Rectal Prolapse

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Residents' Rounds

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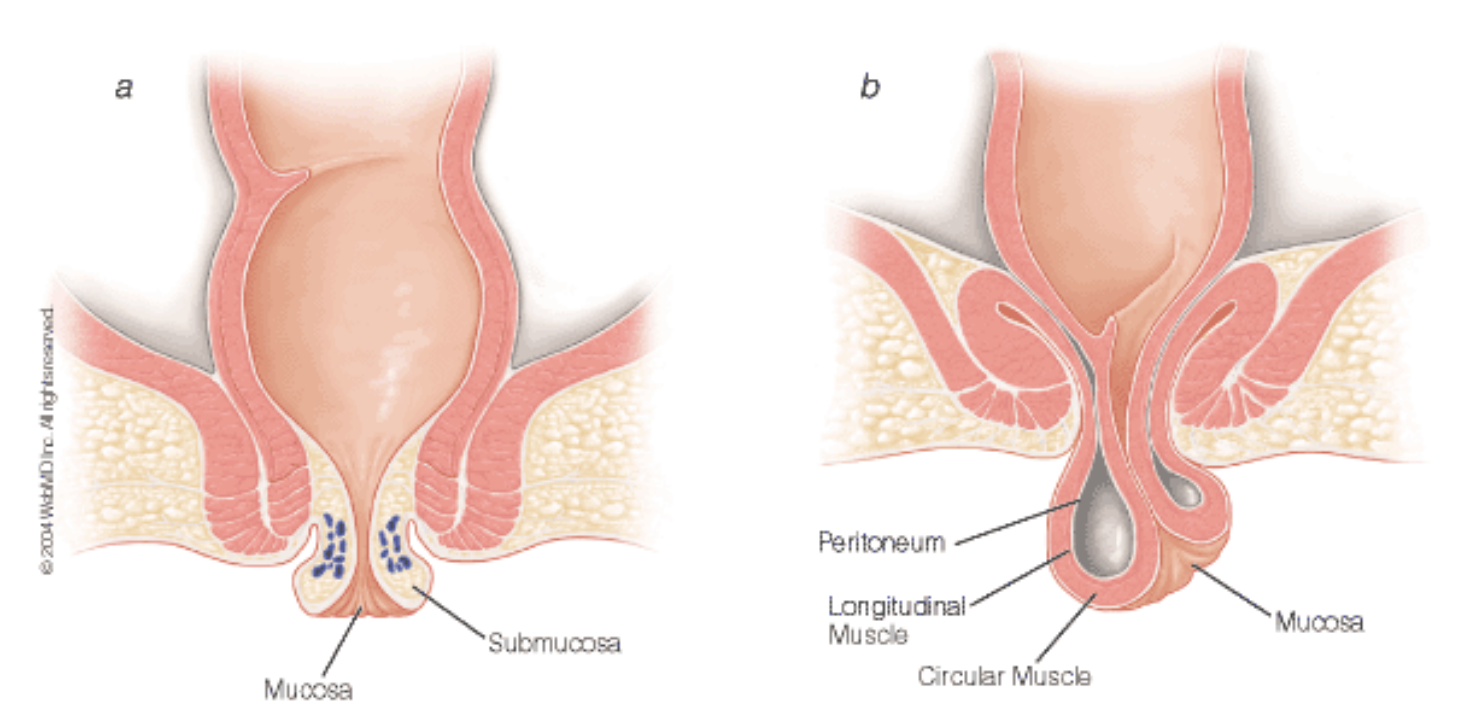
Outline:

- Definition / classification
- Epidemiology
- Pathophysiology
- Presentation
- Management
- Cases

Definition / classification

- Complete rectal prolapse (procidentia)
  - Full-thickness protrusion of rectum
    - 1st Degree: internal
    - 2nd Degree: visible at anal verge on straining
    - 3rd Degree: external
- Incomplete (Mucosal) prolapse
  - Protrusion of mucosa only, with muscular layers of rectum remaining in place

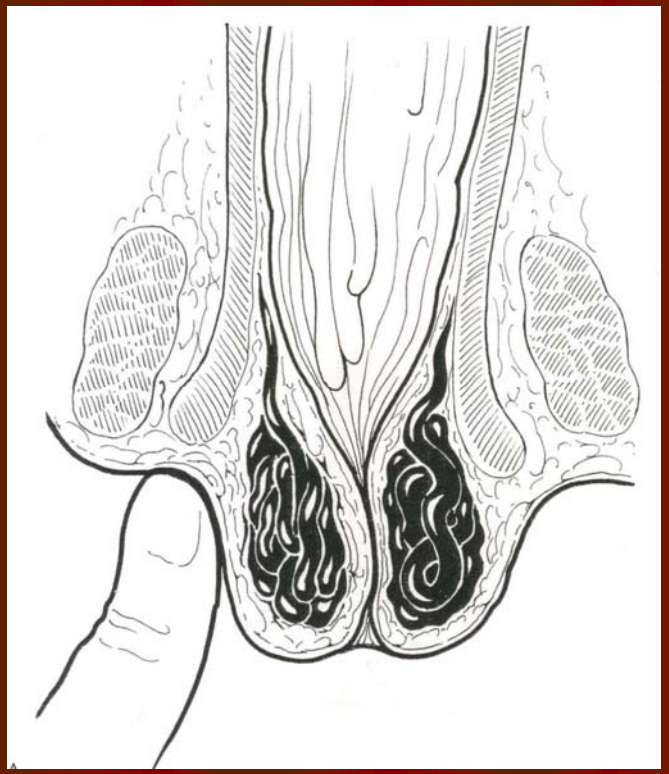
Definition / Classification



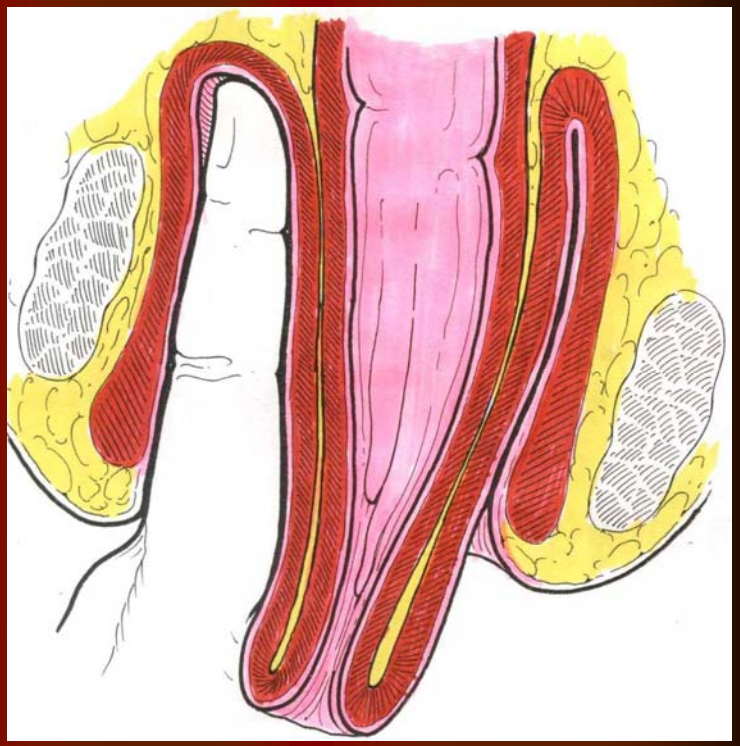
Mucosal Prolapse

Complete Prolapse

Definition / Classification



Mucosal Prolapse



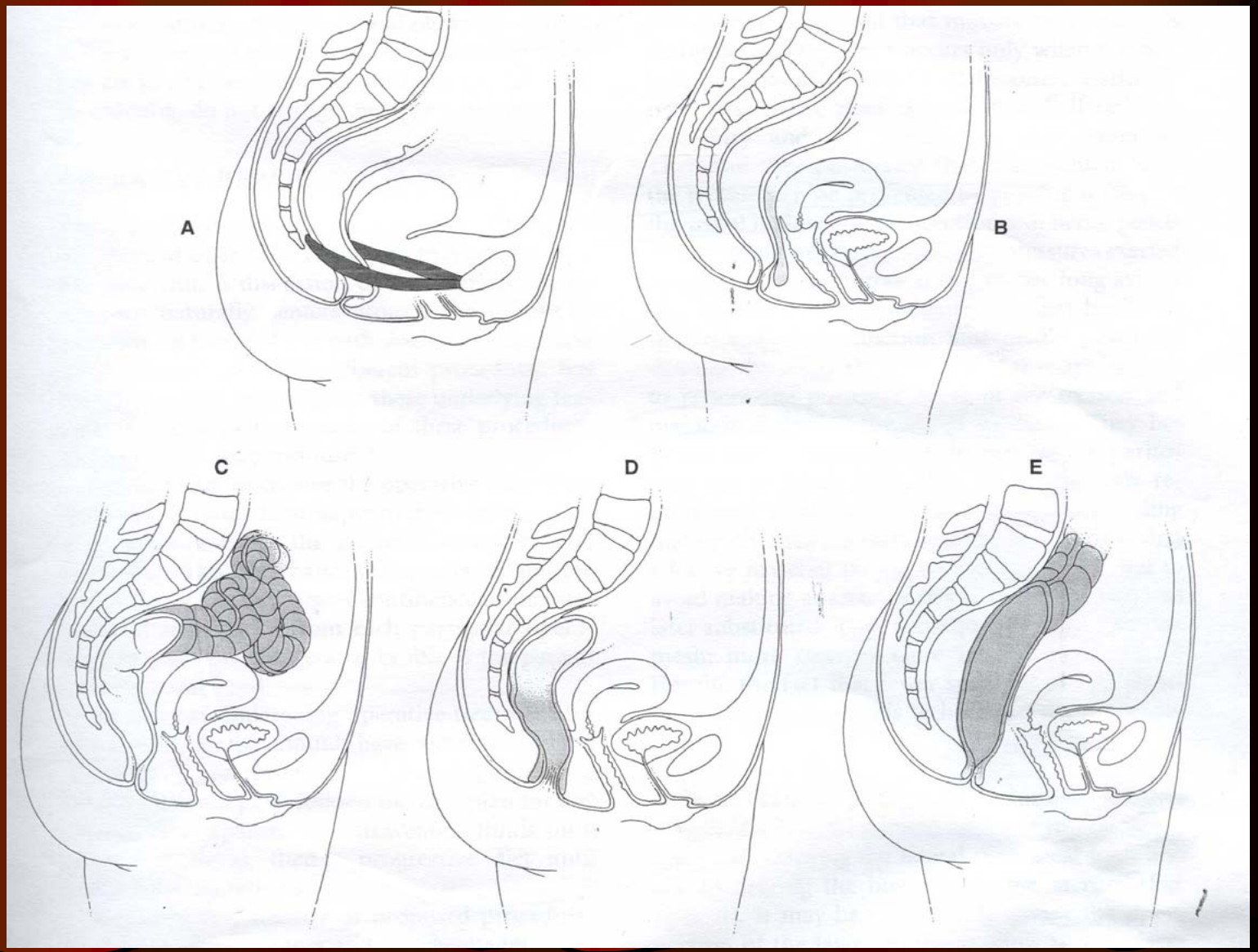
Complete Prolapse

Epidemiology

- Gender
  - F : M = 6:1
- Age
  - Women
    - Peak age 70
  - Men
    - No relation to age
    - Often concurrent psychiatric / neurologic disorders

Pathophysiology

- Associated Anatomic Characteristics
  - Diastasis of the levator ani / loose endopelvic fascia
  - Abnormally deep cul-de-sac (pouch of Douglas)
  - Redundant sigmoid colon
  - Patulous anal sphincter
  - Loss of the rectal sacral attachments
  - Pudendal nerve damage


A
B
C
D
E

Pathophysiology

- Associated functional disorders
  - Conditons which ↑IAP
    - Chronic constipation & straining, COPD, CF
  - Neurologic disorders
    - Paraplegia, myelomeningocoele, CVA, MR
  - Psychiatric disorders

Presentation

- Mass sensation
  - Spontaneously reducible
  - Digitally reducible
  - Incarcerated
- Fecal incontinence (50% - 75%)
- Urinary incontinence (35%)
- Diarrhea (15%)
- Constipation
- Bloody / mucous discharge

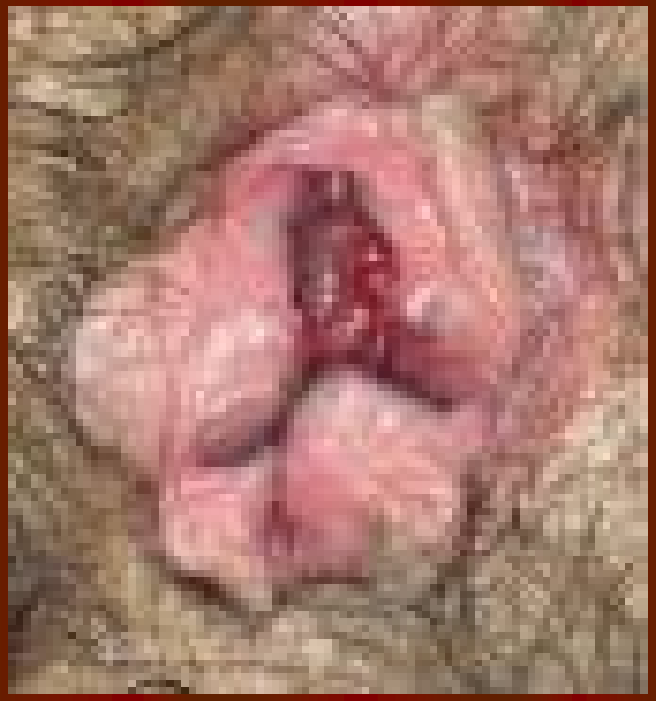
Investigations

- Hx
  - Degree / reducibility of prolapse
  - Presence of constipation
  - Presence of incontinence
  - Associated urogenital symptoms
  - Possibility of malignancy
- PMH
  - Comorbidities & risk for O.R.

Investigations

- P/E
  - Exam on straining:

P/E: Differential Diagnosis?



P/E: Differential Diagnosis

- Rectal prolapse
  - Concentric folds
- Hemorrhoidal tissue
  - Radial invaginations
- Prolapsed rectal polyp
- Prolapsed rectal CA

Investigations

- P/E
  - Exam on Straining
- Colonoscopy / Sigmoidoscopy
  - r/o malignancy
- +/- Colonic Transit Studies
- +/- Anal manometry
- +/- Pudendal nerve terminal motor latencies
- +/- Defecography

Surgical Management

- Over 50 procedures described:
  - Abdominal / Perineal
  - Rectopexy / Resection / Combined
  - Open / Laparoscopic

Perineal:

- Anal encirclement (Thiersch)
- Mucosal sleeve resection (Delorme)
- Perineal rectosigmoidectomy (Altemeier)

Transabdominal :

- Rectopexy
  - Suture
  - Anterior sling (Ripstein)
  - Posterior sling (Wells)
  - Ivalon sponge
- Resection
- Resection rectopexy (Frykman-Goldberg)

- Laparoscopic repairs
  - Rectopexy
    - Mesh / suture
  - Resection rectopexy

Surgical Management

- Cochrane review 2003
  - Issues:
    - Perineal vs. abdominal
    - Different types of rectopexy
    - Open vs. laparoscopic
  - Outcomes:
    - Recurrence
    - Incontinence

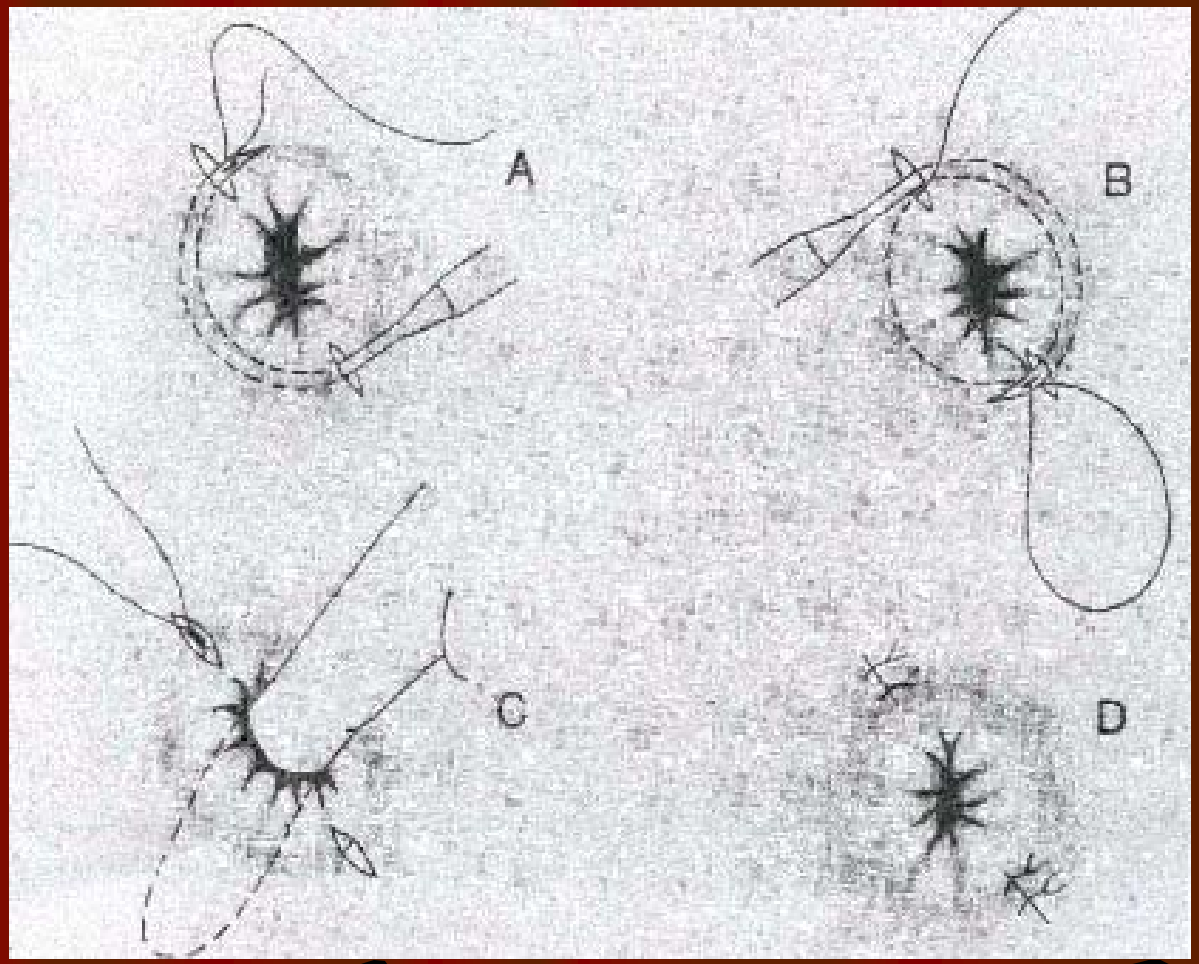
Surgical Management

- Cochrane review 2003
  - # of relevant trials found was small
    - Sample sizes small
    - Methodoligical weaknesses
  - Unable to identify or refute clinically important differences between alternative surgical operations
  - Recommend larger RCTs

Perineal: Thiersch

- Concept
  - reinforce anal sphincter:
    - fix rectum to surrounding structures through induction of tissue reaction to foreign material
- Procedure
  - wire / suture / synthetic mesh placed around external sphincter through 2 small incisions
  - knot tightened & buried

Perineal: Thiersch



Perineal: Thiersch

- Advantage
  - Local anesthesia
- Disadvantages
  - Does not correct underlying problem
  - High recurrence (7-59%) & complication rate[1]
- Complications
  - Breakage of wire, erosion into rectum, sloughing of overlying skin, perineal sepsis, fecal impaction

Perineal: Delorme

- Concept
  - Resect redundant mucosa and remove laxity in rectal wall through plication of muscle
- Procedure

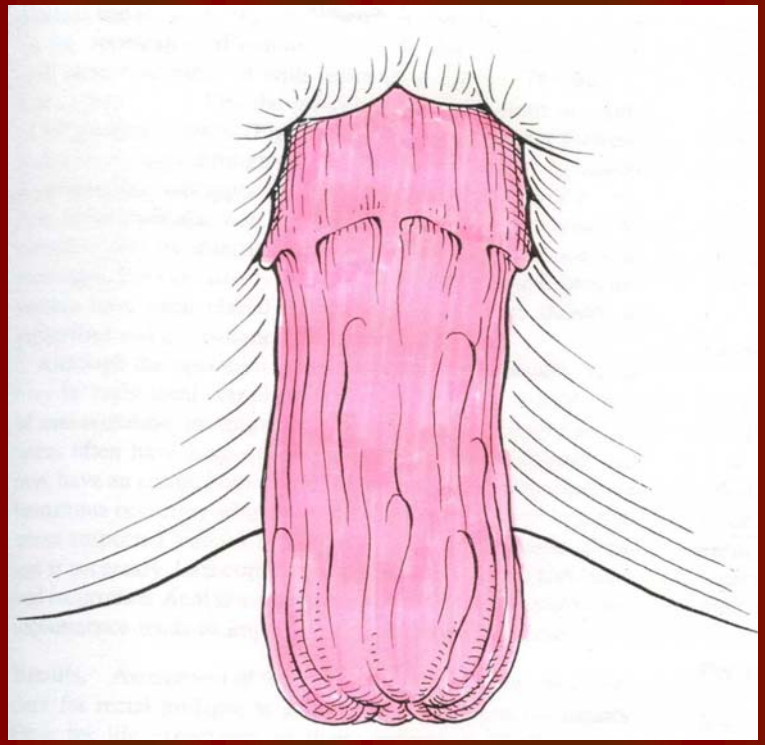
A. With rectum everted, mucosa is incised and dissected away from muscular tube
   - 1-2 cm above dentate to apex of prolapsing segment

B. Muscular tube plicated with sutures to form a muscular pessary

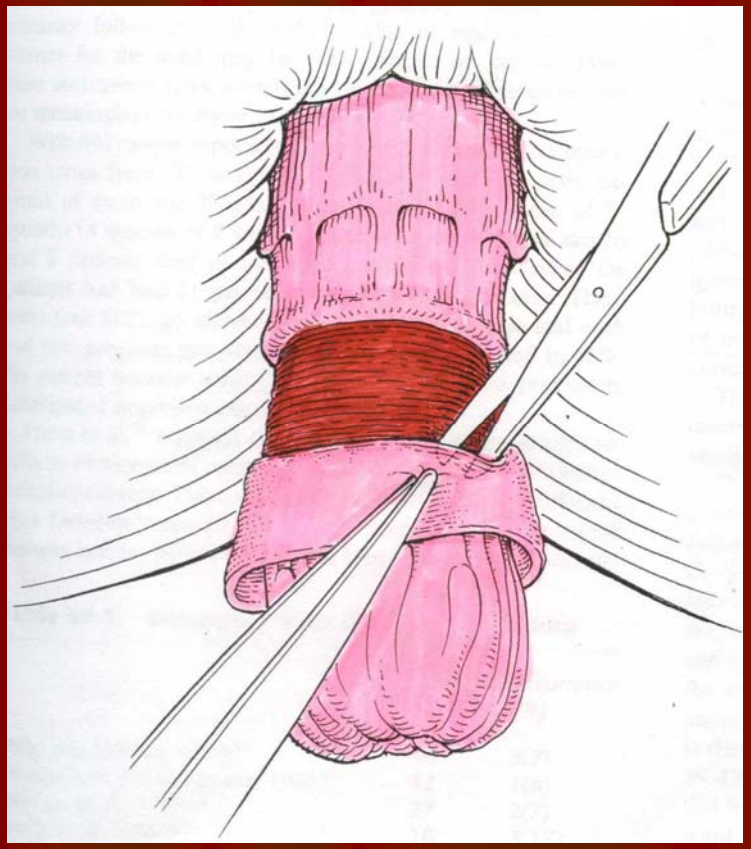
C. Mucosa-to-mucosa anastomosis

D. Spontaneous reduction into anatomic position

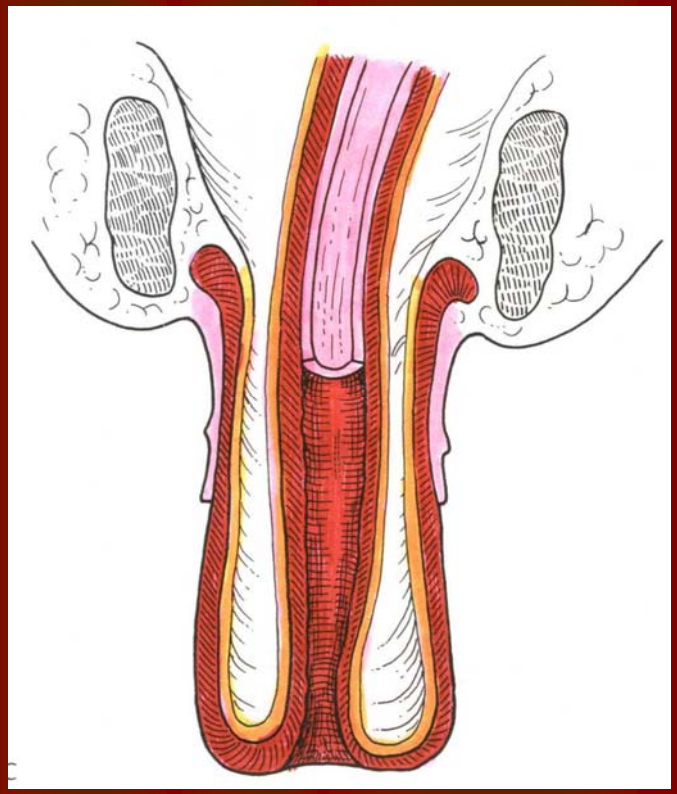
Perineal: Delorme



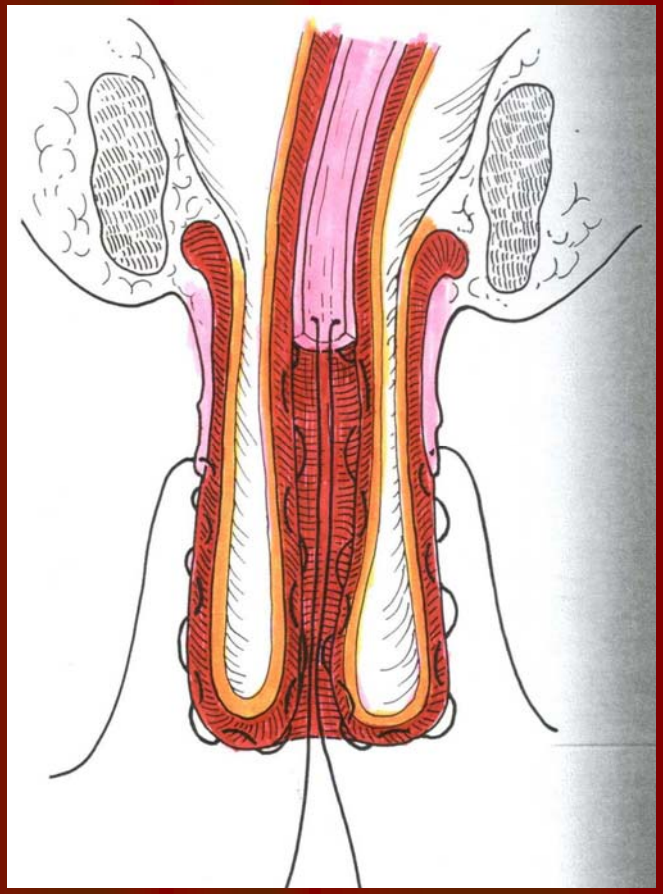
Perineal: Delorme



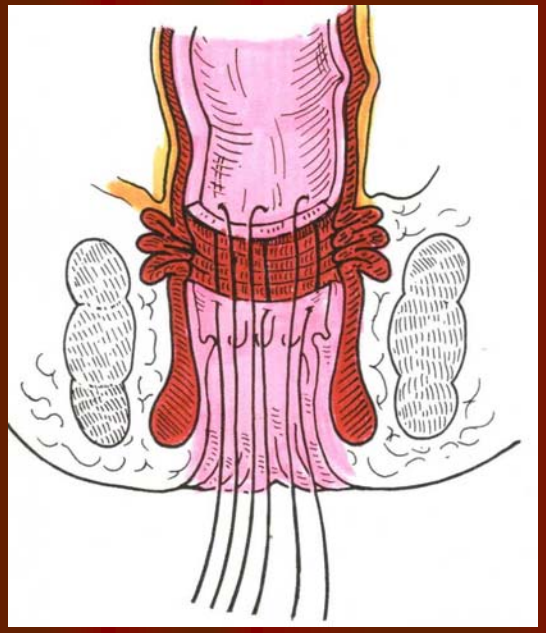
Perineal: Delorme



Perineal: Delorme



Perineal: Delorme



Perineal: Delorme

- Advantages:
  - Local / regional anesthesia
  - Lower morbidity[2]
    - Avoids laparotomy
    - Avoids full thickness anastomosis
- Disadvantages
  - Tedious dissection
  - High recurrence (12-38%)[2-8]
  - Reduced improvement in incontinence (25-67%)[8]

Perineal: Delorme

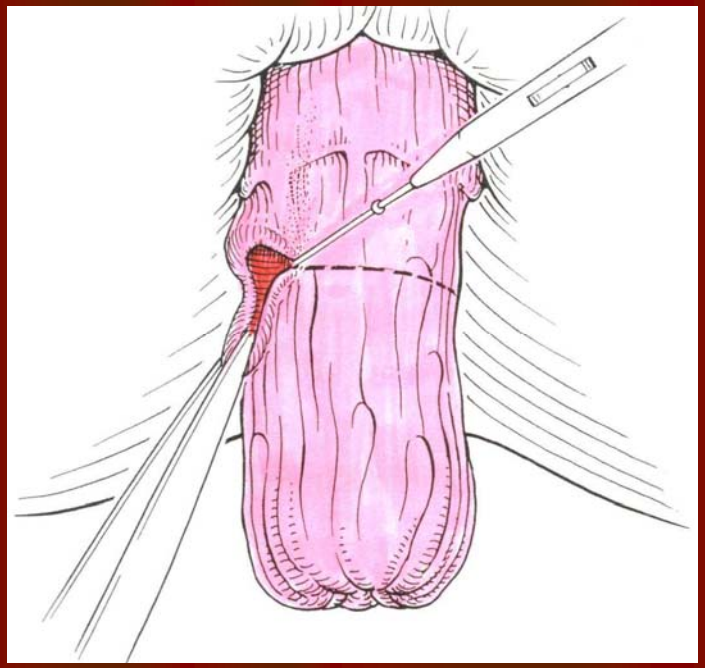
- Complications:
  - Mucosal bleeding
  - Mucosal anastomosis breakdown
  - Mucosal stricture
- Indications:
  - Elderly / with comorbidities
  - Small / mucosal prolapse

Perineal: Altemeier

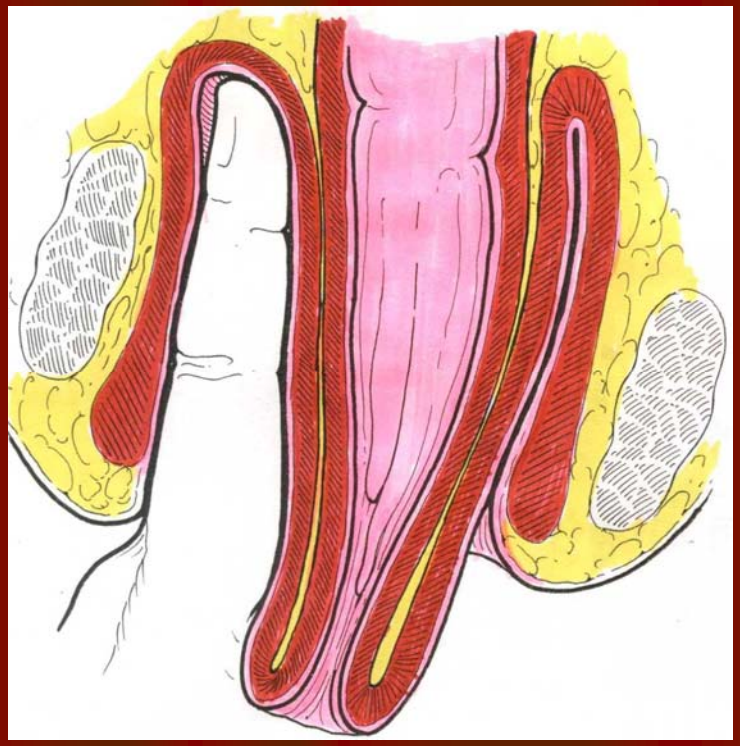
- Concept
  - Resect redundant rectosigmoid transanally, with coloanal anastomosis +/- reconstruction of the pelvic floor
- Procedure

A. Mucosa circumferentially scored cephalad to dentate line until reach perirectal fat
B. Rectal mobilization by division of the mesorectum
C. Ligation of hernia sac
D. +/- Levatoroplasty
E. Proximal transection of rectum & anastomosis

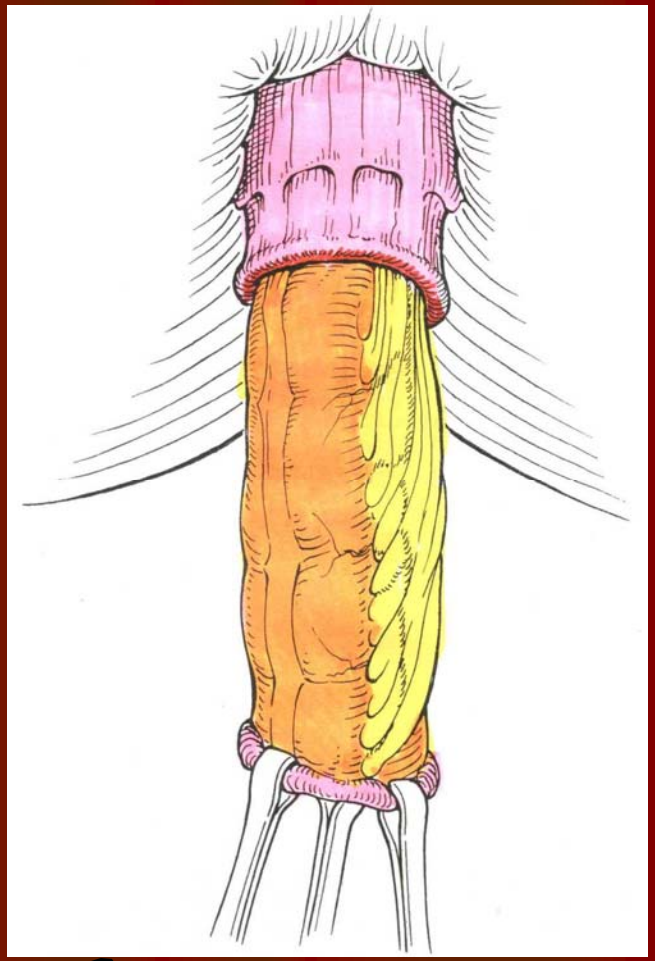
Perineal: Altemeier



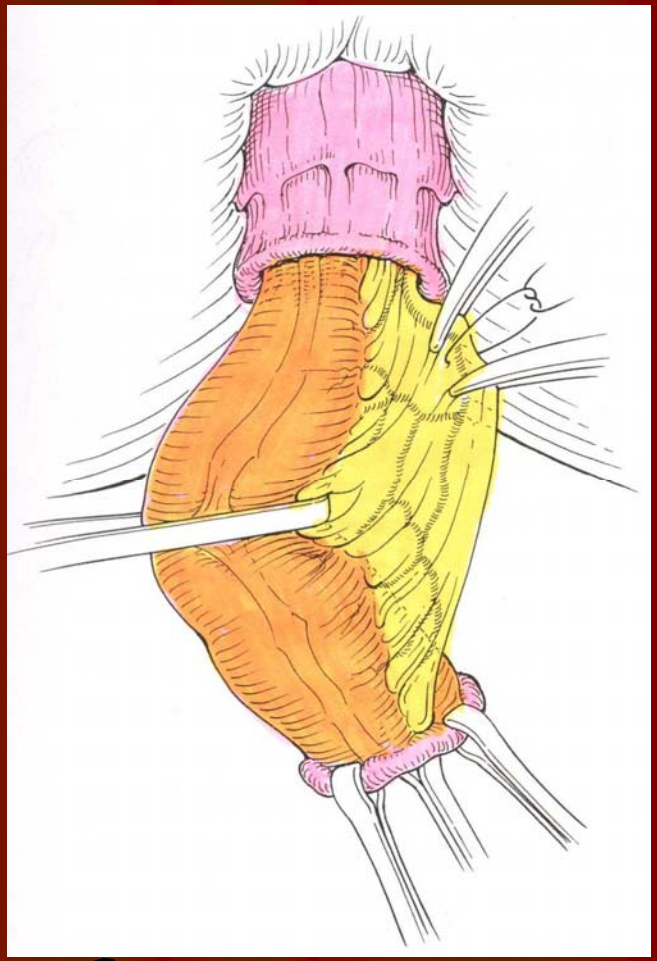
Perineal: Altemeier



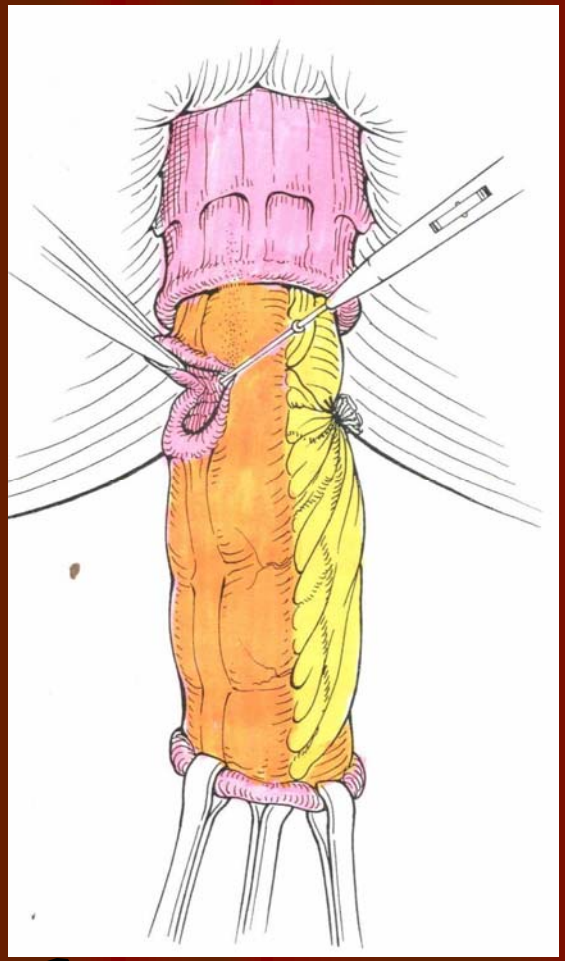
Perineal: Altemeier



Perineal: Altemeier



Perineal: Altemeier



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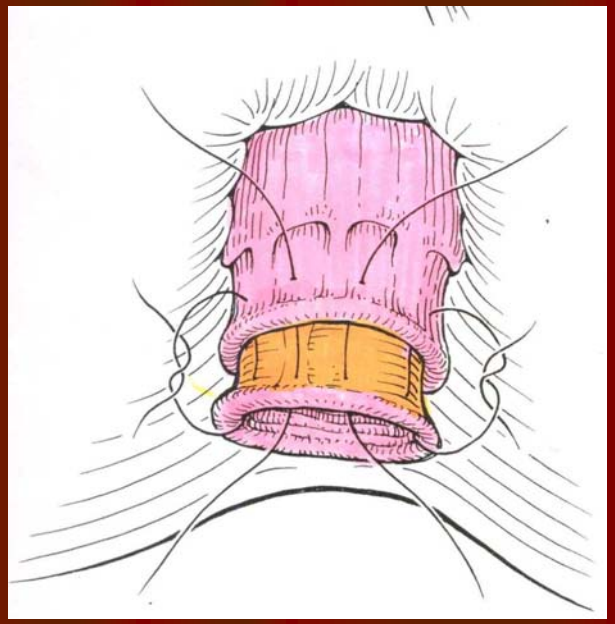
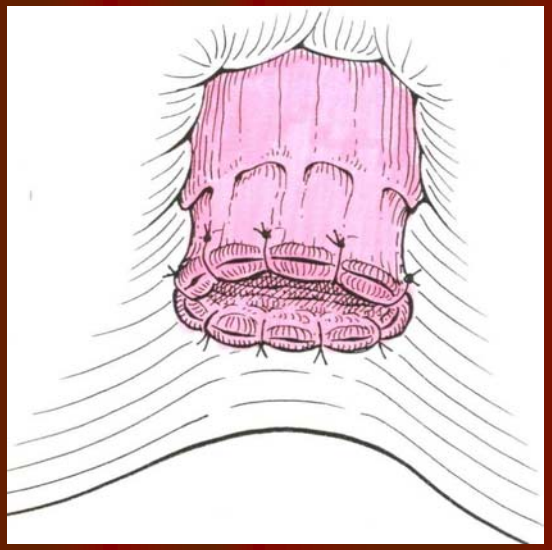


Perineal: Altemeier



Perineal: Altemeier

- Advantages
  - Regional anesthesia
  - Avoids laparotomy
- Disadvantages
  - Technically demanding
  - Increased recurrence (6-16%)[8]
  - Reduced improvement in incontinence (21-67%)[8]
    - Improved results with levatoroplasty (85.7%)[9]

Perineal: Altemeier

- Complications
  - Mesenteric injury
  - Anastomotic leak & sepsis
  - Anastomotic stricture
- Indication
  - Elderly/ with comorbidities
  - Young males
  - Emergency operation

Perineal:

- Anal encirclement (Thiersch)
- Mucosal sleeve resection (Delorme)
- Perineal rectosigmoidectomy (Altemeier)

Transabdominal :

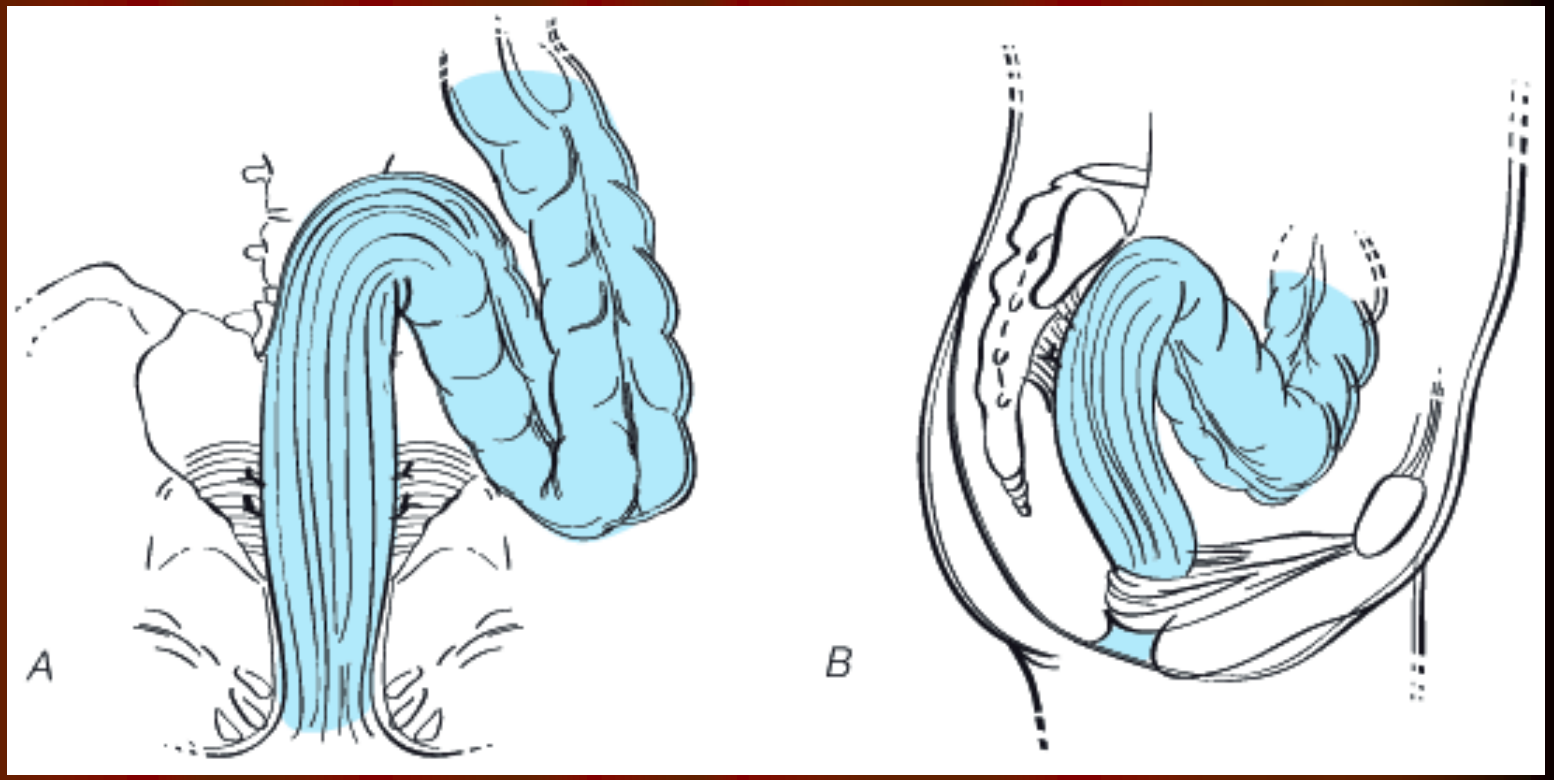
- Rectopexy
  - Suture
  - Anterior sling (Ripstein)
  - Posterior sling (Wells)
  - Ivalon sponge
- Resection
- Resection rectopexy (Frykman-Goldberg)

- Laparoscopic repairs
  - Rectopexy
    - Mesh / suture
  - Resection rectopexy

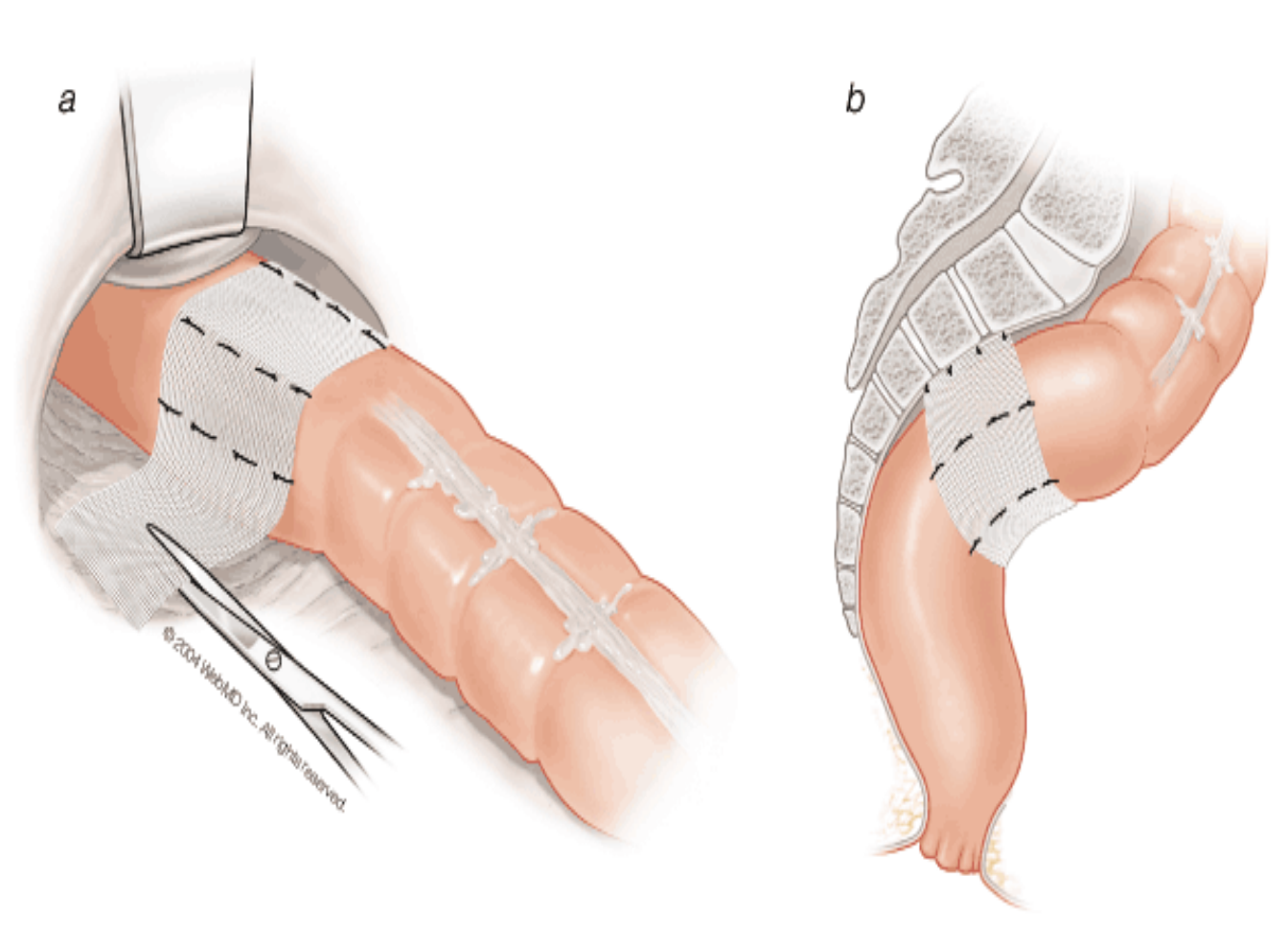
Transabominal: Rectopexy

- Concept
  - secure rectum to the sacral hollow to correct mobility & prevent intussusception
- Procedure
  - Midline incision
  - Mobilization of rectum
    - +/- division of lateral ligaments
  - Fixation of rectum to sacrum
    - Suture / Mesh / Sponge
  - Closure of peritoneum

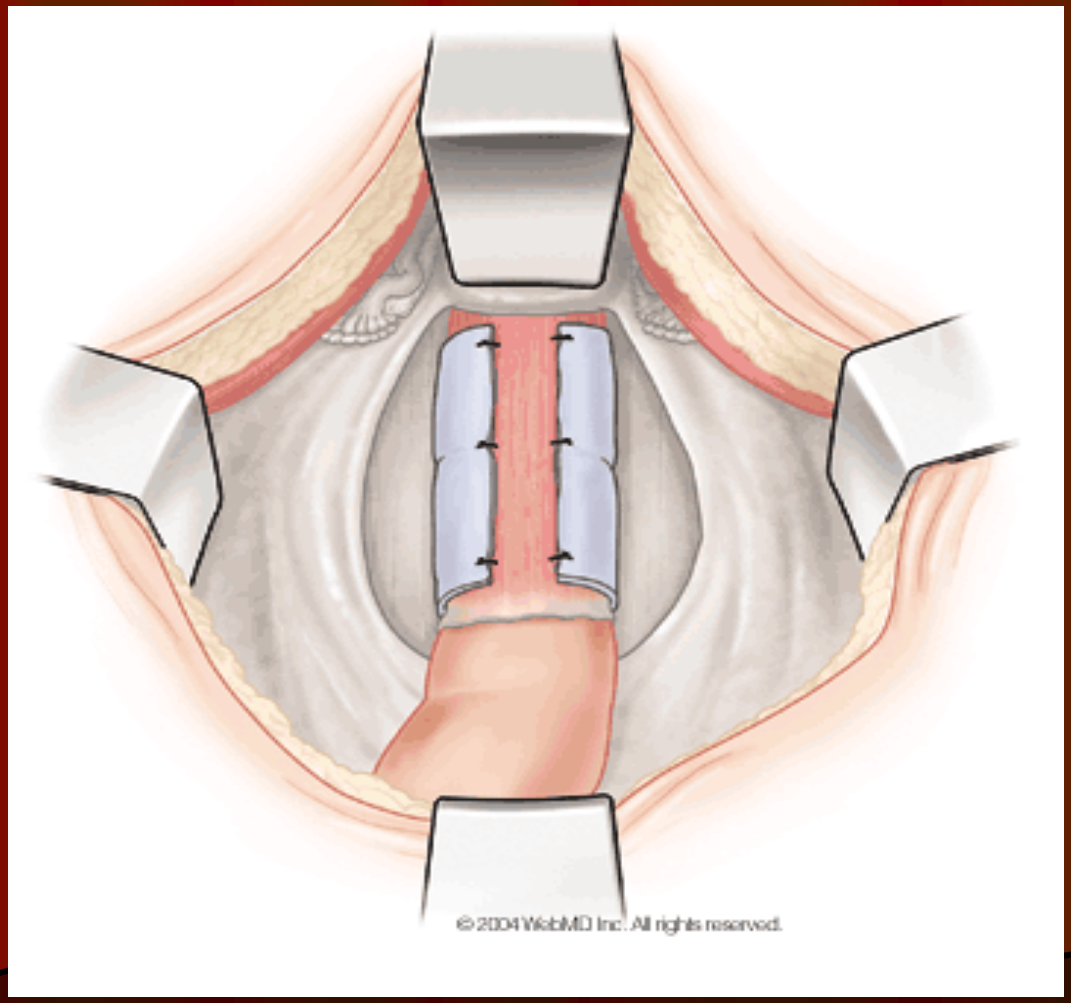
Transabominal: Suture Rectopexy



Transabominal: Anterior Sling Rectopexy (Ripstein)



Transabdominal: Posterior Rectopexy (Wells)



Transabdominal Rectopexy

- Advantages
  - Low recurrence rates
    - (<3% post., <10% ant.)[8]
  - Improved continence
- Disadvantages
  - Laparotomy
    - Slower recovery
    - Risk of nerve injury
  - FB with mesh / sponge

Transabdominal Rectopexy

- Complications
  - Presacral bleeding
  - Fecal impaction from constriction of lumen (Ripstein)
  - Mesh or sponge infection / erosion into bowel wall
    - Pelvic abscesses and fistulas
- Indications
  - Healthy patient with no constipation

Transabdominal: Anterior Resection

- Concept
  - Shorten redundant colon to limit mobility & fix rectum to sacrum by scarring at anastomotic site
- Procedure
  - Abdominal Incision
  - Mobilization of sigmoid & rectum to rectouterine / rectovesical sulcus
  - Proximal sigmoid transection
  - Distal rectal transection
  - Colorectal anastomosis

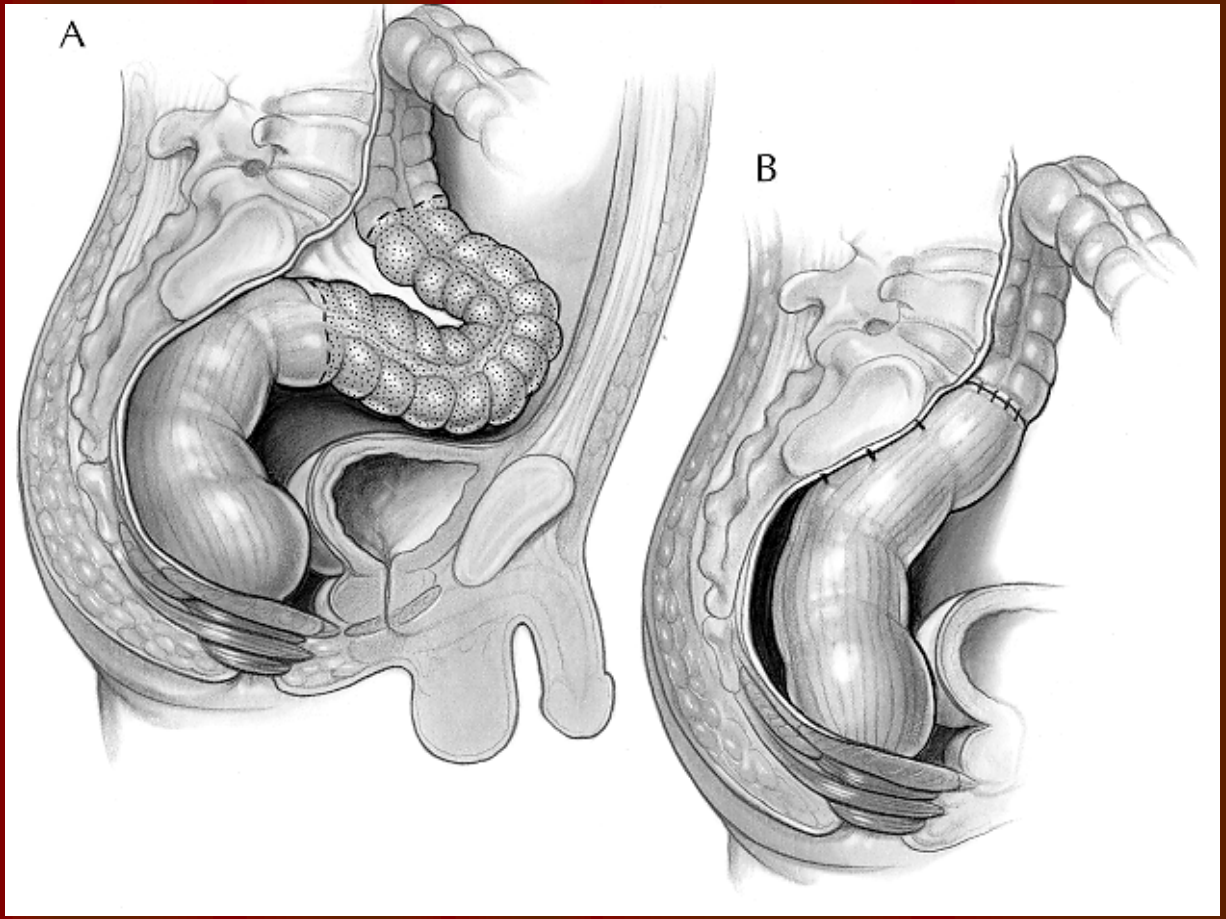
Transabdominal: Anterior Resection

- Advantages
  - Familiar procedure
  - Low recurrence (<10%)[8]
  - No FB
- Disadvantages
  - High morbidity
    - (50 % with low rectal anastomosis)[10]
  - Slower recovery
  - Risk of nerve injury

Transabdominal: Resection Rectopexy (Goldberg-Frykman)

- Concept
  - secure rectum to the sacral hollow with suture
  - remove redundant portion of colon
- Procedure
  - Abdominal Incision
  - Mobilization of sigmoid to rectouterine / rectovesical sulcus
    - + / - division of lateral ligaments
  - Proximal sigmoid transection
  - Distal rectosigmoid transection
  - Colorectal anastomosis
  - Suture Rectopexy

Transabdominal: Resection Rectopexy (Goldberg-Frykman)



Transabdominal: Resection Rectopexy (Goldberg-Frykman)

- Advantages
  - Low recurrence (0-5%)[8]
  - Reduces constipation
    - No increase in morbidity with sigmoid resection vs. rectopexy alone[11,12]
- Disadvantages
  - Laparotomy
    - Slower recovery
    - Risk of nerve injury

Transabdominal: Resection Rectopexy (Goldberg-Frykman)

- Complications
  - Presacral bleeding
  - Anastomotic leak
  - Pelvic nerve injury
  - Stricture
- Indication
  - Healthy patient with constipation

Laparoscopic Rectopexy / Resection Rectopexy

- Concept
  - Same principles as open procedures without complications of laparotomy
- Procedure
  - Mobilization of rectum
  - Placement of rectopexy sutures
  - Mobilization of rectosigmoid
  - Transection of rectum at rectosigmoid junction
  - Extracorporeal transection of proximal bowel
  - Coloanal anastomosis

Laparoscopic Procedures

- Advantages
  - ↓ LOS
  - Improved pain control
  - Similar functional outcomes[8,13]
  - Reduced cost overall[14]
- Disadvantages
  - Longer procedure
  - Expertise required

Laparoscopic: Rectopexy / Resection Rectopexy

- www.websurg.com: Laparoscopic treatment of rectal prolapse. Leroy & Marescaux (France) March 2003

- www.cine-med.com

Surgical Management: Non-Randomized Trials

	Perineal	Abdominal
Morbidity	↓	↑
LOS	↓	↑
Pelvic n. injury	↓	↑
Recurrence	↑	↓
Constipation	<->	↓ with resection ↑ with rectopexy
Fecal incontinence	Reduced improvement	Greater improvement

Surgical Management

- Determining factors
  - Patient
    - Age
    - Comorbidities
    - Constipation
    - Redundant colon
    - Continence
  - Surgeon
    - Experience

Case #1

- 80 y.o. female from nursing home
- Hx of large, full thickness prolapse; incontinent
- PMH: Relatively well otherwise

- Which Procedure?
  - Altemeier with levatoroplasty

Case #2

- 70 y.o. female
- Intermittent mucosal prolapse <3cm
- PMH: IHD, DM

- Which procedure?
  - Delorme

Case #3

- 50 y.o. female
- Large FT Prolapse; hx of incontinence, no constipation
- PMH – otherwise healthy

- Which procedure?
  - Rectopexy (abdominal / laparoscopic)

Case #4

- 40 y.o. female
- Full thickness prolapse
- PMH
  - MS & Chronic constipation
  - Obese
- Which procedure?
  - Laparoscopic Resection Rectopexy

Case #5

- 25 y.o. male
- Ft Proplapse
- Hx schizophrenia, on multiple medx
  - Worried about sexual function

- Which procedure?
  - Altemeier

Case#6

- 40 y.o. female
- Edematous, incarcerated prolapse
- PMH otherwise well

- What next?
  - Sugar!
- Doesn’t work; bowel turning black
- Which procedure?
  - Altemeier

References

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