Acquired anorectal conditions in children

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Introduction

- Acquired conditions are not uncommon
- May be a result of sexual abuse and children should be evaluated when relevant
- Mostly self limiting and can be treated by simple measures
- Radial/extensive surgery should be avoided as much as possible

Outline

1. Perianal abscess and fistula
2. Anal fissure
3. Hemorrhoid
4. Rectal polyp
5. Rectal prolapse
6. Rectal trauma
7. Acquired rectovaginal fistula

1. Perianal Abscess and fistula

Etiology

- fairly common condition in **male infants**
- variants are less severe and serious than in adults (superficial and low)
- Fistula occurs as a consequence of perianal abscess
- **Other causes are rare**; should be suspected in female, older age, complex disease
  - IBD (chrons)
  - Immuno compromised (diabetes, HIV, leukemia)
  - Can occur after soave pullthrough (pieces of mucosa left trapped in pelvis)
  - Following perineal trauma

Pathophysiology

- anorectal crypts of the pectinate line have small channels
- become contaminated with feces and create abscesses
- eventually drain through the skin (usually 1 cm lateral to the anus)
- may remain a patent tunnel (fistula) between the crypt and the skin
- ***A proposed relationship to* ***androgens*** *resulting in* ***congenital*** *deep, epithelialized crypts*
  - *predominant occurrence in male infants.*
  - *Occurrence of fistula without preceeding abscess in females*

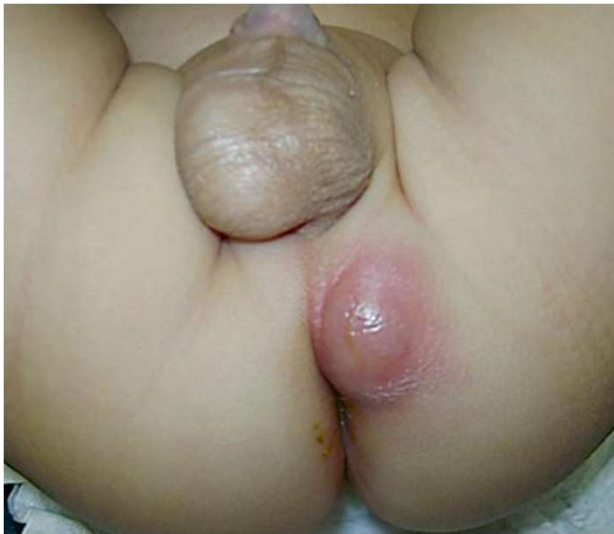
Diagnosis: Abscess

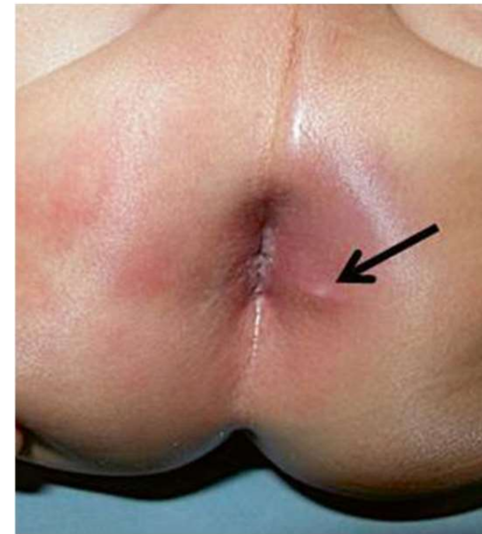
- Sudden onset
- redness and tender swelling next to the anus. Surrounded by cellulitis
- Occasionally, high fever and cry inconsolably (during defecation)
- Natural history
  - If left alone for a few days, pus **drains** through skin
  - Development of **fistula** varies from reports (10-50%) **~20%**

Diagnosis: Fistula

- Sudden redness in the area of the dimple (days/ weeks after abscess drainage)
- redness not as significant and no fever, irritability, or cellulitis.
- Crust over dimple falls and drops of pus comes out
- Orifice looks complete healed but dimple reopens again 10-14 days later
- Natural history
  - becomes a **chronic condition**.
  - **majority disappear** at 1-2 year of age

Diagnosis





- **perianal abscess and Perianal fistula**. Arrow shows the point of the future fistula

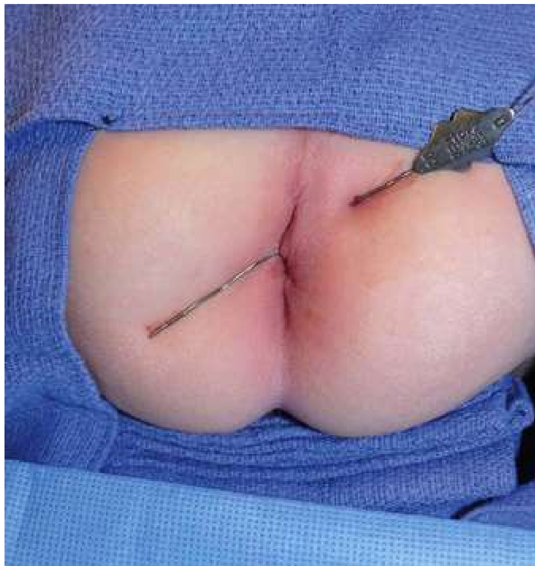
Treatment: Abscess

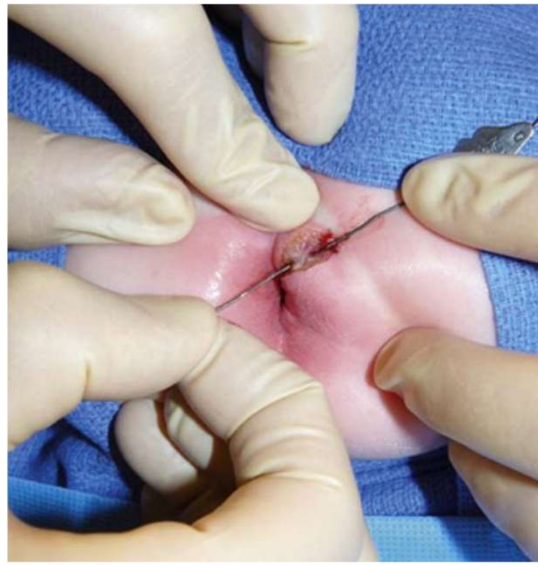
- **Sitz bath** only
  - 30-80% resolve without recurrence
- **Surgical Drainage**
  - under local anesthesia or sedation
  - Failed conservative, Large abscess, significant discomfort and fever
- * **Needle aspiration**
  - limited use but may be effective in select patients
- ***Antibiotics**
  - doesn’t modify natural history of the condition. One study shows it reduces risk of fistula-in-ano
  - Perianal abscess in children doesn’t lead to expanding cellulitis and sepsis

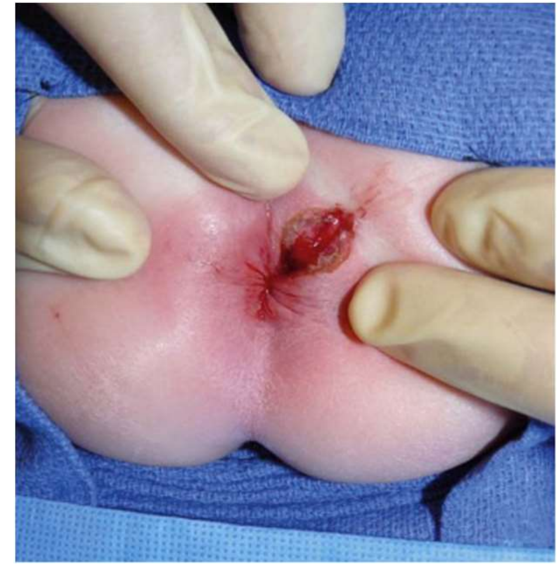
Treatment: Fistula

- **Conservative management**
  - *Advocated by Alberto Pena b/c most spontaneously resolve by 18 mo*
- **Fistulotomy**
  - safe and effective for superficial and low intersphincteric fistulas
  - Recurrence b/n 4-68%
  - Post op care = Sitz bath after bowel movement, keeping skin separated
- **Fistulectomy / cryptectomy**
  - reserved for recurrent
- **Setton**
  - For chrons disease
- **Fistula plug placement**

Treatment







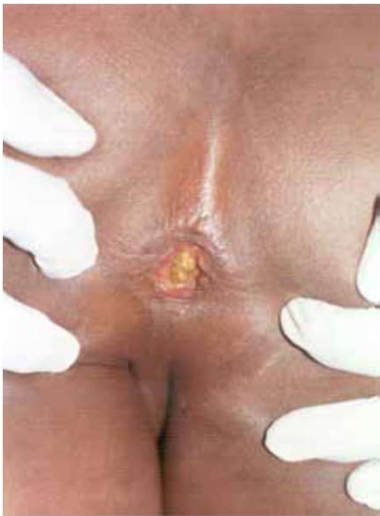
- **Fistulotomy**. anal speculum used and wire or a lacrimal duct probe is passed through the orifice in the skin to one of the crypts of the anorectal junction. injecting air through the orifice in the skin and seeing bubbles coming out through the crypt avoids false tract. This tract is dilated slightly, and then all the tissue, including the mucosa, bowel wall, and perianal skin, is divided to leave tract wide open to granulate

2. Anal Fissure

Anal Fissure

- toddler whose diet changes from liquid to solid
- patients suffering from severe constipation (cycle of pain and constipation)
- most common cause of hematochezia in childhood
- crying on defecation, tear in anoderm (post midline, but anywhere in infants)
- ? Contraction of internal anal sphincter not seen in pediatrics
  - Resolve as constipation is treated **(sitz bath and stool softener suffice)**
  - Although Nitroglycerine, ca blocker, botox, may help for earlier relief and in chronic

Anal fissure



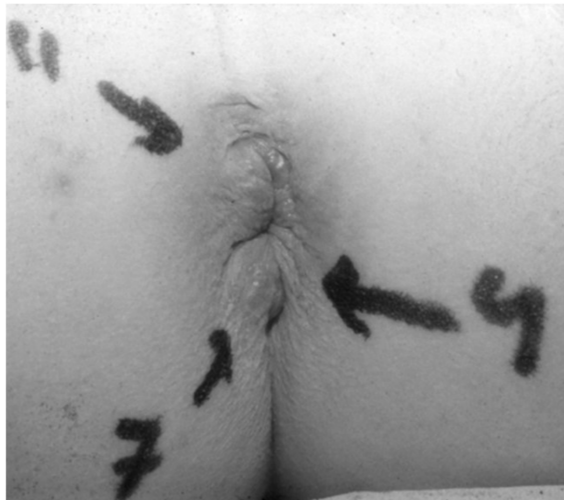
- Anal fissure resulting from repeat sexual abuse in a boy

3. Hemorrhoids

Hemorrhoids

- Uncommon in children
- Often related to constipation (fiber deficient, poor hydration)
- In younger children should raise suspicion of portal hypertension
- Usually mild (no thrombosis, prolapse, bleeding) and dosen’t require hemorrhoidectomy
  - sitz baths, stool softeners, dietary modification (fiber supplementation)
  - Topical treatments for internal hemorrhoid
  - Banding and sclerotherapy control symptoms

Hemorrhoids



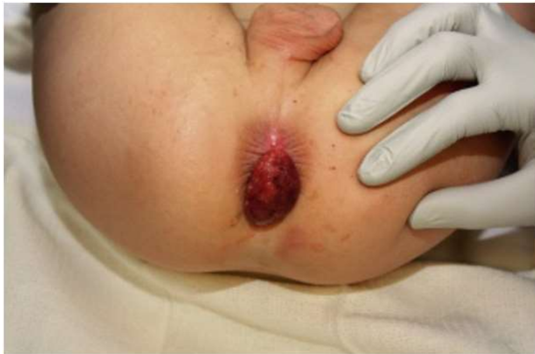
- Hemorrhoids: in a 5 year old with the typical adult location

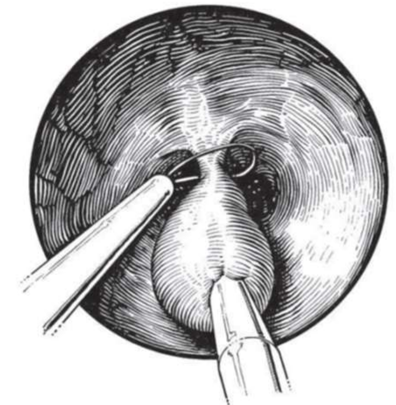
4. Rectal polyp

Rectal polyp

- Juvenile polyps are found ~1% of preschoolers (peak 3-5 yr)
  - 40% in rectum, 60% in colon
  - solitary in 50% of cases
  - Generally considered hamartomas
- Although many are within reach of a DRE, they may not be easy to feel due to their mobility
- Rectal polyps are found in 20% endoscopy done for painless rectal bleeding
- inflammatory process, obstructed glands enlarge, pushed down by feces to form stalk.
- long, narrow stalk predisposes to torsion, congestion, ulceration, bleeding, and auto amputation.
- increased risk of malignancy, mandates that the entire colon be surveyed (colonoscopy)

Treatment





- **Rectal polyp excision**: The stalk of the polyp has been grasped by the forceps. An absorbable ligature was placed around the stalk, and the stalk was divided distal to the ligature.

5. Rectal Prolapse

Rectal Prolapse

- Relatively common problem in pediatrics (peak 1-3 years)
- Male = female
- Can be mucosal prolapse or full-thickness prolapse
- Rarely, what appears to be rectal prolapse is an intussusception of the sigmoid
- Regardless type, should be reduced promptly to prevent vascular compromise

Predisposing factors: Anatomic

- rectum has vertical course
- submucosa attached loosely to underlying muscularis
- pelvic levator musculator is weak
- undeveloped sacral curve, dec resting anal tone
- sigmoid more mobile and Houston valves are absent

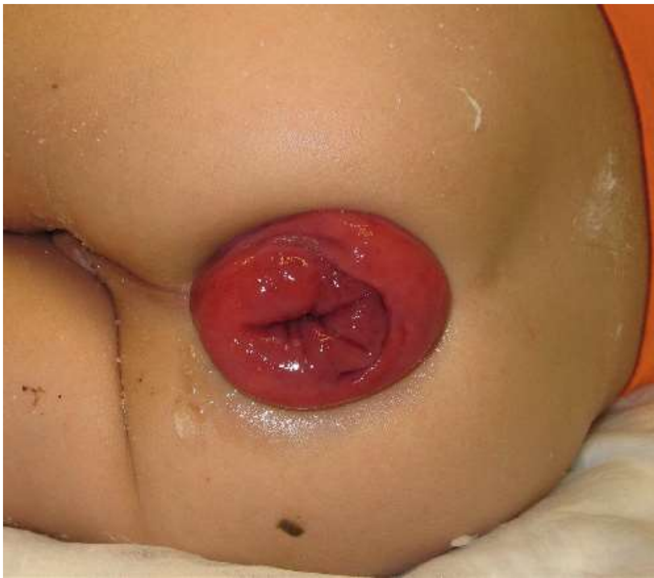
Predisposing factors: pathologic

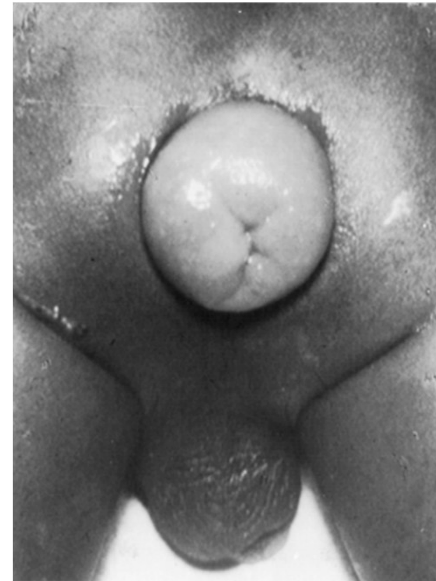
- Cystic fibrosis
- diarrhea
  - Parasites (Ascaris lumbricoides and Trichuris trichiura)
  - Inflamatory bowel disease
- constipation
- polyps (lead points)
- malnutrition (dec ischorectal fat pad, edema)
- Exstrophy, connective tissue disorder, neurologic (pelvic floor weakness)
- inc intra abd pressure (protracted coughing, vomiting, constipation)
- sexual abuse
- Following anoplasty for ARM

Diagnosis

- mucous memb and submucosa protrude 1–4 cm (usually <2cm)
- In complete prolapse >5 cm and circular mucosal folds (not radiating)
- painless dark red mass protrude during straining
- palpate - double layer of mucous membrane
- Complications - ulcer, bleeding, gangrene, atonic sphincter, incontinence
- Symptoms of Underlying condition - prolapse is a symptom and not a disease

Diagnosis





- Mucosal and full thickness rectal prolapse

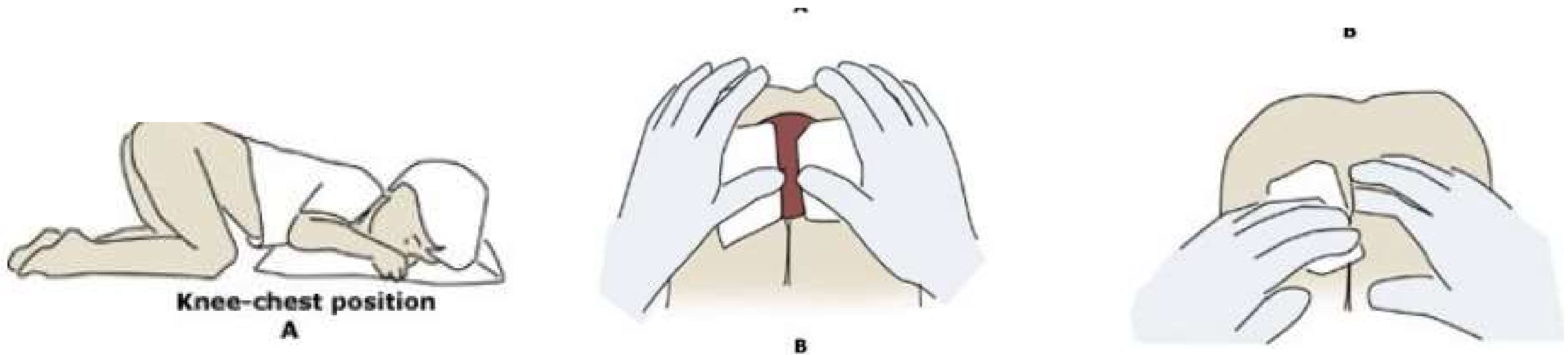
Diagnosis

- rectal prolapse with edema, ulceration and necrosis. Performing digital rectal examination to note the extent of finger into the sulcus to d/t from intussuception

Treatment: Non operative

- Reduction = may add Topical sugar to dec edema in acute prolapse
- Treat underlying condition = cause for recurrence
- Modify defecation habit = Avoid straining, prolonged toilet sitting
- Digital repositioning - 6wk trial
- Sclerotherapy - Submucosal inject (hypertonic NS, deflux, 50% DW)

Non operative treatment



- **Non operative approach**: reduction

Treatment: Surgical

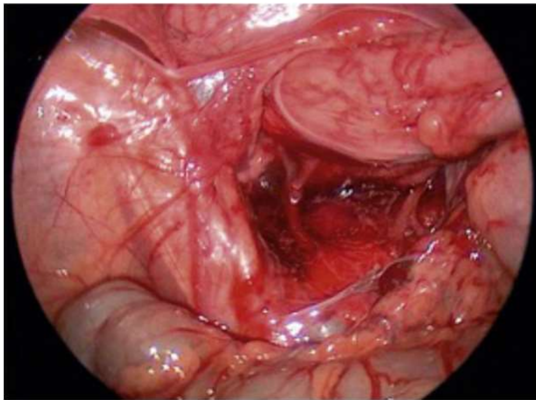
For recurrent symptomatic prolapse, conservative fail (2 sclerotherapy attempts)

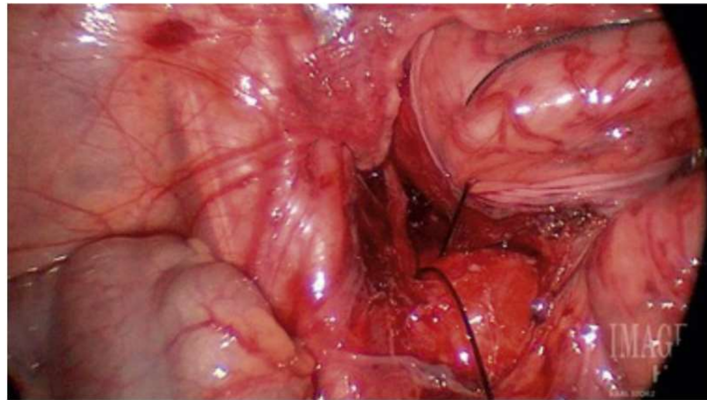
- **Perianal cerclage/terisch suture** (first line)
- **Rectopexy (sacrum)**
  - Transanal rectopexy (Ekehorn rectopexy)
  - posterior sagittal rectopexy (High rate of failure)
  - Laparascopic rectopexy
- **Bowel Resection**
  - Transanal resection of the prolapse (No recurrences)

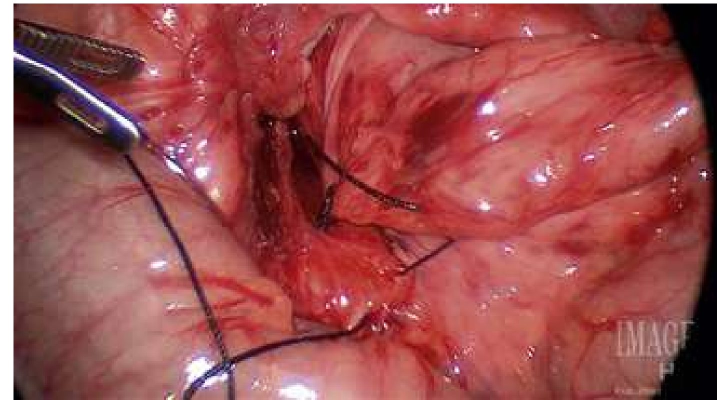
Surgical treatment

- **Perianal cerclage (modified Thiersch)**: tightens the anal outlet and prevents prolapse from recurring while the musculature normalizes. 2 small incisions made at 12 and 6 o'cklock. 0-PDS threaded through incision just deep to the external sphincter on both sides to encircle the anus. With an assistant's finger or a Hegar's dilator held inside the anal canal, the suture is pulled and tied inside the posterior incision. Absorbable sutures are used to close the two incisions.

Surgical treatment

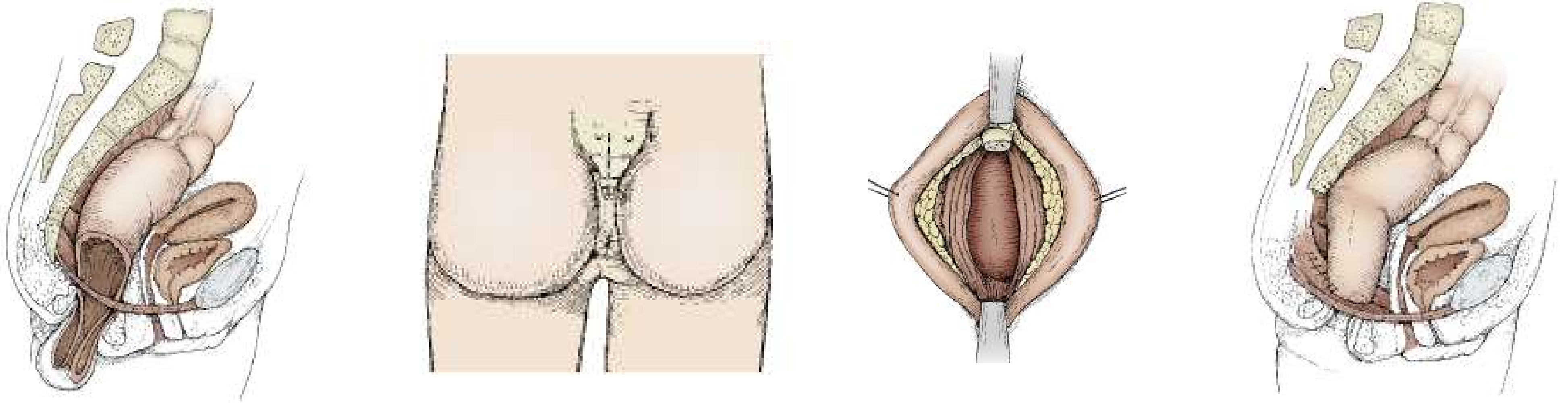






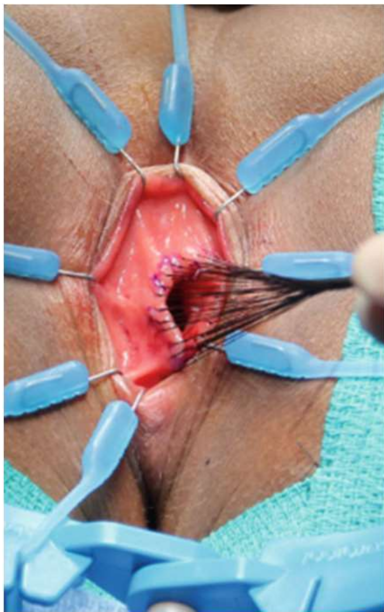
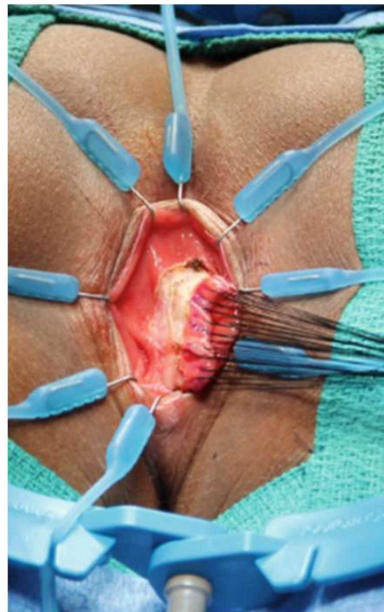
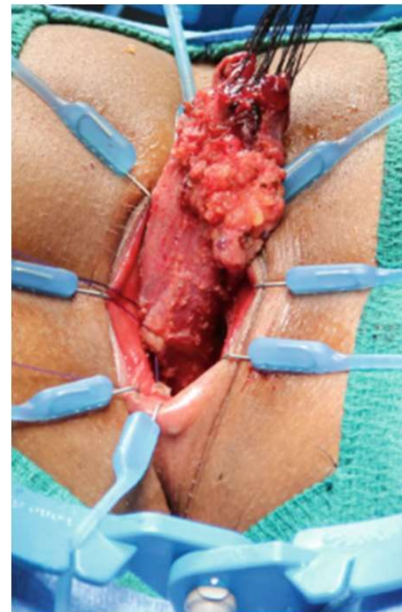
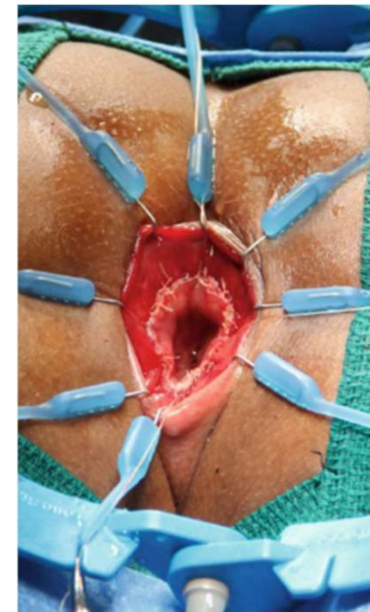
- **Laparascopic rectopexy**: retrorectal space and sacral promontory are exposed **. T**he left ureter is also identified. rectopexy silk suture placed through the serosa of the rectum and the inferior aspect of the sacral promontory.

Surgical treatment



- **Posterior sagital rectopexy**: through a posterior sagittal incision coccyx has been removed and the posterior rectal wall exposed. The pelvic diaphragm is closed posterior to the reduced rectum. The rectum is sutured laterally to the pelvic diaphragm and further suspended from the cut edge of the sacrum.

Surgical treatment

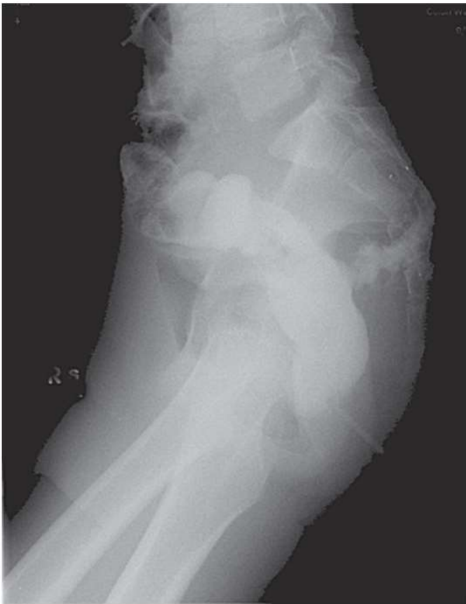
- **Transanal resection of prolapse**: retracting hook placed above dentate and initial resection marked 2 cm upper rectum. Full thickness rectal circumferential dissection and estimated prolapsing portion mobilized. Two layer anastomosis started.

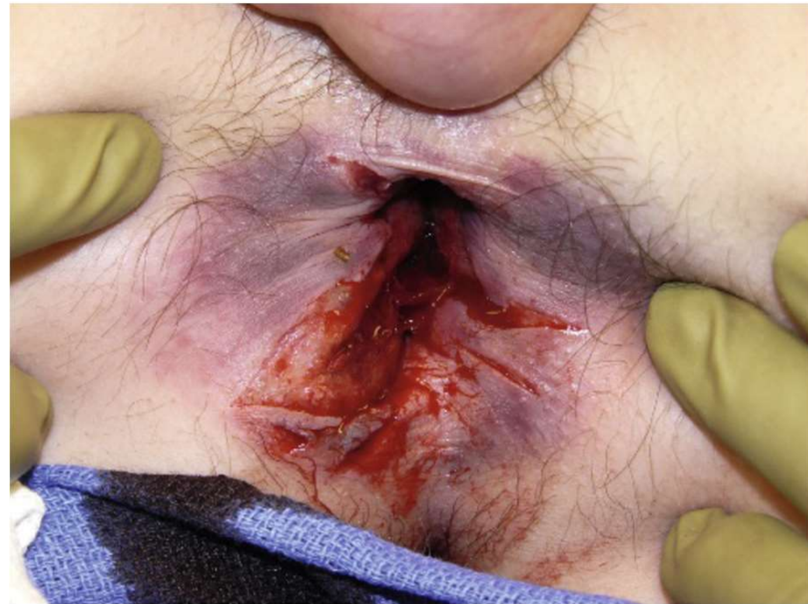
6. Rectal trauma

Penetrating trauma

- Seen with **impalement or gunshot**
- Need for colostomy determined by the site and severity of the injury.
  - Isolated intraperitoneal rectal injuries = primary repair in select patients.
  - Distal extraperitoneal, severe = fecal diversion
  - Acute laceration of anal canal extending up the rectal wall – usually don't require diversion b/c are not full thickness

Penetrating trauma



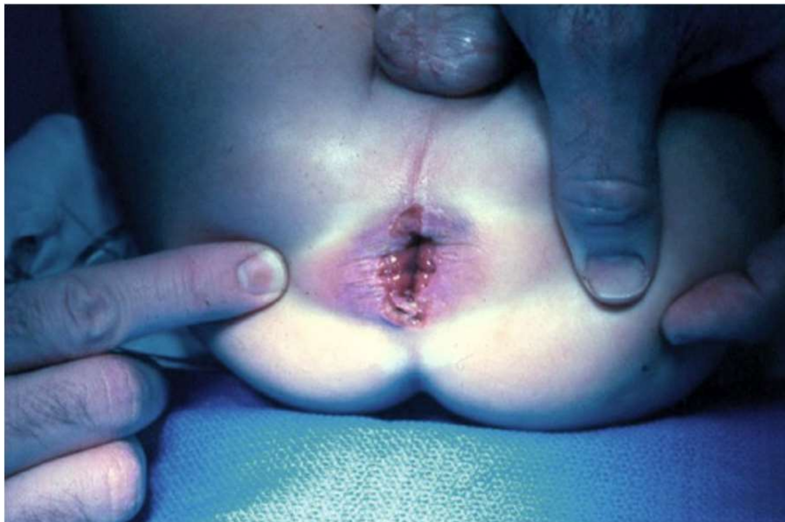


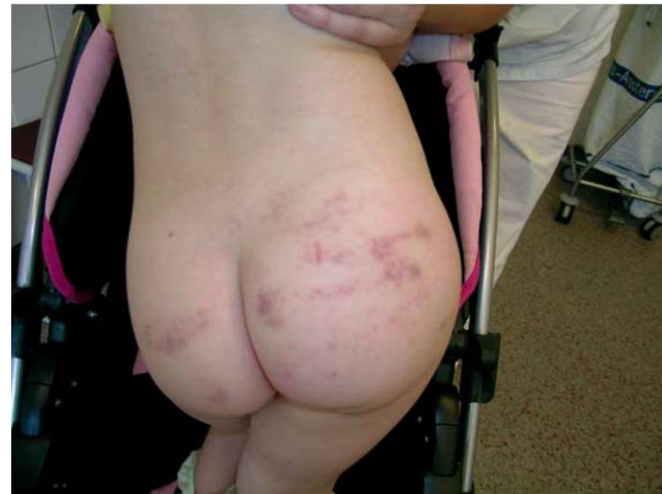
- **penetrating rectal injury**: gunshot to the buttocks and contrast study shows extravasation. **Straddle injury** with perineal and rectal tears

Sexual Abuse

- Sexual abuse is a more common cause of rectal trauma
- findings of anal abuse are more controversial and difficult to verify than vaginal.
    - **Delayed presentation and Unexplained rectal injuries**
    - **dilatation and reflex anal dilatation** (however, Constipation or feces in the rectum may often produce gaping of the anus on separation of the buttocks)
    - **total passiveness and indifference to rectal examination**, with no attempt to withdraw or tighten muscle complex
    - **Anal fissure** (found in sexual abuse, but is also common in routine clinical practice)
    - **laceration, bruising, scratches** around the anus or inner thighs
    - **Perianal warts** (but could be due to vertical transmission on infants)
- Acute laceration of anal canal extending up the rectal wall – usually don't require diversion b/c are not full thickness

Sexual abuse





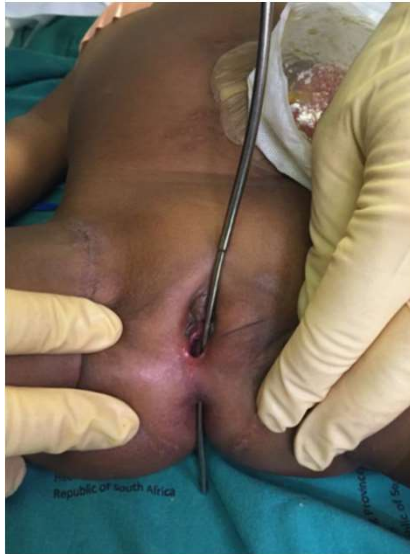
- **chronic sexual abuse**: stellate lacerations and edema of the anal mucosa and skin. Bruising around buttock

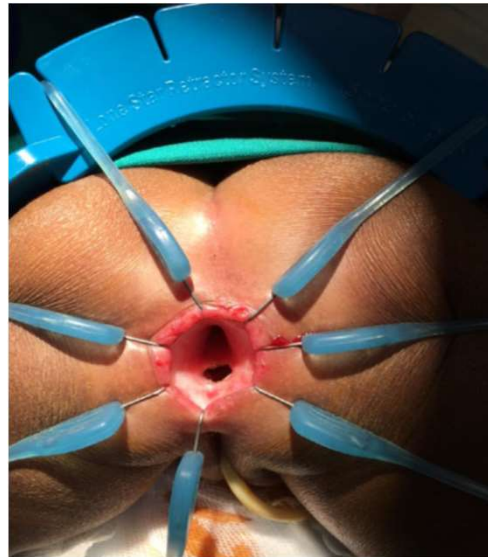
7. Acquired Rectal fistula

Acquired rectal fistula

- **extension or rupture of abscess** (perirectal, perianal, and, rarely, Bartholin's abscesses)
- **surgical procedures** involving the posterior vaginal wall, perineum, anus, or rectum.
- an early manifestation of HIV (a common finding in sub-Saharan Africa)
- Exact mechanism unknown, but follow infection and fistulation into the **vagina / urethra** in boys.
- Pathologically, the fistula is usually located at the dentate line
- **Management**
  - ART, antibiotics, nutritional
  - Fistula excised and wound repaired preferably under protective colostomy

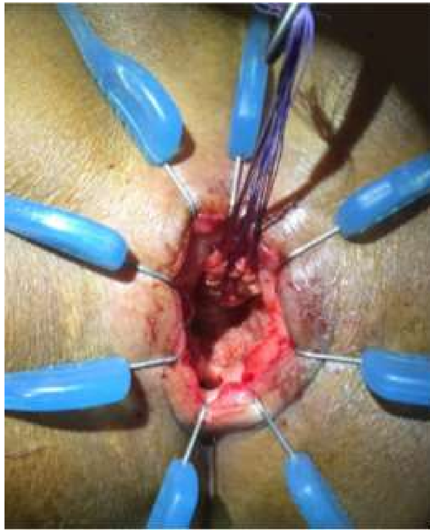
Acquired rectal fistula

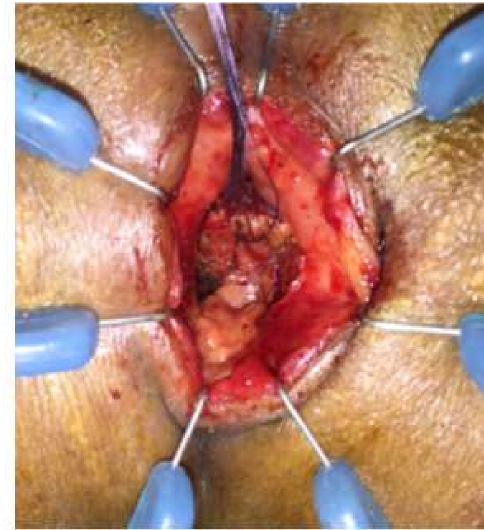




- acquired rectovaginal fistula

Acquired rectal fistula





- **Anterior rectal advancement flap** with an **interposing ischiorectal fat pad**

References

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