

RECTAL PROLAPSE - 1

Definition

Full thickness protrusion of the rectal wall through the anus

Epidemiology

- True incidence unknown because of underreporting
- Peak incidence in women > 60 yrs old.
- Higher incidence of other pelvic floor disorders (bladder or uterine prolapse, cystocele, enterocele, rectocele) than in the general population

Etiology

- Unknown
- Theories:
 - defect of the pelvic floor
 - long-standing constipation and straining
 - progression of an internal rectal intussusception. In one study using defecogram studies, only 1 out of 38 pts progressed to full thickness rectal prolapse.
 - Mellgren A, Schultz I, Johansson C, Dolk A. Internal rectal intussusception seldom develops into total rectal prolapse. *Dis Colon Rectum*. 1997 Jul;40(7):817-20.
 - pudendal nerve damage leading to dysfunction of anal sphincters
- Anatomic features common to many patients include:
 - weak anal sphincter with levator diastasis
 - deep anterior pouch of Douglas
 - poor posterior rectal fixation with long rectal mesentery
 - redundant rectosigmoid
- Unknown whether these features are the cause or result of rectal prolapse

Risk factors

- long-standing constipation
- chronic straining during defecation
- pregnancy, although 35% of female patients are nulliparous
- previous surgery
- neurologic disease (trauma/lumbar disc disease, spinal tumors, MS)

Clinical Presentation

- reducible anal mass
- fullness at the anus with sneezing, coughing, or defecation.
- fecal incontinence, bloody or mucoid discharge
- constipation
- foul odor, difficulty maintaining hygiene
- changes in urinary function

- concurrence of other pelvic organ prolapse

Differential Dx

- protruding hemorrhoids
- polyps
- rectal carcinoma
- other prolapsed organs

Diagnostic Tools

- Clinical diagnosis
- Defecogram—to visualize internal intussusception or obstruction
- Anoscopy/rectosigmoidoscopy/colonoscopy—In one study, patients with rectal prolapse had a 5.7% frequency of associated colorectal cancer.
 - Basson R: Association of rectal prolapse with colorectal cancer. Surgery 119:51, 1996.
- Anal rectal manometry—significance unclear.

Treatment

- Medical—none, but bulking agents and stool softeners are often tried
- Surgical—rectal prolapse is an indication for surgery
 - Abdominal
 - Perineal
 - Laparoscopic

| Year | Procedure | Description |
|-------------|-------------------------|--|
| 1912 | Douglas closure | Transabdominal, closure of rectouterine pouch |
| 1923 | Suture Rectopexy | Transabdominal, posterior fixation |
| 1937 | Sigmoidopexy | Transabdominal, anterior fixation |
| 1942 | Anterior levatoropexy | Transabdominal |
| 1959 | Ivalon Sling | Transabdominal posterior fixation (infection & constp) |
| 1962 | Anterior resection | Transabdominal, resection of sigmoid |
| 1964 | Rehn-Delorme | Perineal, mucosal sleeve resection |
| 1969 | Frykman-Goldberg | Transabdominal, sigmoid resection and rectopexy |
| 1971 | Altemeier | Perineal, rectosigmoidectomy |
| 1981 | Thiersch wire | Perineal, anal encirclement |
| 1990s | Laparoscopic | Modified transabdominal procedures |

- Still using the same surgical treatments developed over 30 years ago.

Literature Review from:

Schiedeck TH, Schwandner O, Scheele J, Farke S, Bruch HP. Langenbecks Arch Surg. 2004 Mar 5.

Table 1 Perineal rectosigmoidectomy (Altemeier procedure) for rectal prolapse

| Author | Year | Number | Recurrence (%) | Morbidity (%) | Mortality (%) |
|------------------|------|--------|----------------|---------------|---------------|
| Altemeier et al. | 1971 | 106 | 3 | 24 | 0 |
| Williams et al. | 1992 | 114 | 11 | 12 | 0 |
| Johansen et al. | 1993 | 20 | 0 | 5 | 1 |
| Agachan et al. | 1997 | 32 | 12.5 | 15.5 | 3 |
| Kim et al. | 1999 | 183 | 16 | 14 | 0 |
| Kimmins et al. | 2001 | 63 | 6.4 | – | 0 |

Table 2 Transabdominal resection procedures (laparoscopic and conventional) for rectal prolapse (ORR open resection–rectopexy, PFR pelvic floor reconstruction, RM rectal mobilization, LARR laparoscopic resection–rectopexy)

| Author | Year | Number | Procedure | Recurrence (%) | Constipation improved (%) | Continence improved (%) |
|--------------------|------|--------|-----------|----------------|---------------------------|-------------------------|
| Deen et al. | 1994 | 10 | ORR+PFR | 0 | Yes | 90 |
| Huber et al. | 1995 | 39 | ORR | 0 | 42 | 65 |
| McKee et al. | 1992 | 9 | ORR | 0 | 50 | 0 |
| Duthie and Bartolo | 1992 | 29 | ORR | – | Yes | 78 |
| Madoff et al. | 1992 | 47 | ORR | 6 | 50 | 38 |
| Stevenson et al | 1998 | 30 | LARR | 0 | 64 | 70 |
| Bruch et al. | 1999 | 72 | LARR | 0 | 76 | 64 |
| Kellokumpu et al | 2000 | 34 | LARR | 7 | 70 | – |
| Madbouly et al | 2003 | 11 | LARR | 0 | – | 91 |

- Recurrence is significantly lower with the abdominal procedures (Frykman-Goldberg).

Table 3 Delorme's procedure for rectal prolapse

| Author | Year | Number | Recurrence (%) | Morbidity (%) | Mortality (%) |
|--------------------|------|--------|----------------|---------------|---------------|
| Uhlig and Sullivan | 1979 | 44 | 6.8 | 34 | 0 |
| Lechoux et al. | 1995 | 85 | 13.5 | 14 | 1.2 |
| Senapati et al. | 1994 | 32 | 12.5 | 6.3 | 0 |
| Oliver et al. | 1994 | 40 | 22 | 62.5 | 2.5 |
| Kling et al. | 1996 | 6 | 16.7 | 0 | 0 |
| Pescatori et al. | 1998 | 33 | 21 | 45 | 0 |
| Watkins et al. | 2003 | 52 | 10.0 | 4 | 0 |
| Tsunoda et al. | 2003 | 31 | 13.0 | 13.0 | 0 |

- Comparison of 2 perineal procedures (table 2 & 3)—lower recurrence with Altemeier compared with Delorme (0-16 vs. 6.8-22) (*mean: 8.15 vs 14.4*)
- Large range for morbidity, study dependent

Azimuddin K, Khubchandani IT, Rosen L, Stasik JJ, Riether RD, Reed JF 3rd (2001). Am Surg 67:622–627.

- Retrospective study, 1989-1999
- 36 perineal proctosigmoidectomies (PPS), 29 abdominal procedures [17 anterior resections (AR) and 12 Ripstein procedures (RP)]
- Operating time and length of hospital stay were shorter for the PPS group ($p < 0.001$)
- Post-op complication rates lower in the PPS group (PPS 8.3%, AR 64.7%, RP 50%) ($p < 0.001$). Major early complications included postoperative presacral hematoma.
- 6 patients (16%) in the PPS group developed recurrence at a mean follow-up of 50 months. No full-thickness recurrence was noted after AR or RP.
- **CONCLUSION:** abdominal procedures (AR and RP) have the lowest recurrence but at a significantly higher cost in terms of complications. PPS is a valuable option for pts with comorbidities.

Kim DS, Tsang CB, Wong WD, Lowry AC, Goldberg SM, Madoff RD (1999). Dis Colon Rectum 42:460–466

- 372 patients, from 1976-1994, chart review and f/u.
- 183 patients → Altemeier, and 161 patients → Frykman-Goldberg.
- % of pts with other medical problems: Altemeier 61% vs. FG 30%, $p = 0.00001$.
- Abdominal procedures were associated with a longer length of stay as compared with perineal rectosigmoidectomy (8 vs. 5 days, $p = 0.001$).
- There was no **significant** difference in morbidity, with 14 percent for perineal rectosigmoidectomy vs. 20 percent for abdominal rectopexy.
- Perineal procedures had a higher recurrence rate (16 vs. 5 percent, $p = 0.002$).

- **CONCLUSIONS:** Abdominal rectopexy with bowel resection is associated with low recurrence rates. Perineal rectosigmoidectomy provides shorter length of stay, but recurrence rates are much higher. No difference in morbidity.

Agachan F, Reissman P, Pfeifer J, Weiss EG, Nogueras JJ, Wexner SD (1997). South Med J 90:925–932

- Compared Delorme's procedure, perineal rectosigmoidectomy, or perineal rectosigmoidectomy with levatoroplasty, 1989-1995, 61 pts.
- Scored incontinence from a range of 1-20. Compared pre- & post-op scores: Delorme: 15.9→11.1
 Altemeier: 16.3→6.7
 Altemeier, lev.: 15.7→4.9*
- % of patients with recurrence: (comparison of D & PRSL is significant)
 Delorme: 38%
 Altemeier: 13%
 Altemeier, lev. 5%*
- average # of months to recurrence: ($p < 0.05$)
 Delorme 8 mo
 Altemeier 15.7 mo
 Altemeier, lev 19.5 mo*
- **CONCLUSIONS:** Perineal rectosigmoidectomy with levatoroplasty has best function results, lowest rate of recurrence, longest time to recurrence.

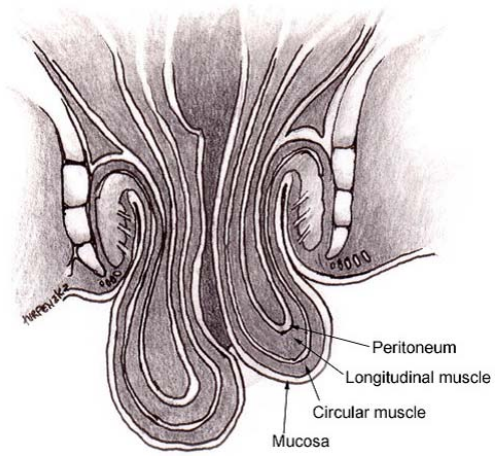
Solomon MJ, Young CJ, Evers AA, Roberts RA. Br J Surg. 2002 Jan; 89(1):35-9.

- 40 patients, randomized controlled trial
- end points: mobility and liquid diet by POD1, solid diet by POD 2, and discharge before POD 5
- % of patients that achieved clinical objectives: laparoscopy 75%, open abd 37% ($p < 0.01$)
- 0 recurrence in lap group, 1 in open group
- **CONCLUSION:** long term clinical outcome in terms of effectiveness and safety are comparable to open abd procedures, in the perioperative state less morbidity, shorter hospital stays, cost effective?

CONCLUSIONS

- Abdominal vs. perineal vs. laparoscopic procedures (consider pt's age & comorbidities)
 - abd—lower recurrence rates, higher morbidity (younger pts)
 - per—higher recurrence rates, lower morbidity (older pts with comorbidities)
 - lap—longer surgery times, lower post-op morbidity, no effect on long term morbidity, recurrence rates comparable with abdominal procedures
- Need to better understand etiology and have more randomized control trials of treatment

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 January 13, 2005



ADAM.

