



Surgical Management of Constipation, Fecal Incontinence, and Rectal Prolapse

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Objectives

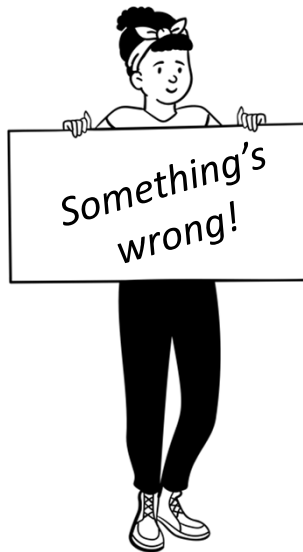
- Discuss the role of the surgeon in treatment of common pelvic floor disorders
- Describe surgical evaluation of the patient with these complaints
- Provide overview of surgical treatment options for
 - Constipation
 - Fecal incontinence
 - Rectal prolapse

Epidemiology and Etiologies

- Estimated 1 in 4 women will have at least one pelvic floor abnormality
 - Likely an underestimate
- Not as well studied in male populations
- Etiologies/associations
 - Pregnancy/childbirth
 - Chronic straining
 - Inflammatory processes/radiation
 - Spinal trauma or surgery
 - Anorectal, pelvic or gynecologic trauma/surgery
 - Neurologic disorders
 - Psychiatric disorders

Wide Range of Symptoms

- Constipation
- Tenesmus
- Abdominal pain
- Bloating
- Bowel frequency/urgency



- Stool leakage
- Stool accidents
- Pelvic pain
- Anorectal pain
- Prolapsing or bulging tissue

Role of the Surgeon for GI Functional Disorders

- Correct anatomic or mechanical pathology that interferes with function, when possible
- Implant devices that enhance function
- Bypass such pathology when other options exhausted
- Know the capabilities and limitations of the surgical options available
- Counsel patients on options and likely outcomes
 - Surgery may mean trading one set of issues for another
 - May not resolve all symptoms

Evaluation

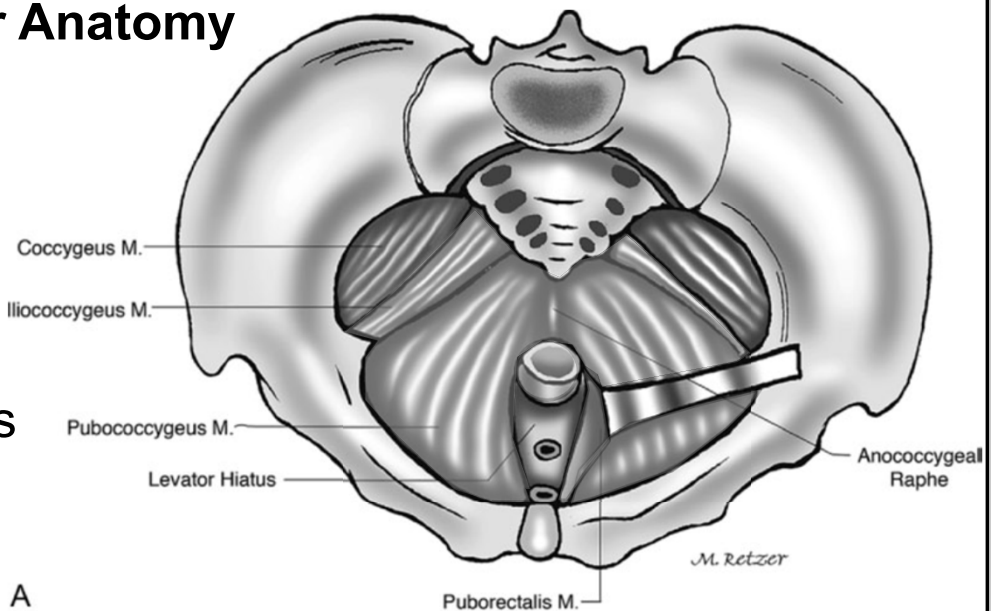
- Aims
 - Rule out and/or identify other causes of bowel dysfunction
 - Delineate mechanism underlying the symptoms
- History and physical examination
- Colonoscopy
- Testing to investigate function and anatomy (as applicable)
 - Transit studies
 - Manometry
 - MRI or fluorodefecography
 - Ultrasound

Pelvic Floor Anatomy

Rectum

Levator ani

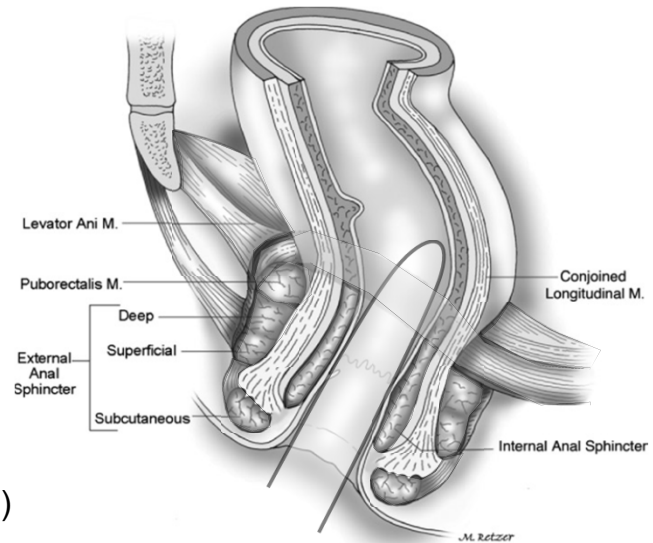
Puborectalis



(Image modified from ASCRS Member Resource Library)

Anorectal Exam

- Stenosis
- Sphincter tone
 - Resting tone – IAS (autonomic)
 - Squeeze tone – EAS (somatic)
- Levator tone and tenderness
- Valsalva “as if trying to have a BM”
 - Sphincter relaxation?
 - Puborectalis relaxation?
 - Paradoxical contraction?
 - Perineal descent (up to 3.5 cm WNL)
 - Rectocele? Prolapse?



(Image modified from ASCRS Member Resource Library)

Surgical Approach to Constipation

What is the Mechanism?

- Slow transit/colonic inertia
- Outlet dysfunction/obstructed defecation syndrome (ODS)
- Rule out fixed mechanical obstruction
 - Imaging
 - Colonoscopy



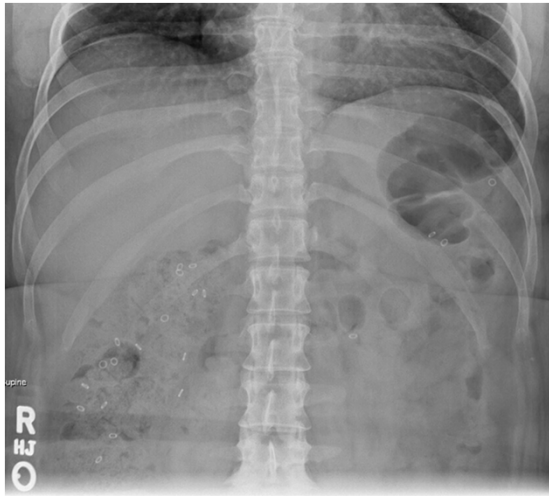
Transit Evaluation – Sitzmark Study

- Capsule with 20-25 markers, x-ray day 5 or 7
- Abstain from laxatives/stool softeners
- Abnormal: >20% retained markers
- Distribution of markers
 - Mostly on the right/seen throughout
 - Slow transit
 - Doesn't preclude outlet dysfunction
 - Rectosigmoid predominant
 - Preserved transit
 - Outlet dysfunction



(Image from ASCRS Member Resource Library)

Sitz Marker Study – Slow Transit



Sitz Marker Study – Outlet Dysfunction

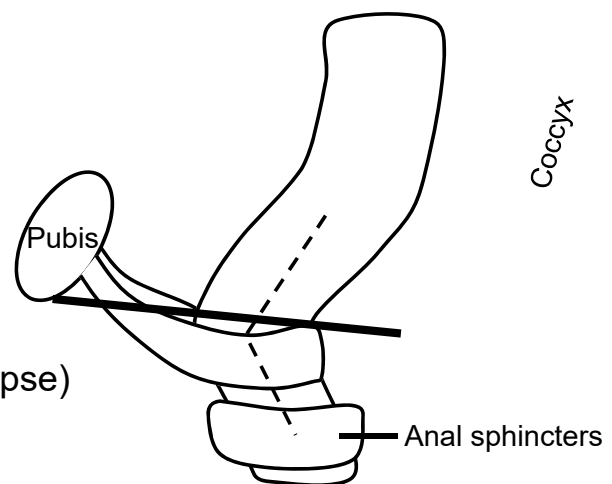


Outlet Evaluation – Anorectal Manometry

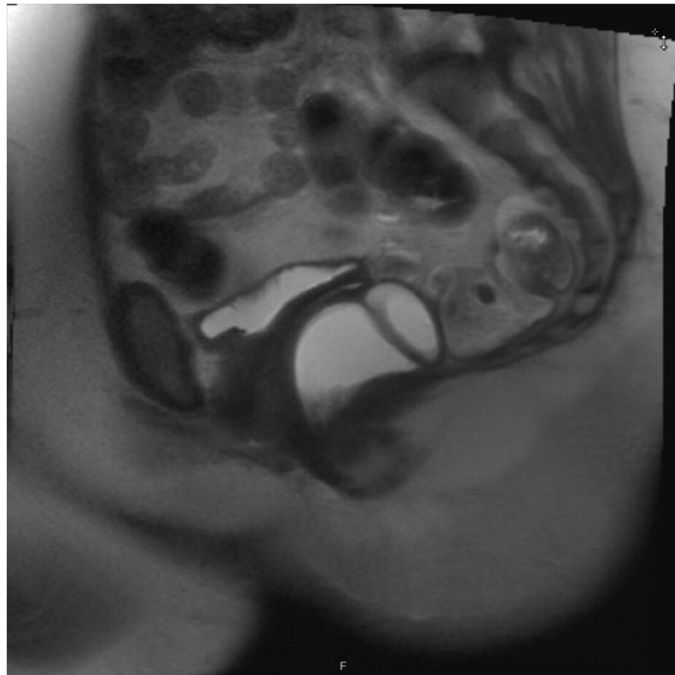
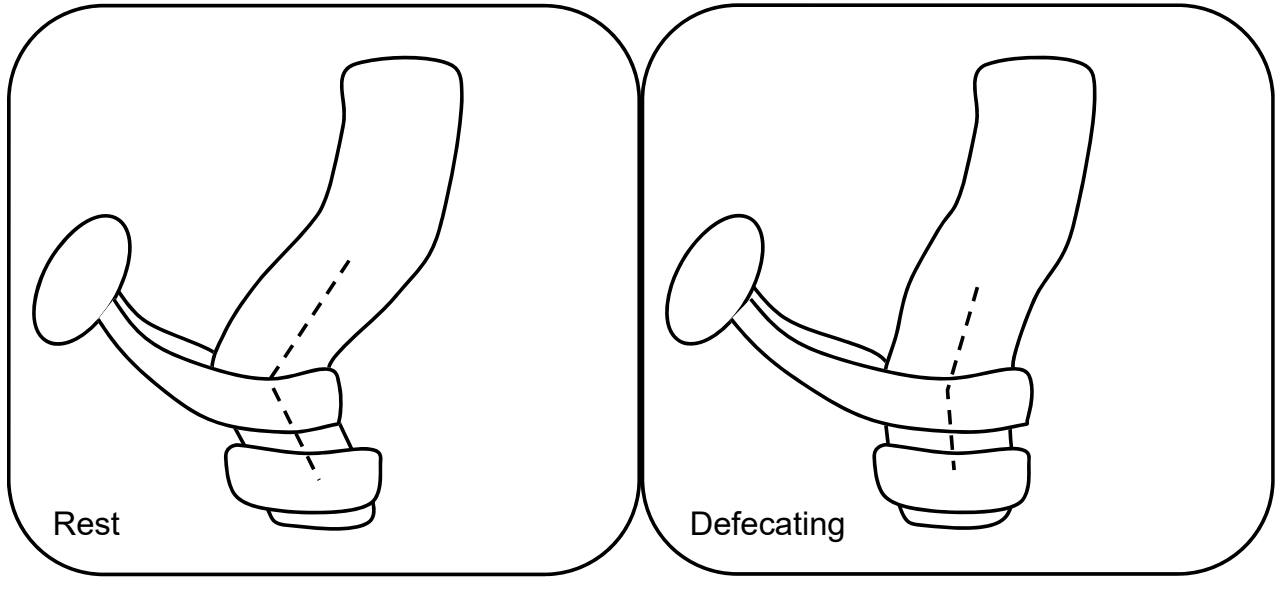
- Evaluates physiology of defecation with minimal insight into anatomy
- Parameters most relevant for surgical decision-making
 - RAIR (rectoanal inhibitory reflex) – if absent, context matters
 - Rectal distension normally causes internal sphincter relaxation
 - Megarectum – most adults
 - Chronic rectal distension and reduced sensation
 - Hirschsprung's disease – rare in even young adult patients
 - Congenital aganglionosis of myenteric and submucosal plexus
 - Requires full thickness biopsy for diagnosis
 - Balloon expulsion test
 - If unable to expel, indicates very poor outlet function

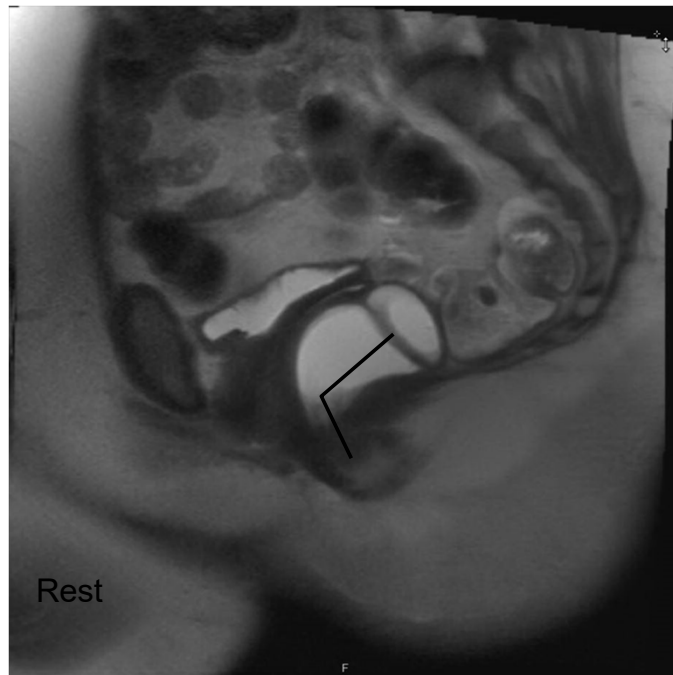
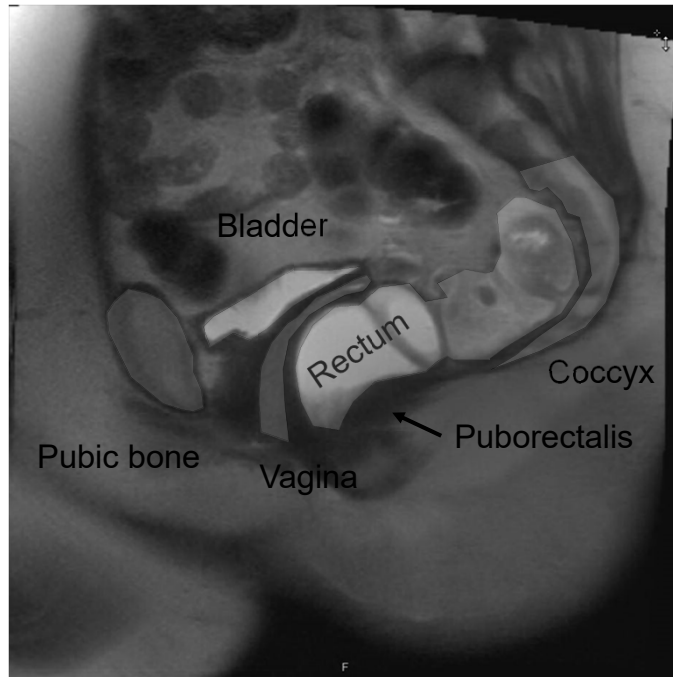
Outlet Evaluation – Defecography

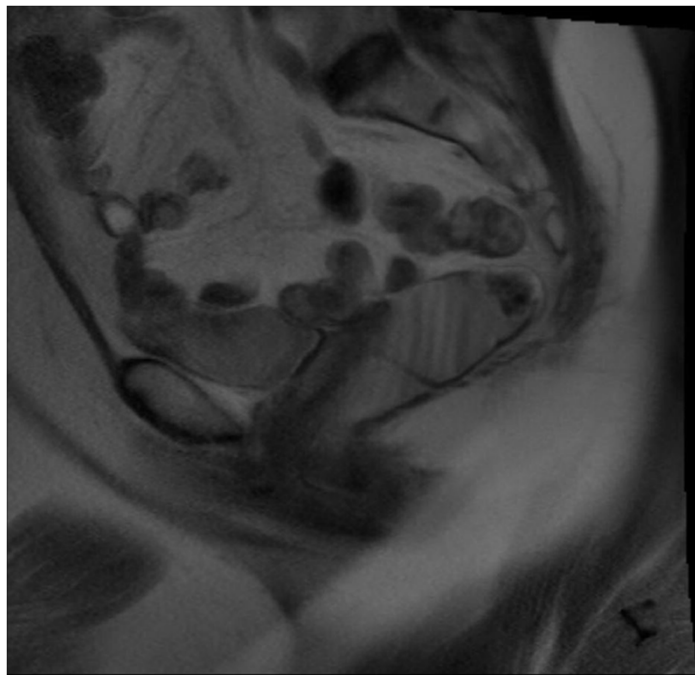
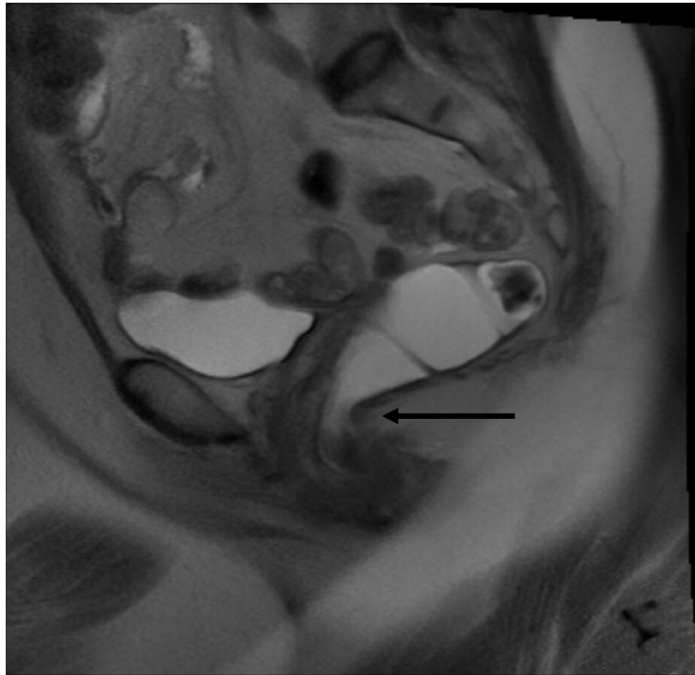
- Evaluates anatomy of defecation with minimal insight into physiology
- MRI vs fluoro
- Key elements reported
 - Anorectal angle (ARA) – reflects puborectalis sling function
 - Evacuation of contrast
 - Presence of intussusception (prolapse)
 - Degree of organ descent from pubococcygeal line (PCL)

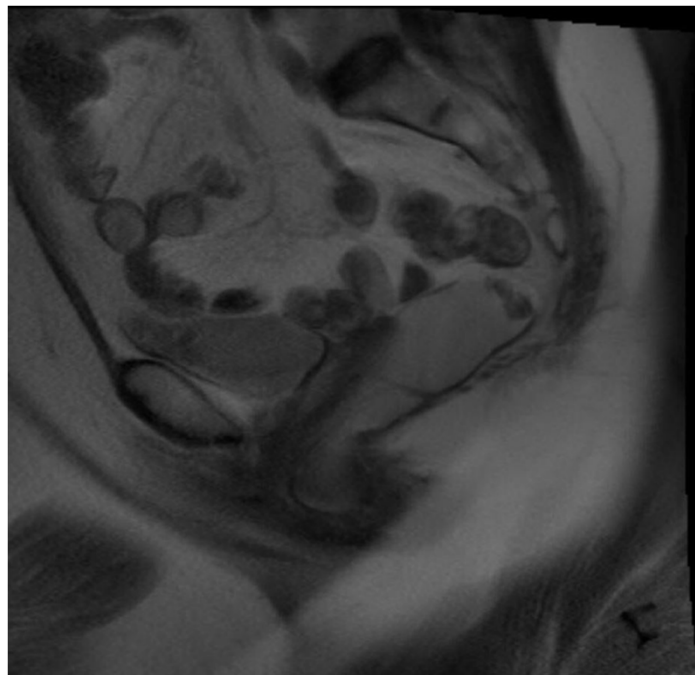
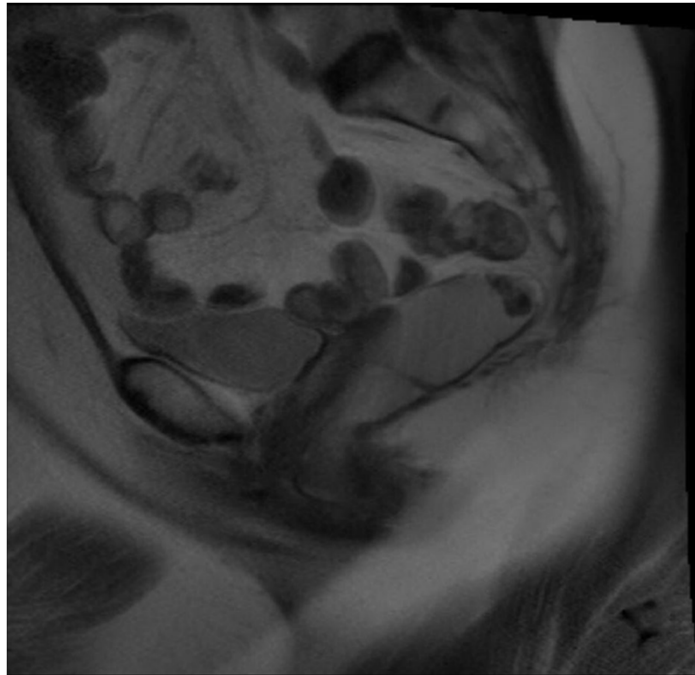


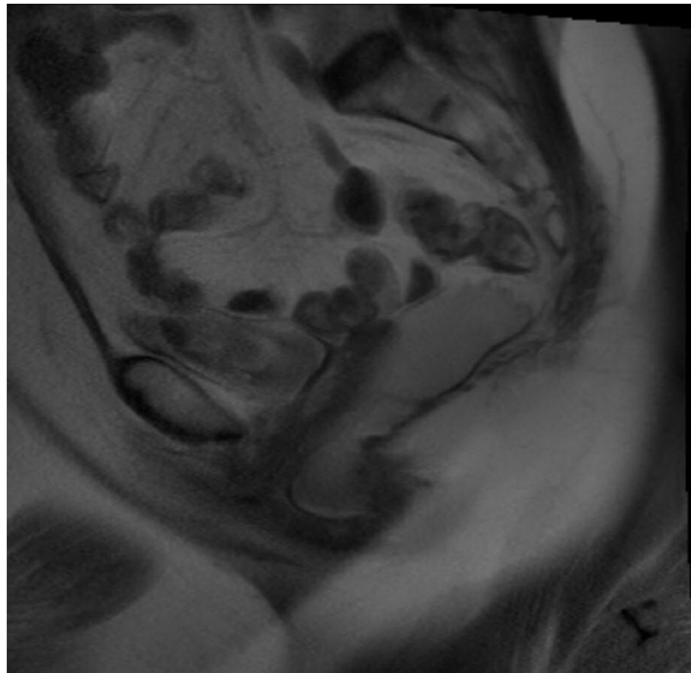
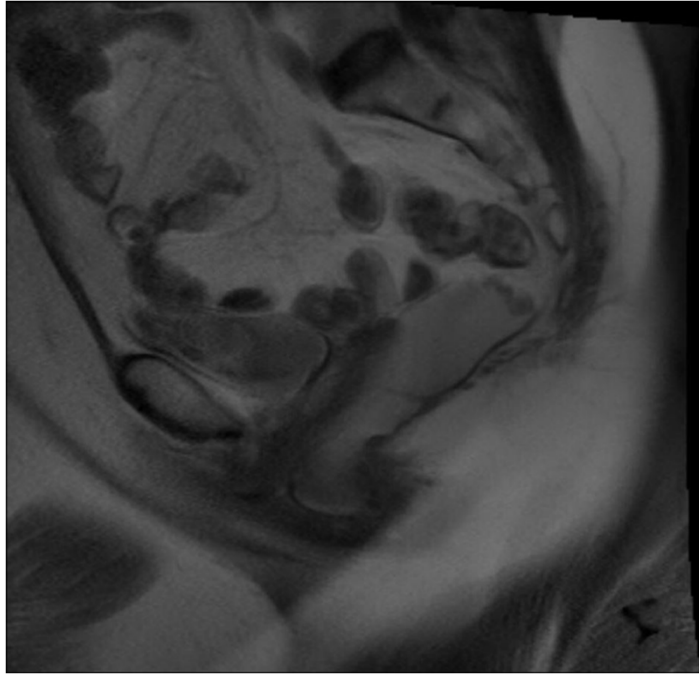
Outlet Evaluation – Defecography

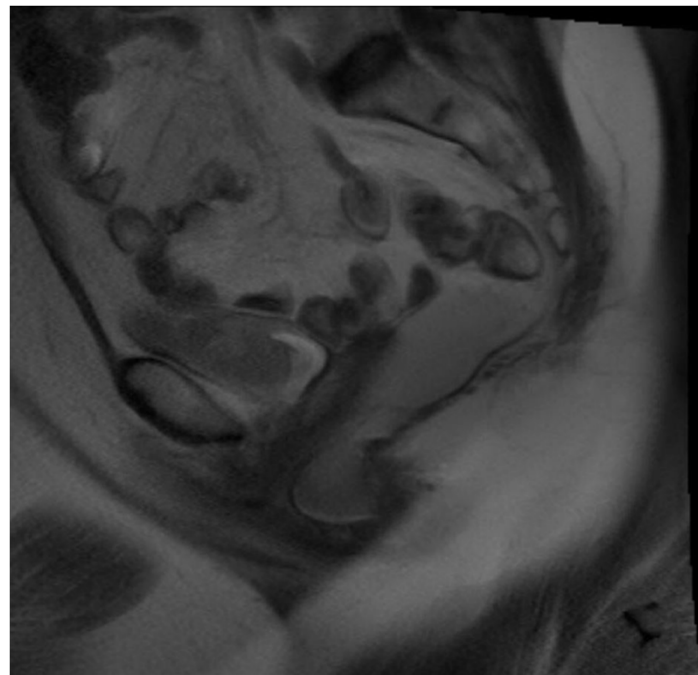
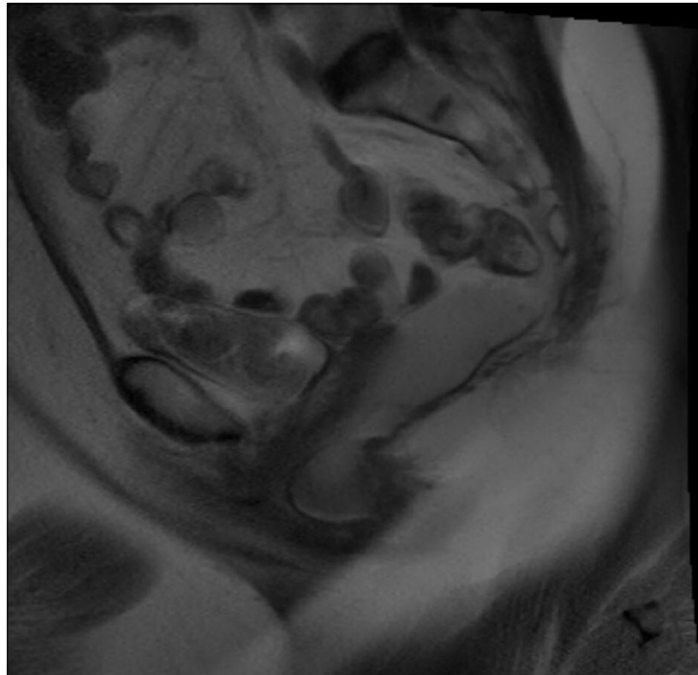


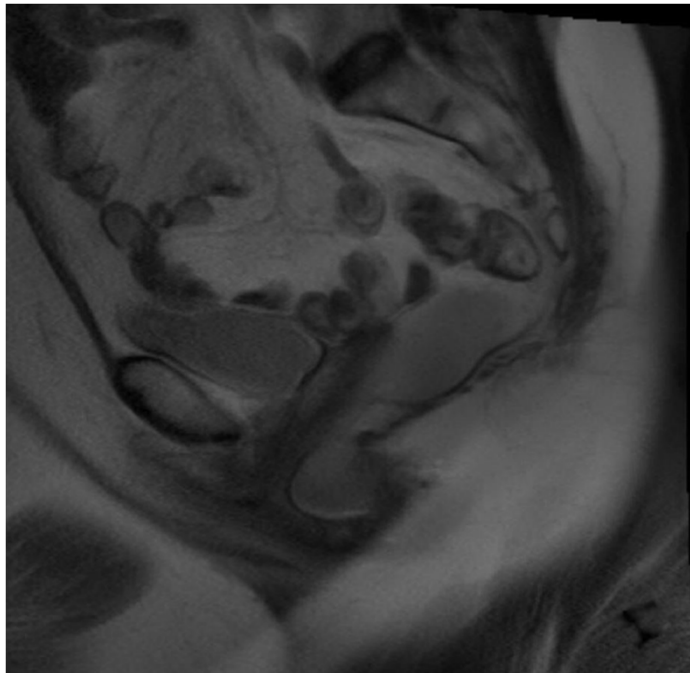
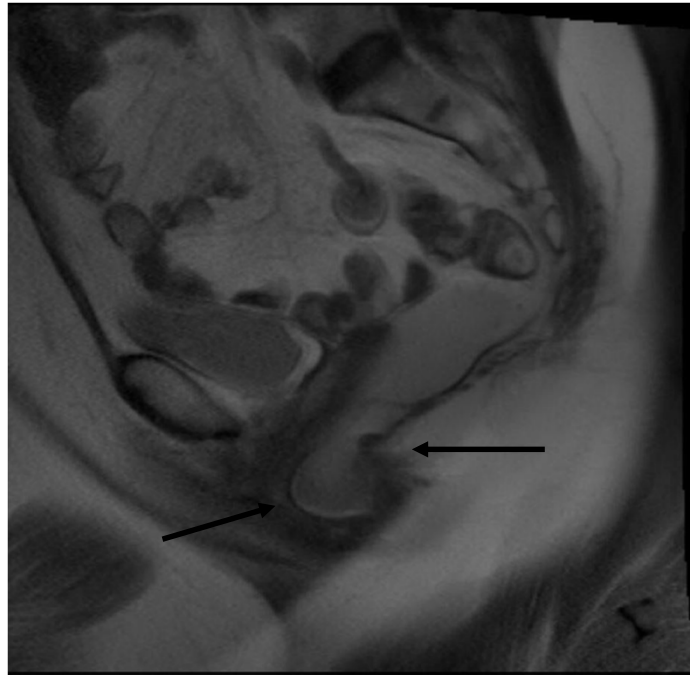


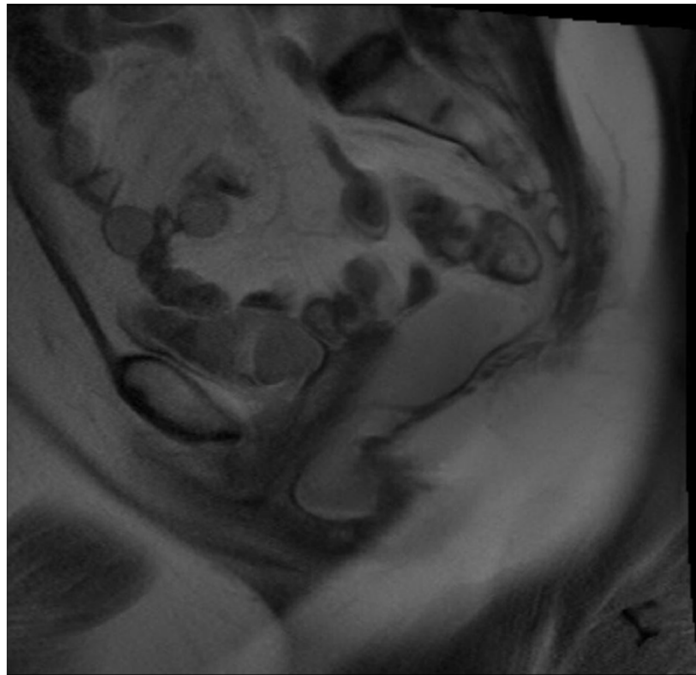
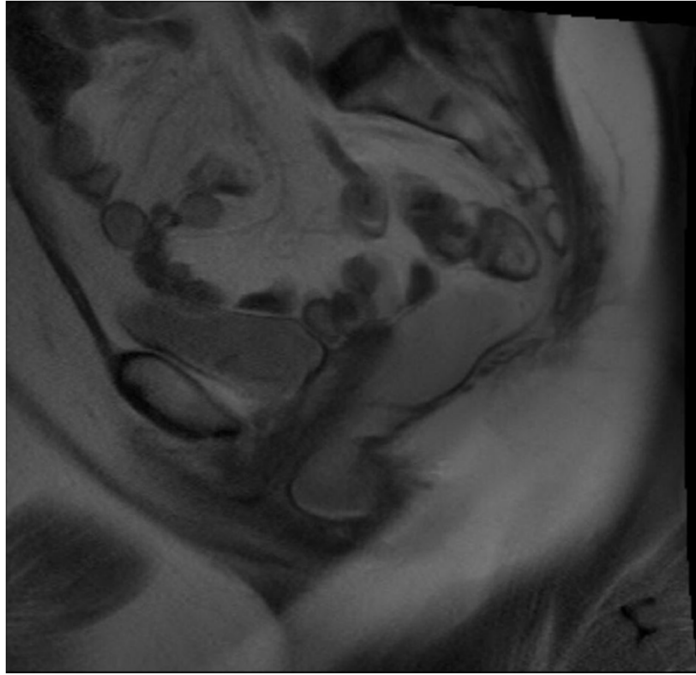


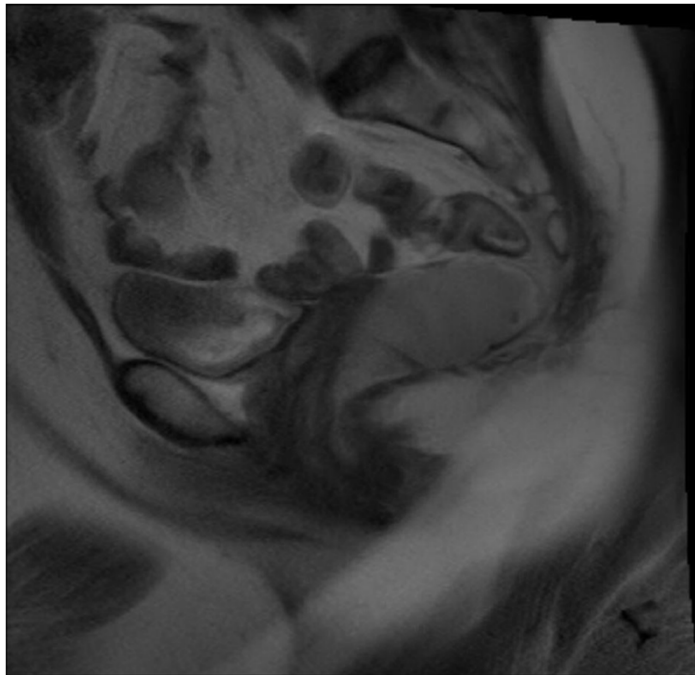
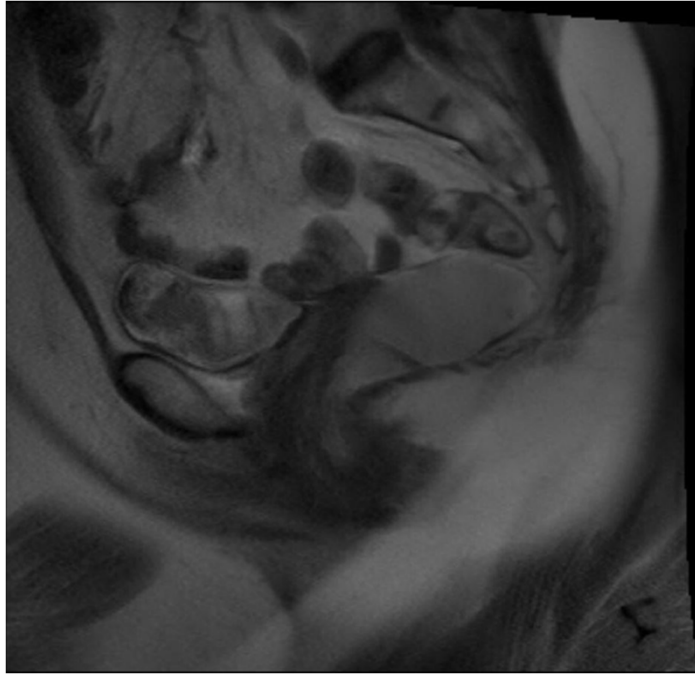


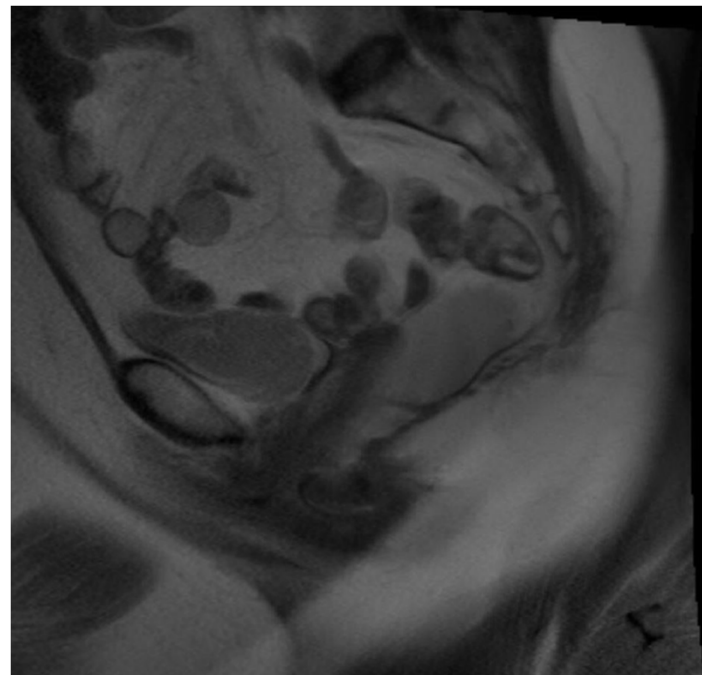
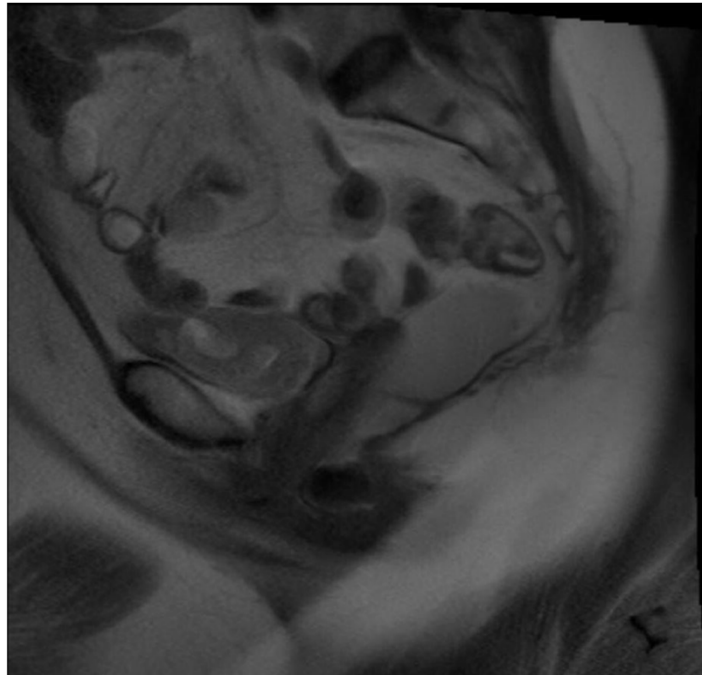


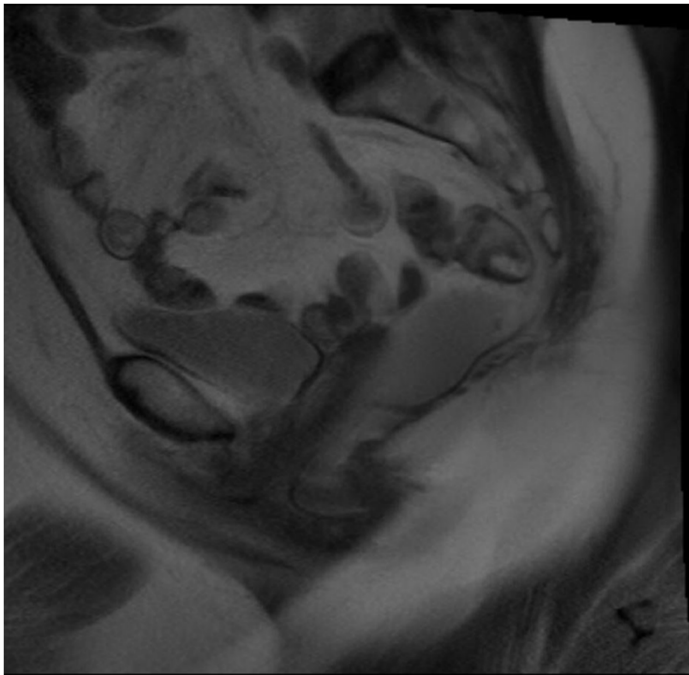
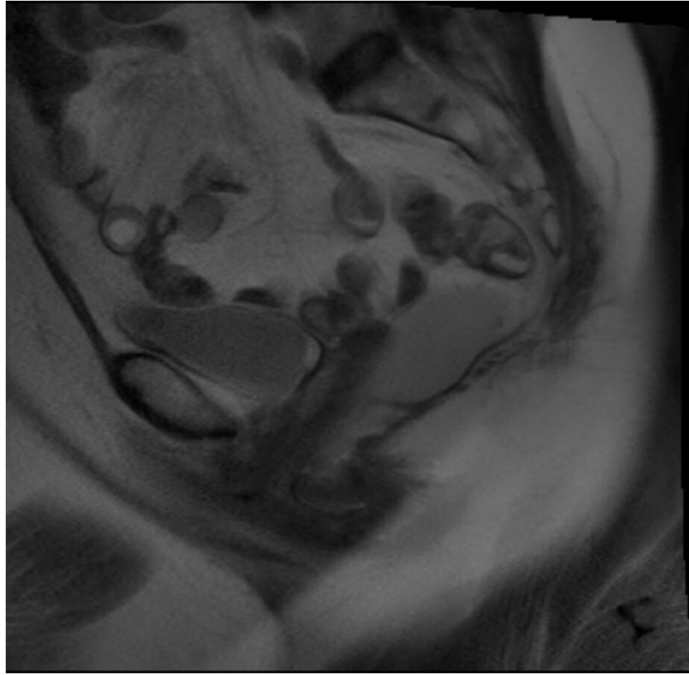


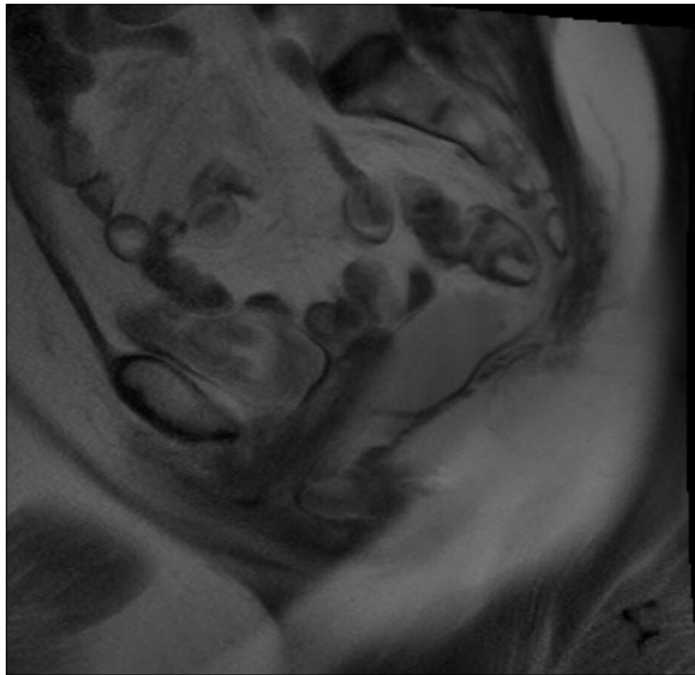
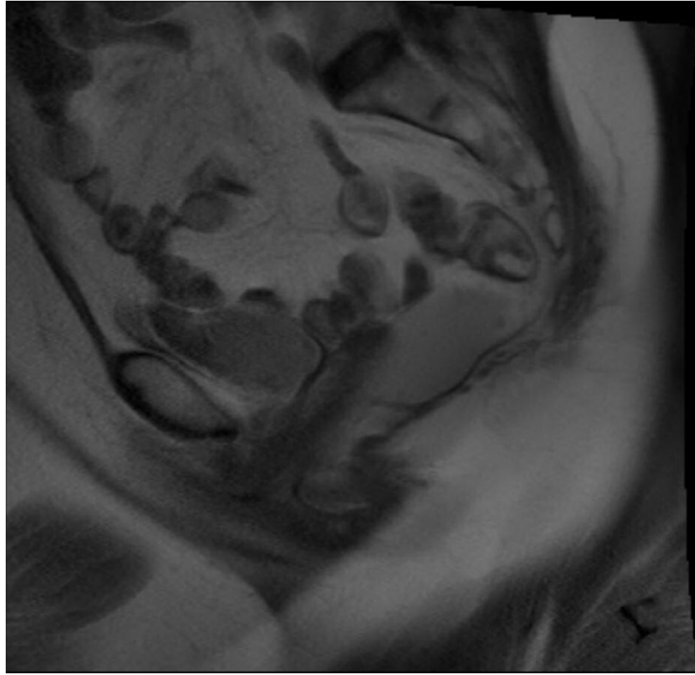


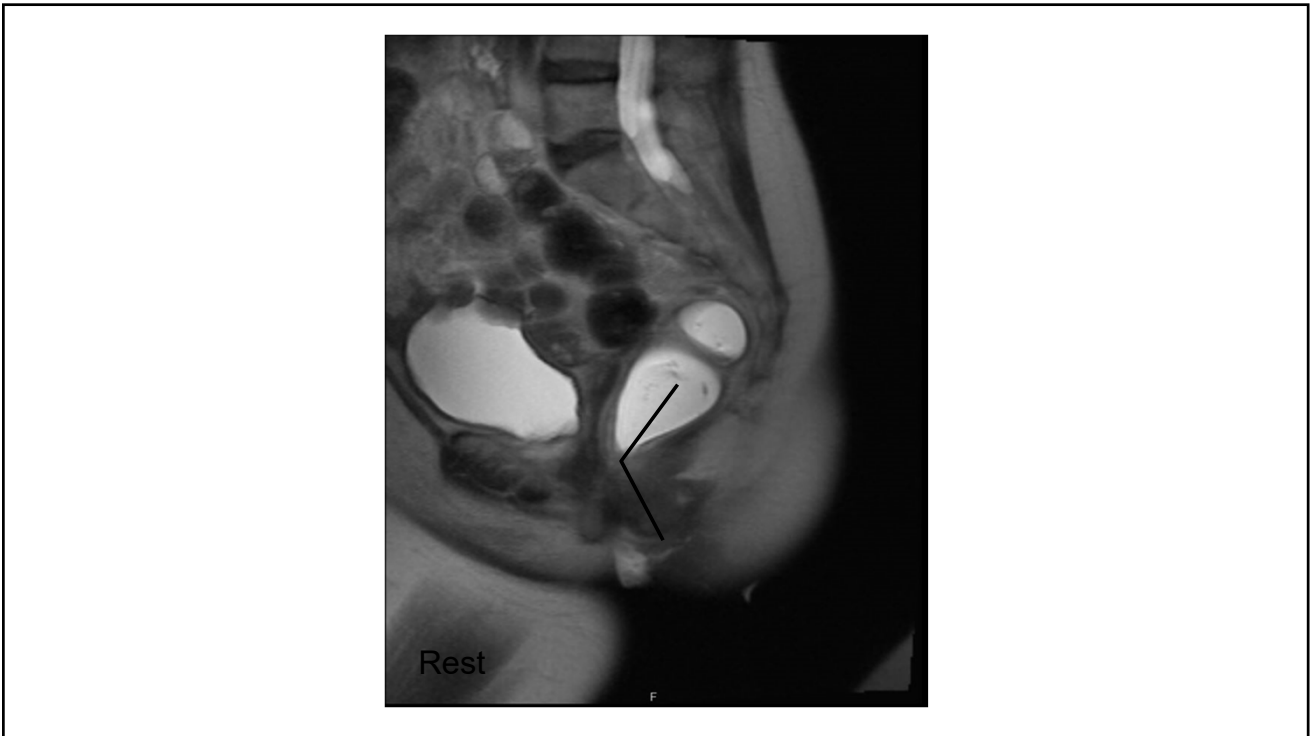
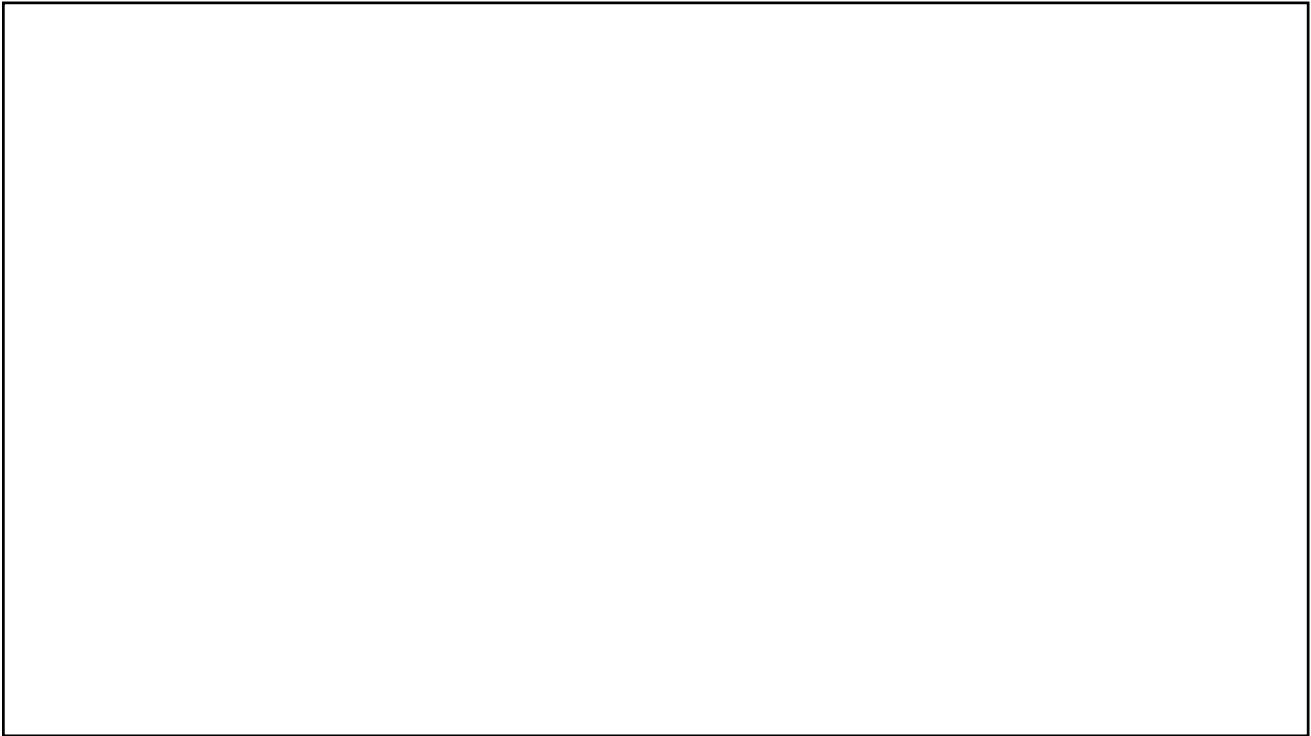


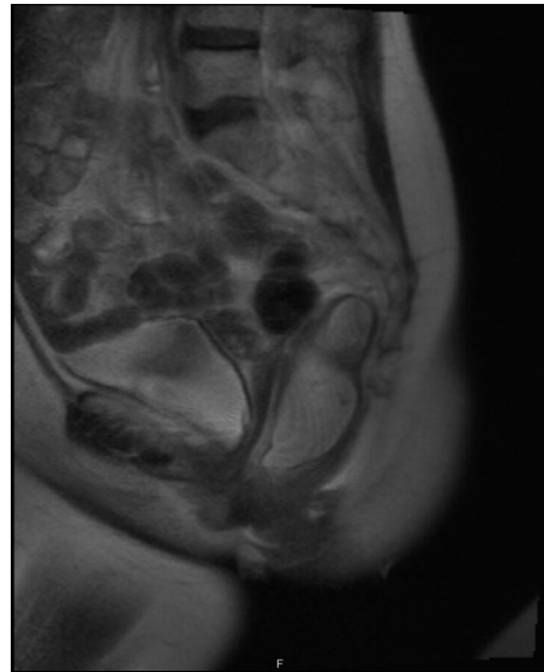


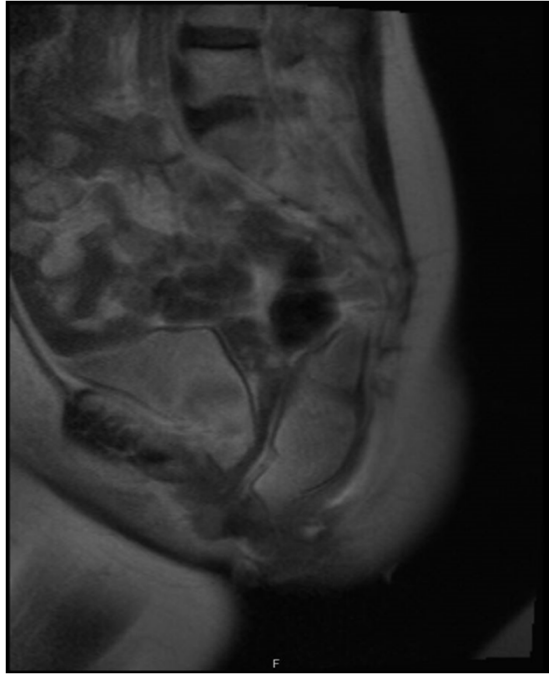


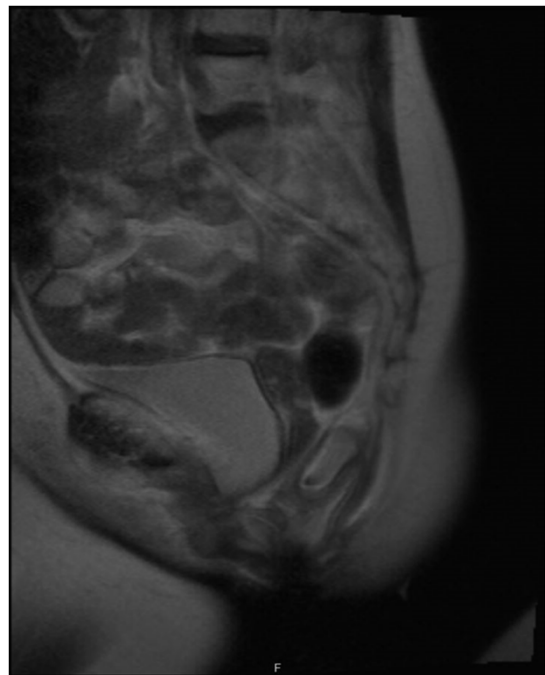
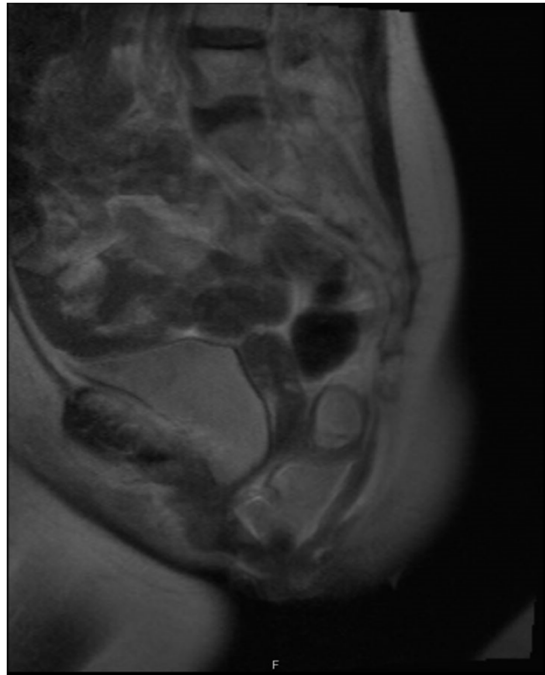


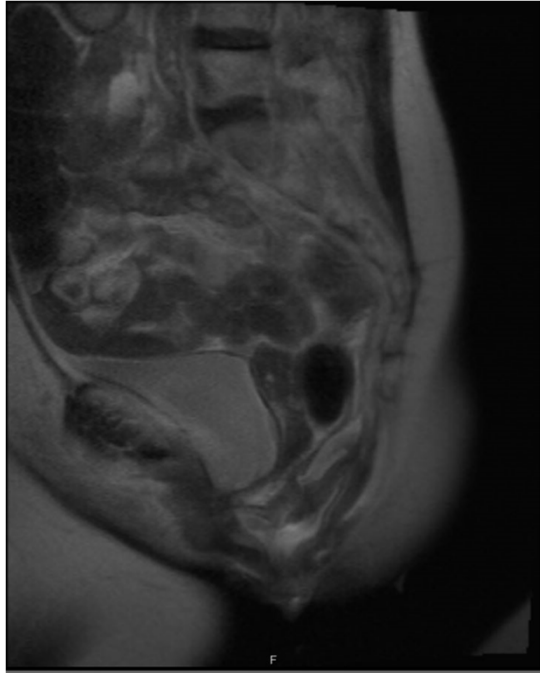


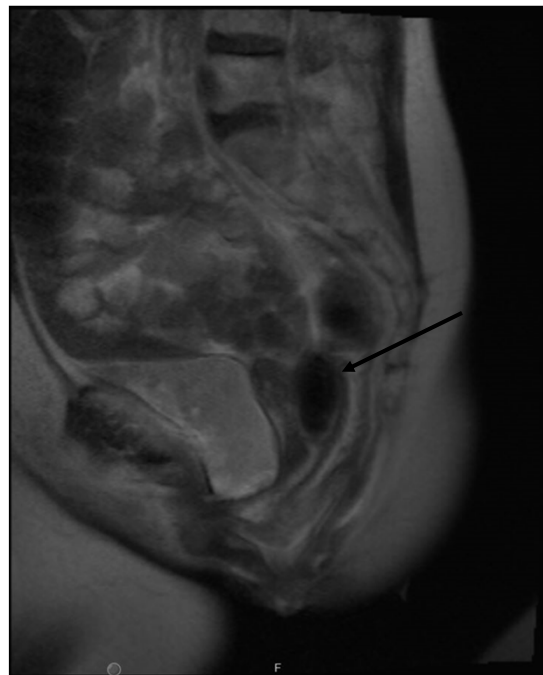
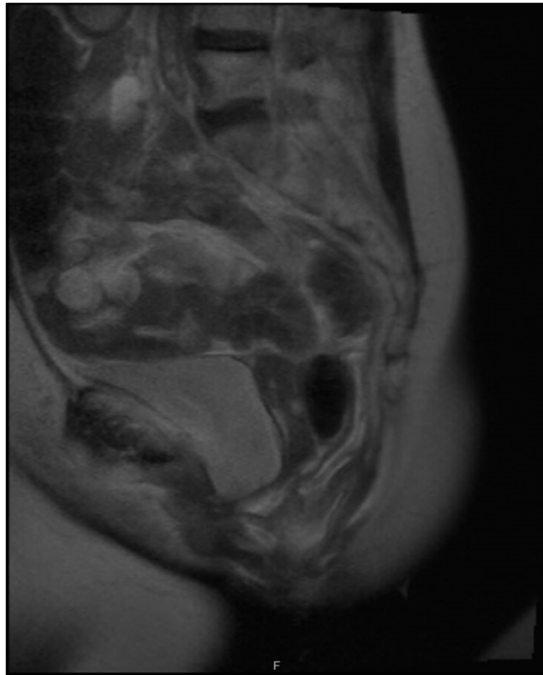


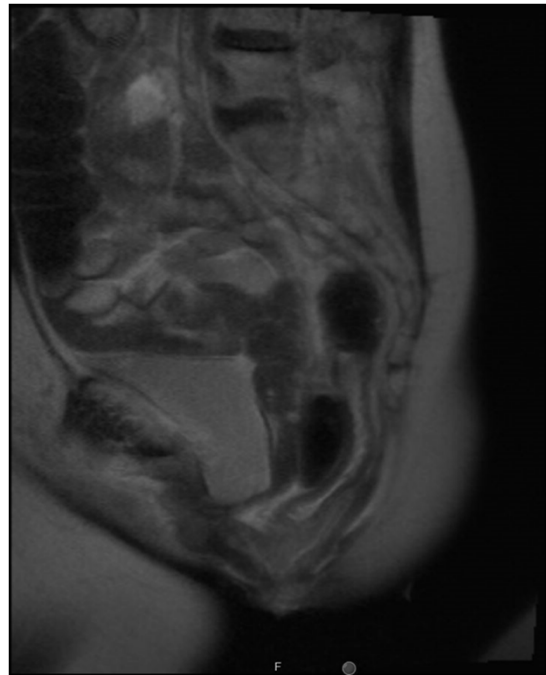
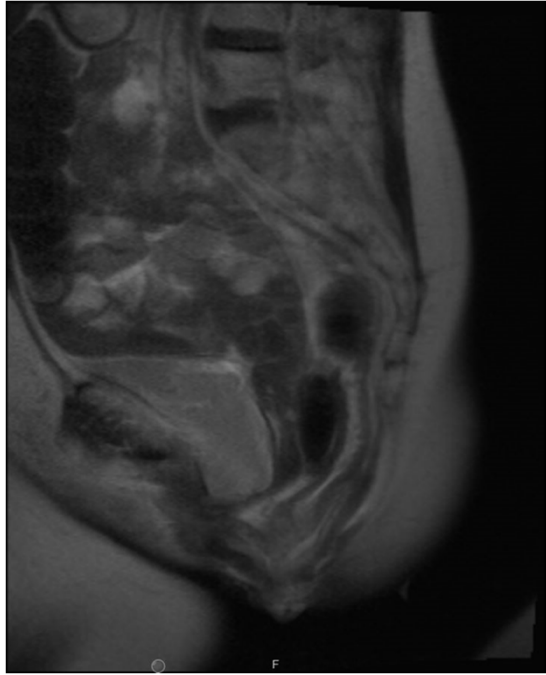


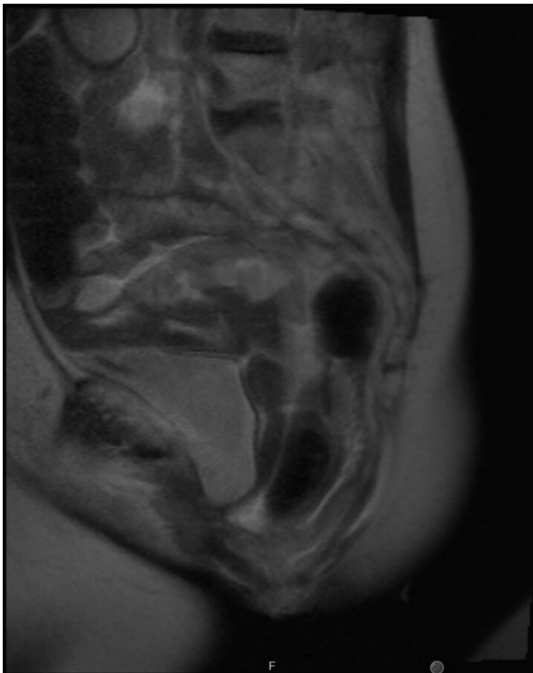
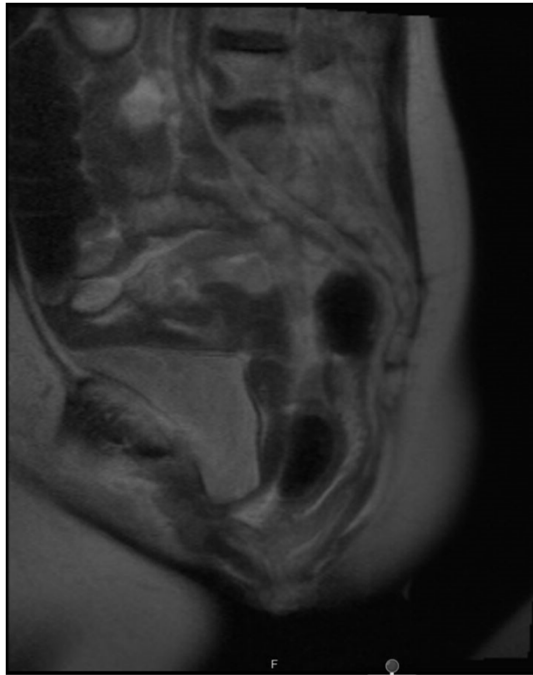


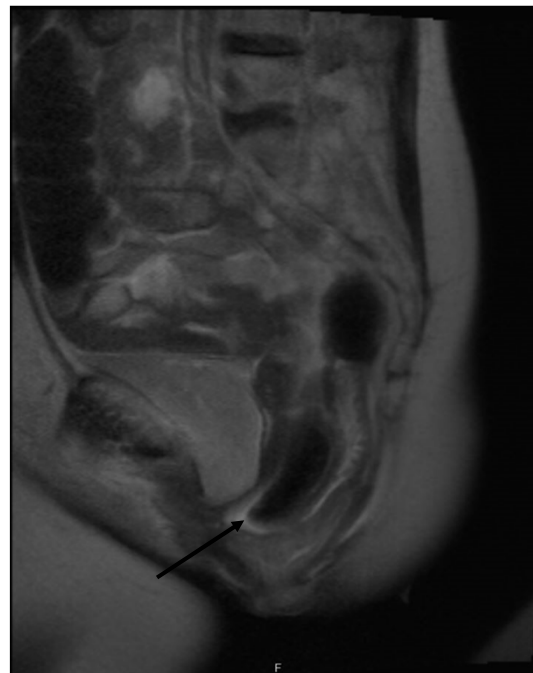
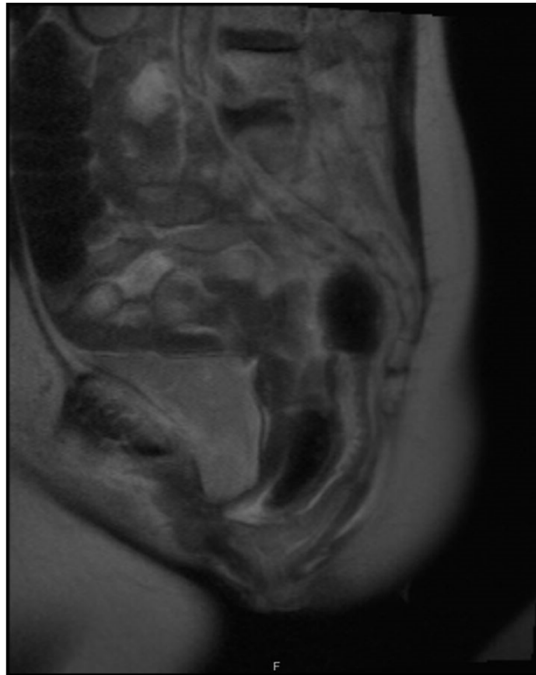












Surgical Options for Slow Transit Constipation

- Consider total abdominal colectomy
 - Ileorectal anastomosis
 - End ileostomy
- Higher complication rates than colectomy for other indications (24-43%)
 - Ileus, SBO, N/V, anastomotic leak
- High 30d readmission rates (66%) and ER utilization (72%)
- ~85% patient satisfaction, ~5% progress to permanent stoma

Dudekula A, et al. Aliment Pharmacol Ther 2015; 42:1281-93.
Knowles CH, et al. Colorectal Dis. 2017; 19 (Supp 3):17-36.

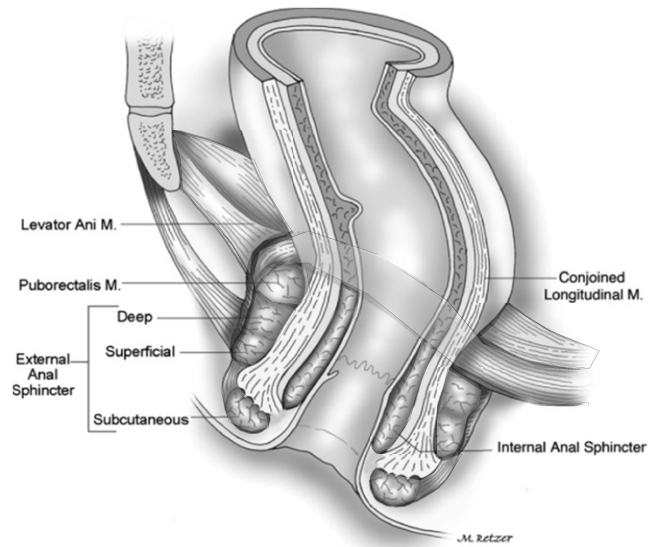
Treatment Options for Obstructed Defecation

- Stool bulking (fiber)
 - Laxatives and stool softeners do not address underlying mechanism
 - Bulky stool may activate RAIR
- Adequate hydration
- Positioning techniques
- Pelvic floor PT (at least 80% of patients have significant improvement)
- Surgery
 - If possible, address mechanism
 - If not possible, diversion

Surgical Approach to Fecal Incontinence

Requirements for Bowel Continence

- Mechanical barriers
 - Internal anal sphincter
 - External anal sphincter
 - Puborectalis
- Normal rectal compliance
- Intact innervation

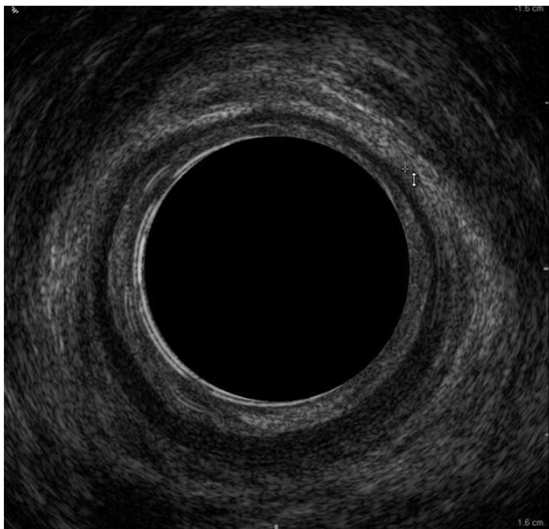


(Image modified from ASCRS Member Resource Library)

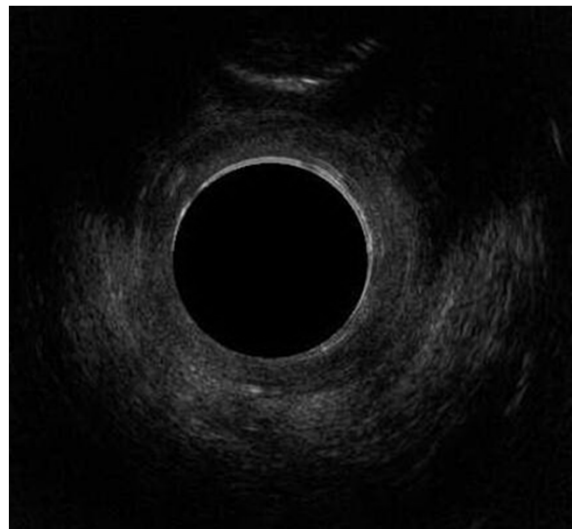
Nonoperative Management of Fecal Incontinence

- Manage stool consistency
 - Treatment of diarrhea if present
 - Fiber/bulking agents
- Continence plugs
- Pelvic floor PT
- Injectable hyaluronic acid-based bulking agent
 - Not well covered by insurance due to poor efficacy/durability
 - May be effective for mild symptoms
 - Duration of effect usually ~1 year

Ultrasound for Sphincter Assessment

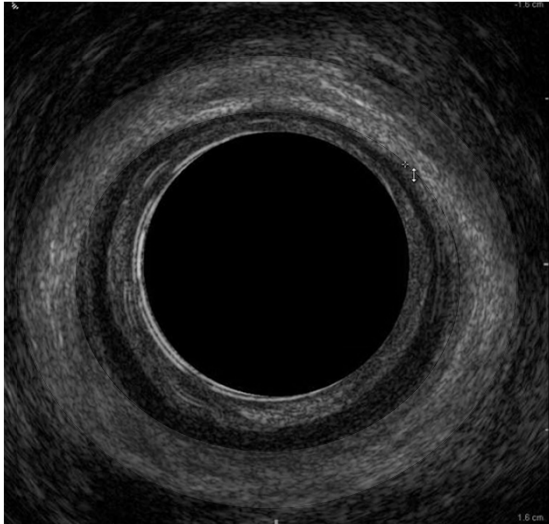


Normal

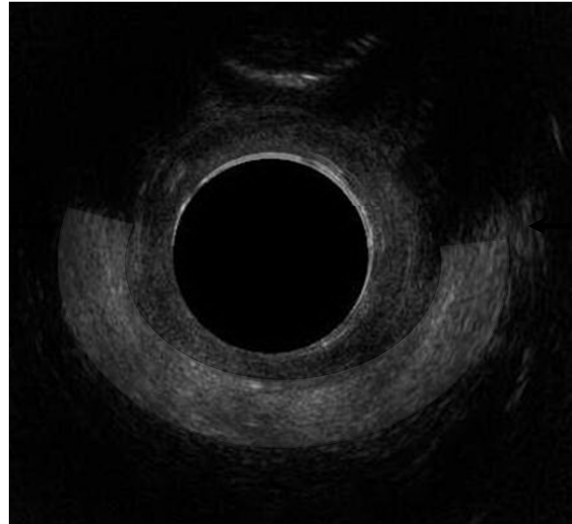


Anterior EAS defect

Ultrasound for Sphincter Assessment



Normal



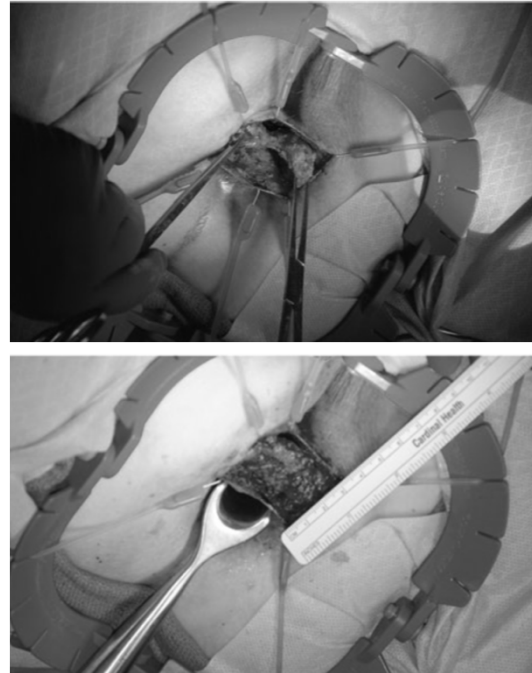
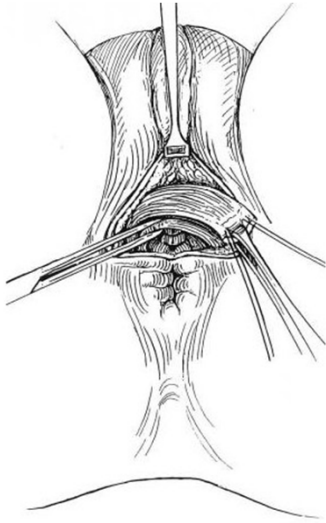
Anterior EAS defect

Sphincteroplasty

- Reapproximate sphincter defects, only $<180^\circ$
- Short term results (<3 years)
 - ~65-79% good/excellent
 - ~20-27% poor
- Long term results (5-10 years)
 - ~46% good/excellent
 - ~20-54% poor
- Better results in younger patients close in time to injury

Altomare DF, et al. World J Gastroent. 2010; 16(42): 5267-5271.

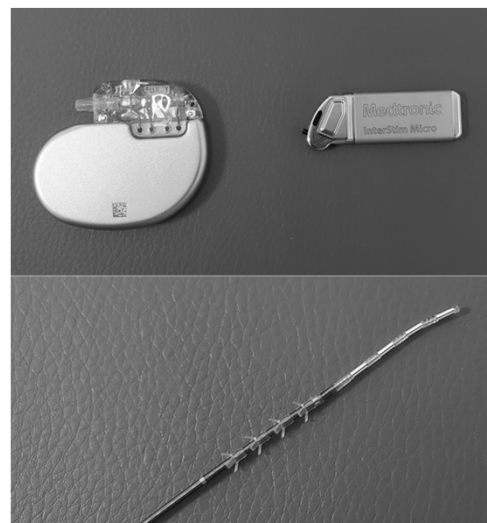
Sphincteroplasty

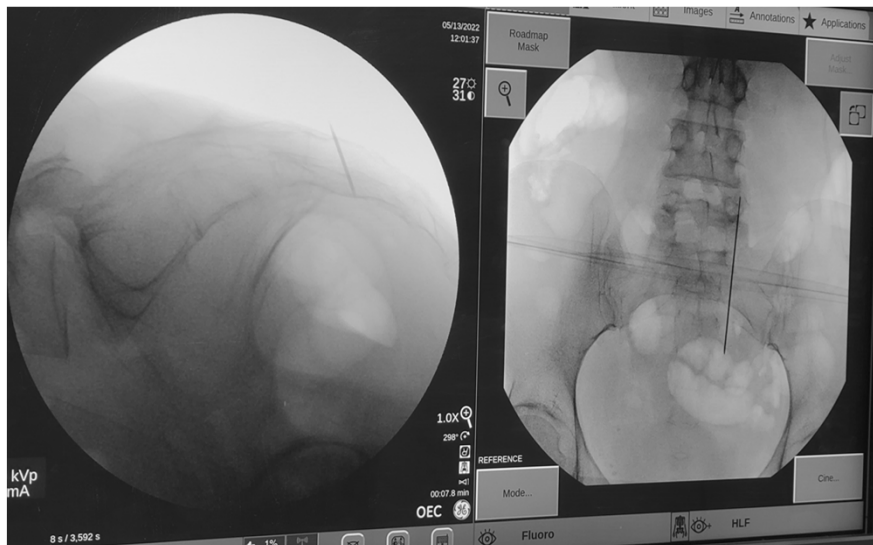


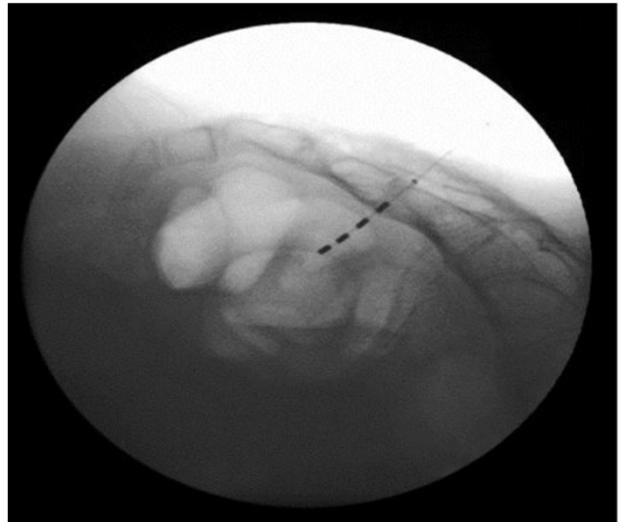
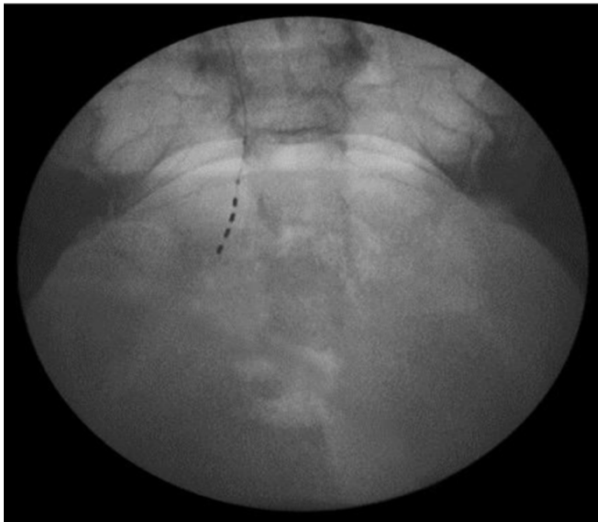
(Images from ASCRS Member Resource Library)

Sacral Nerve Stimulator (SNS)

- FDA approved in 2011 for fecal incontinence
- Tined electrode lead placed in S3 foramen
- Trial period with external generator of 1-2 weeks
 - Success = >50% reduction in episodes
- Successful trial → generator implant in gluteal fat







SNS Outcomes for Fecal Incontinence

- Primarily case series
- Response rate (at least 50% reduction in symptoms)
 - ~90% of patients who receive full implant¹
 - ~60-70% of all patients who undergo pre-implant trial
 - ~38-50% “cure” rate
- Long-term outcomes
 - One series² (N=73) showed benefit persists without decrement at least 5 years
- 15-30% may undergo explantation/revision in <5 years
 - Complications
 - Loss of efficacy
 - Device malfunction/migration

¹Thaha MA, et al. Cochrane Database of Systematic Reviews 2015; 8: 1-80.

²Hull T, et al. Dis Colon Rectum 2013; 56: 234-245.

Surgical Approach to Rectal Prolapse

Rectal Prolapse?

- External vs internal?
- Mucosal vs full thickness?
- Perineal/pelvic floor descent vs organ prolapse alone?
- Other compartments involved (bladder, vagina)?
- “Prolapse” represents a spectrum of loss of appropriate pelvic organ support



(Images from ASCRS Member Resource Library)

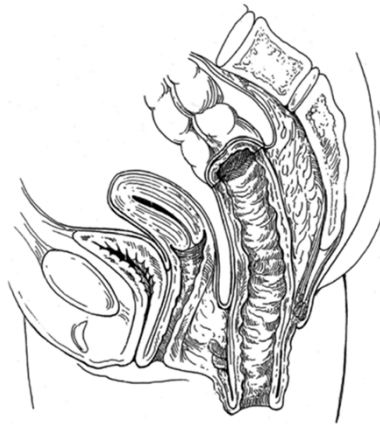
Internal Rectal Prolapse or Mucosal Prolapse

- Nonoperative management
 - High fiber diet
 - Adequate hydration
 - Enemas/suppositories for ODS symptoms
- Pelvic floor PT/biofeedback
- Patients with internal prolapse should be carefully selected for surgery
- Mucosal prolapse → excise redundant mucosa



Full Thickness External Rectal Prolapse

A patient with full thickness external prolapse risks developing or worsening incontinence if surgery is unnecessarily delayed!

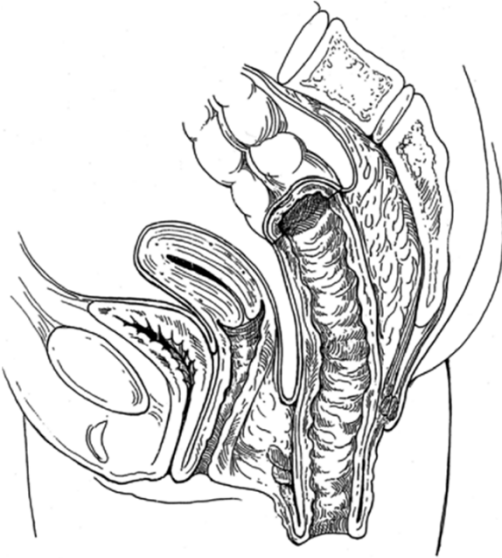


(Images from ASCRS Member Resource Library)

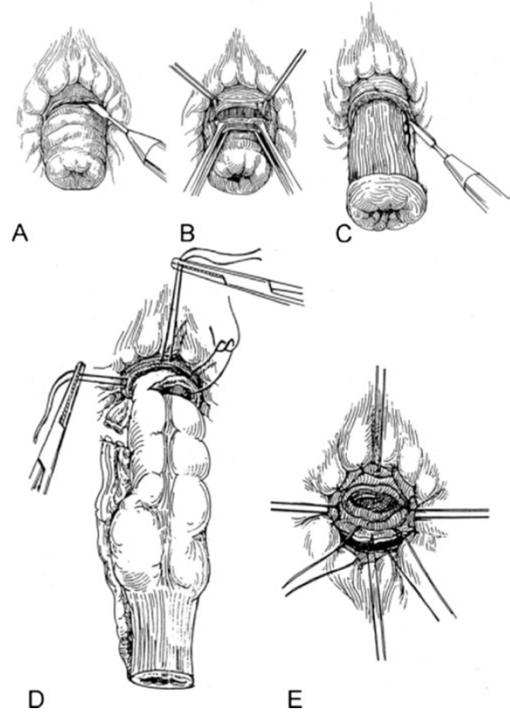
Operative Approaches for Rectal Prolapse

- Perineal
 - Higher short-term recurrence (up to 25-30% in 5 years)
 - Lower perioperative risk, less pain*
 - Involve excising and/or plicating redundant rectosigmoid tissue
 - Better for high risk surgical candidates or if extensive prior pelvic surgery
- Abdominal
 - ? lower recurrence vs perineal approaches (5-30% long term)
 - Higher perioperative risk, more pain*
 - Involve reestablishing proximal support/fixation of the rectum
 - Risk of persistent/worsened constipation

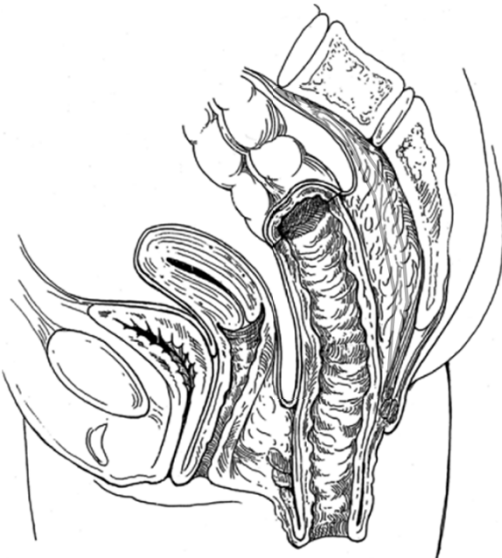
Perineal Proctectomy



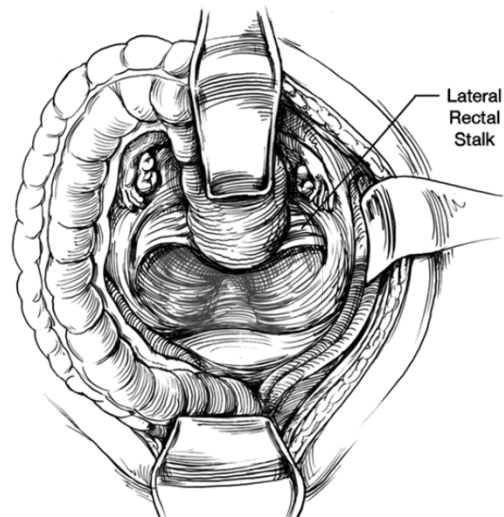
(Images from ASCRS Member Resource Library)



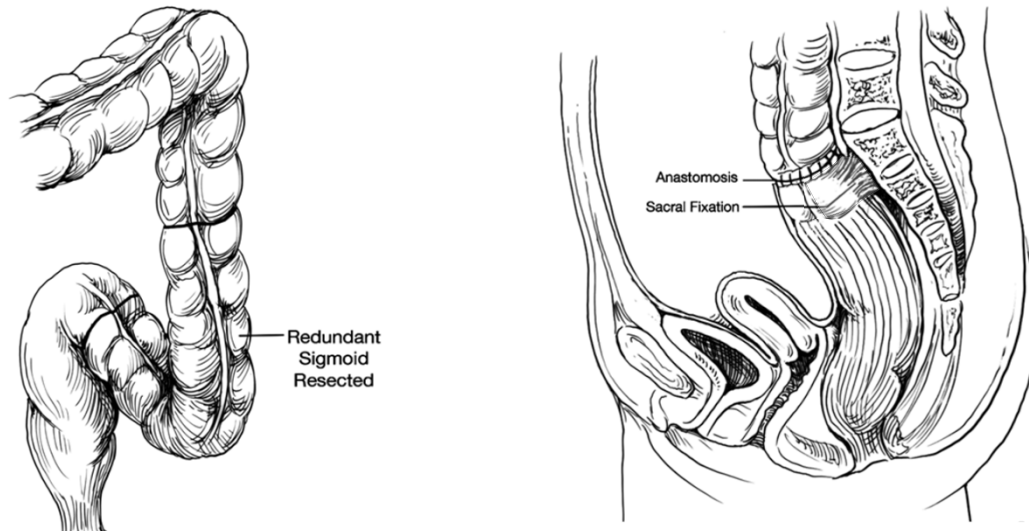
Sutured Rectopexy (+/- Resection)



(Images from ASCRS Member Resource Library)



Sutured Rectopexy (+/- Resection)



(Images from ASCRS Member Resource Library)

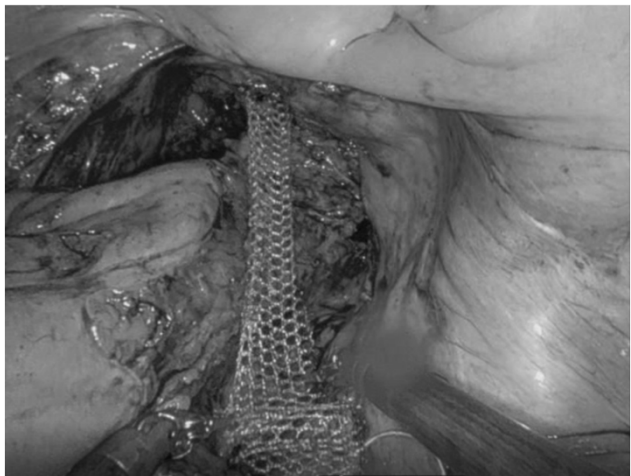
Ventral Mesh Rectopexy

- Mesh sewn to anterior rectum and posterior vagina
- Less constipation (sometimes improved) vs posterior rectopexy
- Low recurrence rate (~5%)
- Mesh complications 0.7-2%

Ventral Mesh Rectopexy



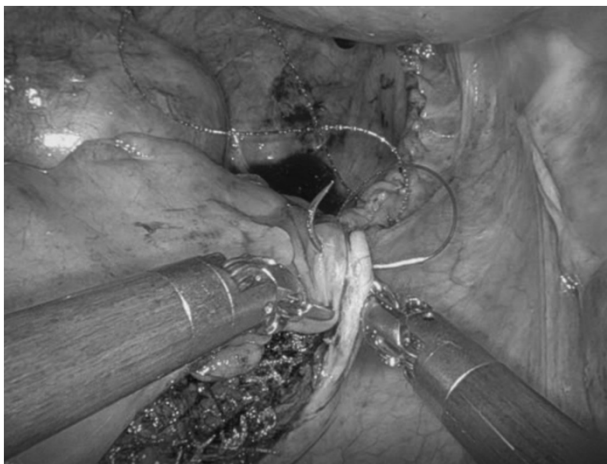
Ventral Mesh Rectopexy



Ventral Mesh Rectopexy



Ventral Mesh Rectopexy



When All Else Fails

- Diversion with ostomy is the last resort for severe refractory pelvic floor dysfunction.
- When is it indicated?
 - When all other reasonable options have been tried
 - The patient tells you they're ready

Summary

- Treatment for GI/pelvic floor dysfunction should be tailored to the underlying mechanism(s).
 - Understanding those is essential before considering surgery!
- Set clear expectations with the patient – beware of “chasing perfect.”
 - Not all symptoms may respond or resolve after surgery.
- Surgery is a quality of life intervention for these disorders.
 - Patients often trade one set of issues for another.
- Surgeons and patients must weigh the risks and anticipated benefits of surgery together.