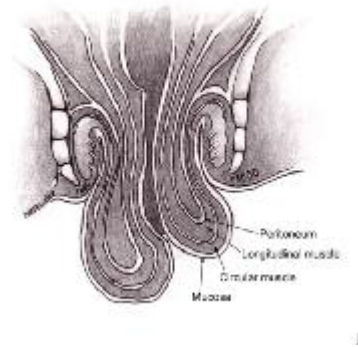
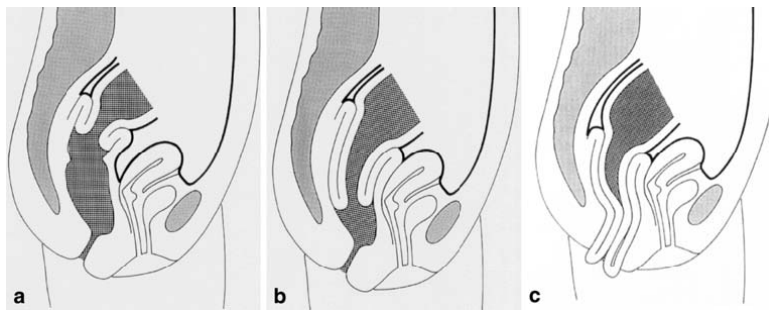


## RECTAL PROLAPSE – 3



### Types:

- rectal intussusception above the anal canal (internal or incomplete prolapse);
- intussusception of the rectal wall into the anal canal
- complete (“full-thickness”) rectal prolapse through the anus, MC



### Epidemiology:

- True incidence unknown because of underreporting
- 4<sup>th</sup>-7<sup>th</sup> decade
- 80-90 % women
  - 35 % nulliparous
- High incidence of other pelvic floor disorders (bladder/uterus prolapse)
- Young patient: psychiatric disorders
- Pediatric: diagnosed by age 3
  - 20% cystic fibrosis

### Etiology:

- Unknown
- 2 theories: weakness of the pelvic floor
  - Moschcowitz 1912 rectal prolapse caused by sliding herniation of pouch of Douglas through the pelvic floor fascia into the anterior aspect of the rectum
  - Broden and Snellman 1968 full thickness rectal intussusception extending beyond anal verge

**Predisposing factors:**

- Long standing constipation >50 %
- Chronic straining during defecation
- Pregnancy (35 % are nulliparous!)
- Neurologic (psychiatric) disorder ( MS, spinal lesions, cauda equina syndrome)
- Previous surgery
- Schistosomiasis, Marfan syndrome, Ehlers-Danlos syndrome

**Common anatomic features:** cause/result?

- weak anal sphincter
- diastasis of the levator ani
- deep anterior pouch of Douglas
- poor post rectal fixation with long rectal mesentery
- Redundant rectosigmoid

**Clinical presentation:**

- Mass protruding through anus
- Pain variable
- Fecal incontinence/constipation
- Pruritis ani
- Anal discharge
- 10-25 %: uterine/ 35% bladder prolapse
- Thickened, ulcerated, bleeding if chronically prolapsed
- Incarceration rare
- Classic sign: concentric rings of mucosa

**Differential Diagnosis**

- Prolapsed incarcerated internal hemorrhoids
  - concentric vs radial invaginations
  - Fever, pain, urinary retention vs easily reducible, painless)
- Polyps
- Rectal CA
- Other prolapsed organs

**Workup:**

- Detailed history
- Physical exam:
  - observation of straining on toilet
  - evaluation of tone and contractibility of sphincter mechanism
- Video Defecography: if not clinically obvious.
  - visualize obstruction or internal intussusception
- Anal manometry/pudendal nerve terminal motor latency (PNTML) :
  - evaluate symptoms of incontinence.

- Significance unclear.
- Nerve damage → postop high rate of incontinence
- Barium enema: evaluate entire colon. Older patients to rule out neoplasm
- Anoscopy/rectosigmoidoscopy/colonoscopy: 5.7% association of rectal prolapse with neoplasm. Stenosis/ulcers/inflammatory lesions...
- Complete pelvic floor examination due to multiple pelvic organ prolapse

### Treatment:

- Medically:
  - none
  - Bulking agents
  - stool softeners
- Surgery:
  - Indication → existence of rectal prolapse
  - Contraindication → patient's comorbidities/ability to tolerate surgery
  - **Approach:** abdominal/perineal/laparoscopic

### Abdominal procedure:

- Lower recurrence
- Greatest morbidity
- Younger/healthier patients
- Anterior resection 1962
- marlex rectopexy 1959
- suture rectopexy 1923
- resection rectopexy 1969

### *Anterior resection 1962:*

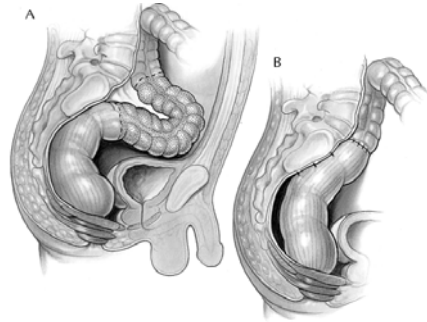
- removal of the redundant rectosigmoid
- fixation of the rectum to the sacrum by formation of adhesions
- recurrence rate: up to 7 %-9%, morbidity: 15-29%
- serious postop complications: SBO, ureteral injury, bleeding, leak

### *Rectopexy:*

- fixation of the rectum to the sacrum is re-established → direct suturing, Teflon, Marlex, Vicryl mesh
- recurrence rates low 3-10%, morbidity: 3-29%
- post op complications: mesh infection, rectal stricture, intervertebral infections
- rare severe complications: large bowel obstruction, rectovaginal fistulas (mesh erosions), lethal fecaloma
- not performed if pt has large component of constipation and very redundant sigmoid colon

*Resection rectopexy ( Frykman Goldberg procedure) 1969: combined anterior resection and marlex rectopexy*

- lowest recurrence rates 3-4%, morbidity 4-23%
- preferred procedure in pt with rectal prolapse associated with constipation ( 22% post op constipation vs. 88% in rectopexy alone)



Perineal procedures:

- Higher recurrence rate
- Lower morbidity rate
- Spinal anesthesia
- Short operative time
- Elderly /debilitated patients
  
- Anal encirclement 1981
- Delorme mucosal sleeve resection 1964
- Altemeier perineal rectosigmoidectomy 1971

*Anal encirclement, Thiersch wire 1981*

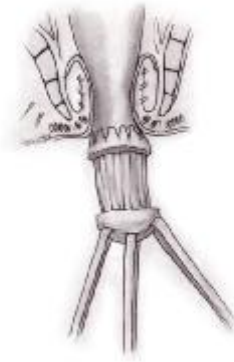
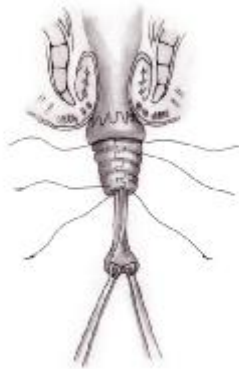
- for debilitated patients
- encircling the anus with prosthesis to narrow it.
- Tunneling a mesh circumferentially around the anus
- advantage: local anesthesia
- no resection of the prolapse, prolapse persists internally, anatomic abnormality not fixed
- complications: mesh erosion, rectal stenosis, infection, mesh breakage
- reoperation in 25 % of patients

*Delorme procedure 1964*

- transrectal approach
- resection involves only the mucosa of the rectal prolapse
- prolapsed muscle is pleated with a suture
- for small mucosal prolapse in debilitated patients
- recurrence rates 3-38%

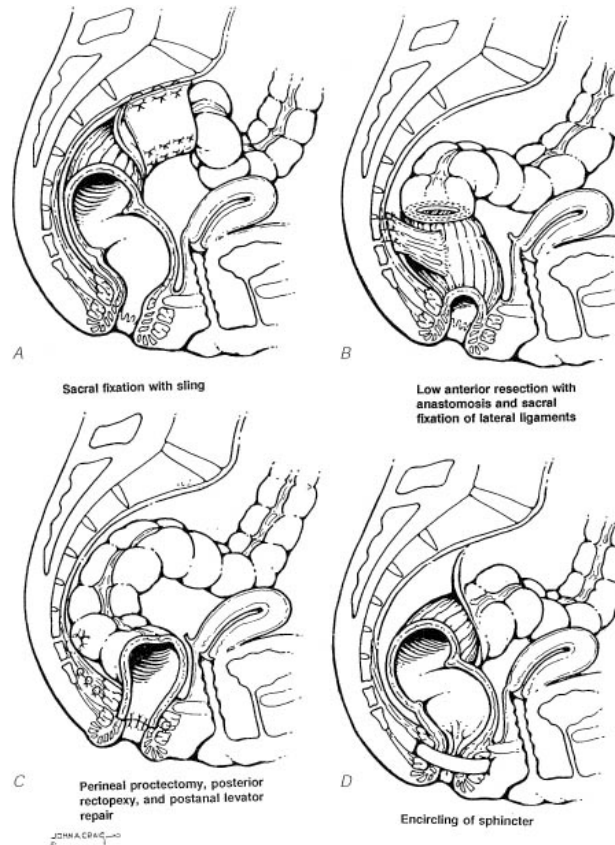
### *Altemeier perineal rectosigmoidectomy 1971*

- A full-thickness circumferential incision is made in the prolapsed rectum at about 1-2 cm from the dentate line.
- The hernia sac is then entered, and the prolapse is delivered.
- The mesentery of the prolapsed bowel is serially ligated until no further redundant bowel can be pulled down.
- The bowel is transected and hand sewn to the distal anal canal or stapled using a circular stapler.
- Repair of levator muscle diastasis may be performed by placating the levator ani muscles anteriorly ( anterior levatoroplasty), which may help improve continence.
- recurrence rate of only 2.8 %
- procedure of choice when prolapsed rectum is incarcerated and gangrenous



### Laparoscopy

- Increasingly popular
- decreased morbidity of the abdominal approach
- simultaneous repair of other defects.
- Long term results are still being studied.
- Advantages of less pain?
  - Shorter hospital stay, early recovery...



### ***Rectal prolapse: which surgical option is appropriate?***

T. H. K. Schiedeck<sup>1</sup>, O. Schwandner<sup>1</sup>, J. Scheele<sup>1</sup>, S. Farke<sup>1</sup> and H.-P. Bruch<sup>1</sup>

**Table 3** Delorme's procedure for rectal prolapse (literature review)

Author	Year	Number	Recurrence (%)	Morbidity (%)	Mortality (%)
Uhlig and Sullivan [10]	1979	44	6.8	34	0
Lechaux et al. [11]	1995	85	13.5	14	1.2
Senapati et al. [12]	1994	32	12.5	6.3	0
Oliver et al. [13]	1994	40	22	62.5	2.5
Kling et al. [14]	1996	6	16.7	0	0
Pescatori et al. [15]	1998	33	21	45	0
Watkins et al. [16]	2003	52	10.0	4	0
Tsunoda et al. [17]	2003	31	13.0	13.0	0

**Table 4** Perineal rectosigmoidectomy (Altemeier procedure) for rectal prolapse (literature review)

Author	Year	Number	Recurrence (%)	Morbidity (%)	Mortality (%)
Altemeier et al. [9]	1971	106	3	24	0
Williams et al. [18]	1992	114	11	12	0
Johansen et al. [19]	1993	20	0	5	5
Agachan et al. [20]	1997	32	12.5	15.5	3
Kim et al. [21]	1999	183	16	14	0
Kimmins et al. [22]	2001	63	6.4	–	0

**Table 5** Transabdominal resection procedures (laparoscopic and conventional) for rectal prolapse (literature review) (*ORR* open resection-rectopexy, *PFR* pelvic floor reconstruction, *OAR* open anterior resection, *RM* rectal mobilization, *LARR* laparoscopic resection-rectopexy)

Author	Year	Number	Procedure	Recurrence (%)	Constipation improved (%)	Continence improved (%)
Deen et al. [32]	1994	10	ORR+PFR	0	Yes	90
Huber et al. [33]	1995	39	ORR	0	42	65
McKee et al. [27]	1992	9	ORR	0	50	0
Cirocco and Brown [34]	1993	41	OAR+RM	7	18	48
Duthie and Bartolo [30]	1992	29	ORR	–	Yes	78
Madoff et al. [28]	1992	47	ORR	6	50	38
Stevenson et al. [35]	1998	30	LARR	0	64	70
Bruch et al. [2]	1999	72	LARR	0	76	64
Kellokumpu et al. [36]	2000	34	LARR	7	70	–
Madbouly et al. [37]	2003	11	LARR	0	–	91

- Comparison perineal procedures: lower recurrence with Altemeier vs. Delmore ( 0-16 vs. 6.8-22)
- Recurrence abdominal procedures lower compared to perineal procedures

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