anal canal are depicted. Barium has been evacuated, the anterior rectal wall (arrow) prolapses into the anal canal, and the posterior rectal wall remains straight. Small rectal folds are seen higher in the rectum. The width of the prolapse is 5 cm, and the depth is 4 cm.

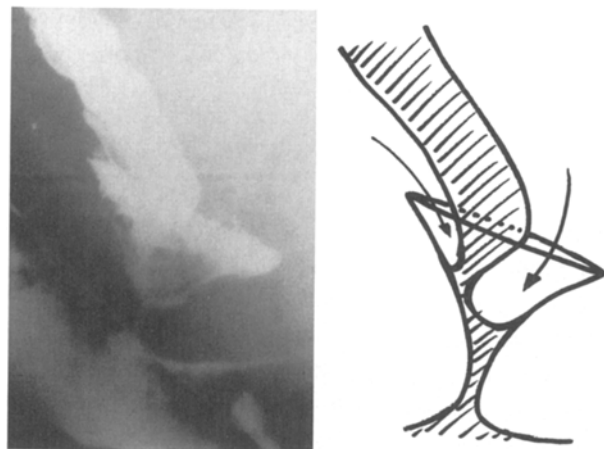


Figure 2. Circular rectal wall prolapse. The patient is in the left lateral position, and the lower rectum and anal canal are depicted. Barium has been evacuated, and both the anterior and posterior rectal wall prolapse (arrows), creating a circular internal prolapse. A funnel-like configuration is thus created.

prolapse (Fig. 2)—occurred in 21 patients (57 percent). In three patients (8 percent), no abnormalities were seen, and rectal configurations remained normal (Table 1).

All patients had electromyography of the pelvic floor to exclude spastic pelvic floor syndrome. Posterior rectopexy was performed according to Wells using a T-shaped Teflon® (Du Pont, Wilmington, DE) mesh.⁸ Follow-up varied from one to nine (mean, 6) years.

RESULTS

Twenty-six patients (70 percent) became asymptomatic; 17 of these had SRUS preoperatively. Eleven patients remained symptomatic; of these, nine had persisting symptoms, and none had SRUS. Two more had persisting perineal pain only, and one had SRUS. Anterior rectal wall prolapses could not be palpated anymore.

Solitary Rectal Ulcer Syndrome

All SRUS lesions healed within three to four weeks. Patients with SRUS had a significantly higher cure rate than patients without SRUS ($P < 0.001$).

Defecography

Twenty patients with circular rectal prolapse, four with anterior rectal wall prolapse, and two without abnormalities became asymptomatic (Table 1). Patients with circular prolapse became significantly more asymptomatic compared with patients without circular rectal prolapse ($P < 0.001$). Surgical results in patients with anterior rectal wall prolapse were significantly worse than in patients with circular prolapse or without prolapse ($P < 0.001$).

Table 1.
Results of Defecography and the Widths and Depths of Rectal Wall Prolapses in 34 Patients

	Anterior Prolapse (cm)	Circular Prolapse (cm)
No. of patients	13	21
Anterior rectal wall prolapse		
Width	1-4.5 (3.1)*	1-6 (2.7)
Depth	2-5 (3.3)	1-6 (2.9)
Posterior rectal wall prolapse		
Width	—	1-3 (2.0)
Depth	—	1-5 (2.1)

* Numbers in parentheses are means.

Digital Rectal Examination and Defecography

The anterior rectal wall prolapses found in 31 patients during digital examination were confirmed by defecography. Anterior rectal wall prolapse was present in 12 patients, circular prolapse in 18, and no abnormalities in 1 patient. In the six patients in whom digital rectal examination found no prolapse, defecography demonstrated anterior rectal wall prolapse in four.

DISCUSSION

There is still considerable debate whether internal intussusception of the rectum really exists and represents a functional disorder. Some state that it is the prestage of complete rectal prolapse, because in these patients a similar radiologic picture as in rectal prolapse is seen whereas others point at the fact that mucosal folds in the lower rectum are normal findings during evacuation straining and, therefore, consider it a variation of normal physiology.¹⁻⁷

Those who accept it as a functional disorder agree that definition of the exact clinical picture is difficult, and results of surgery are moderate.¹⁻⁶ This is in agreement with our results; symptoms were aspecific, digital rectal examination was unreliable, and 30 percent had persistent symptoms after rectopexy.

Defecography has been advocated as a suitable technique to diagnose rectal intussusception, because it adequately demonstrates the funnel-like configuration, typical for a mobile, loose rectum.^{6, 8, 9} Much confusion arose when it was reported that lower rectal folds during straining were a common phenomenon in normal patients,⁷ which was a logical explanation for the moderate results obtained by surgery.¹⁻⁵ But the rectal protrusions that create the typical funnel-like configurations in intussusception are several centimeters long (this study), whereas the physiologic rectal folds are measured in millimeters.⁷

In this study 95 percent of patients with circular rectal wall prolapse became asymptomatic after rectopexy ($P < 0.001$). The defecographic feature, the funnel-like configuration created by anterior and posterior wall prolapse, was specific and substantially accurate, with a sensitivity of 81 percent and a specificity of 91 percent.

SRUS is an infrequent condition. Its high incidence in our series is striking. Similar findings are also reported in other series.³⁻⁶ There is a definite relation between SRUS and a prolapsing rectum. The inci-

dence of complete rectal prolapse in patients with SRUS ranges from 18 to 55 percent, and healing after rectopexy occurs in most patients.¹⁰⁻¹³ SRUS is considered a mechanical lesion caused by severe and persistent straining.¹⁴⁻¹⁵ The presence of SRUS illustrates that the patient has a defecation disorder that causes a persistent urge to defecate and thus evokes the need for repeated and intense straining. This mode of straining pushes the prolapsing rectal wall into the anal canal where its mucosa is repeatedly damaged and finally starts to ulcerate. Correction of the defecation disorder removes the urge to defecate and the need for straining and thus cures the ulceration.

The results of rectopexy for SRUS without overt prolapse in the literature have been uniformly unsatisfactory, suggesting that prolapse is not the only cause.^{5, 16-18} In our series all ulcerations healed ($P < 0.001$). We believe that our high cure rate for SRUS should be attributed both to adequate preoperative screening and surgical technique.⁸

We routinely perform pelvic floor electromyography in patients with SRUS to exclude spastic pelvic floor syndrome.¹⁹ Patients with this disorder contract instead of relax their pelvic floor muscles during defecation straining, which leads to a functional rectal outlet obstruction. The rectum cannot be emptied, which causes constipation and a persistent feeling of urge that leads to straining. Spastic pelvic floor syndrome is also related to SRUS; the reported incidence of this phenomenon in patients with SRUS varies from 9 percent to even 50 percent.^{14, 20-22} Pelvic floor relaxation during straining can be relearned by biofeedback treatment.²³ When successful it leads to normal defecation without straining and cure of the rectal ulceration.¹⁷

Anterior rectal wall prolapse is an interesting phenomenon. It is a physical sign that is believed to be associated with a spectrum of conditions. It is considered to be a precursor of complete rectal prolapse. It is also seen in patients with descending perineum syndrome, where it is believed to cause symptoms by obstructing the passage of feces.²⁴ In this and other^{3, 4, 25, 26} series, however, it was in most cases unrelated to any symptom at all because there was no change in symptomatology, despite adequate correction by rectopexy. It is, therefore, likely that anterior rectal wall prolapse is commonly part of a normal aging process rather than a prodromal physical sign of a defecation disorder.²⁶

CONCLUSIONS

Internal rectal intussusception is a distinct functional rectal disorder. Its symptomatology and findings during physical examination are aspecific. It can only be diagnosed on characteristic defecographic features. The presence of SRUS constitutes another indication for surgery, provided pelvic floor function during straining is normal.

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