Management of Anal Sphincter Incontinence

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Fecal incontinence in US women: A population-based study

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Melville et al

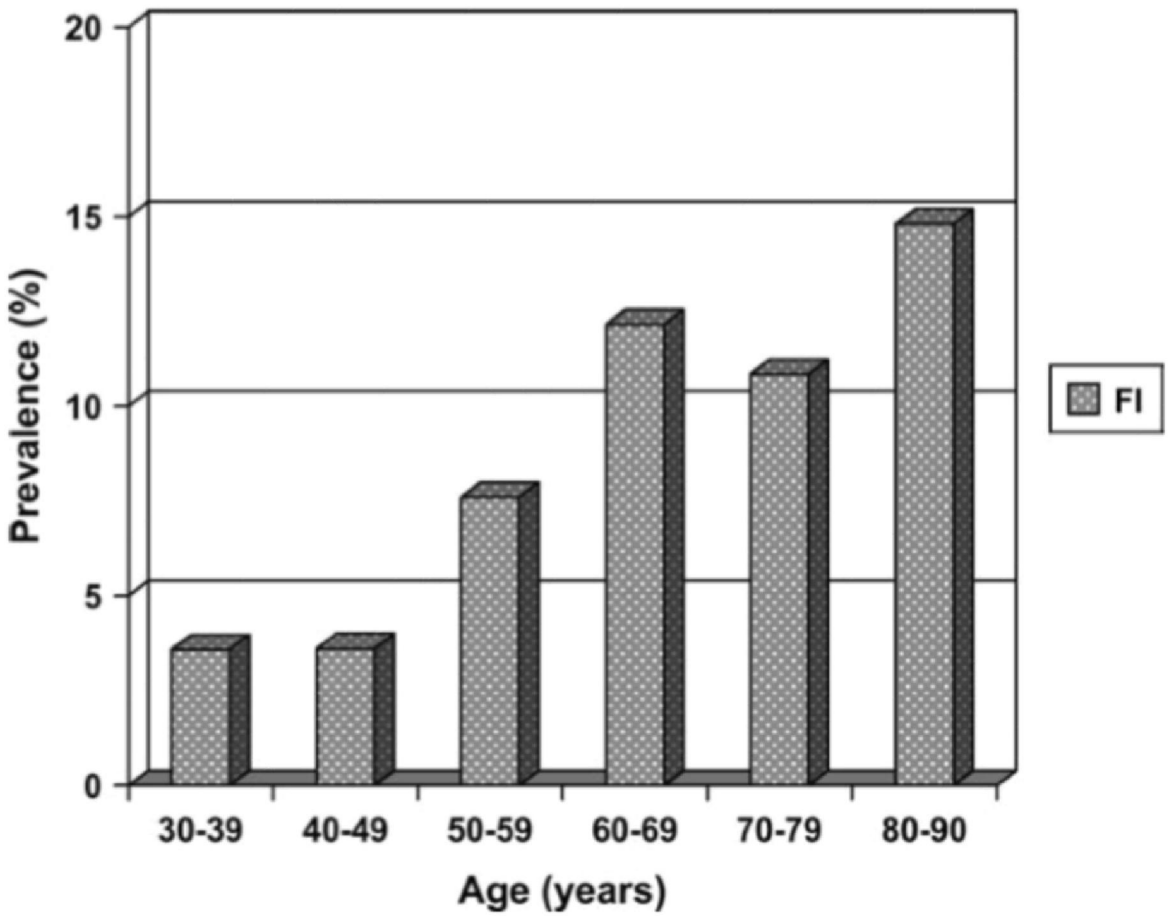
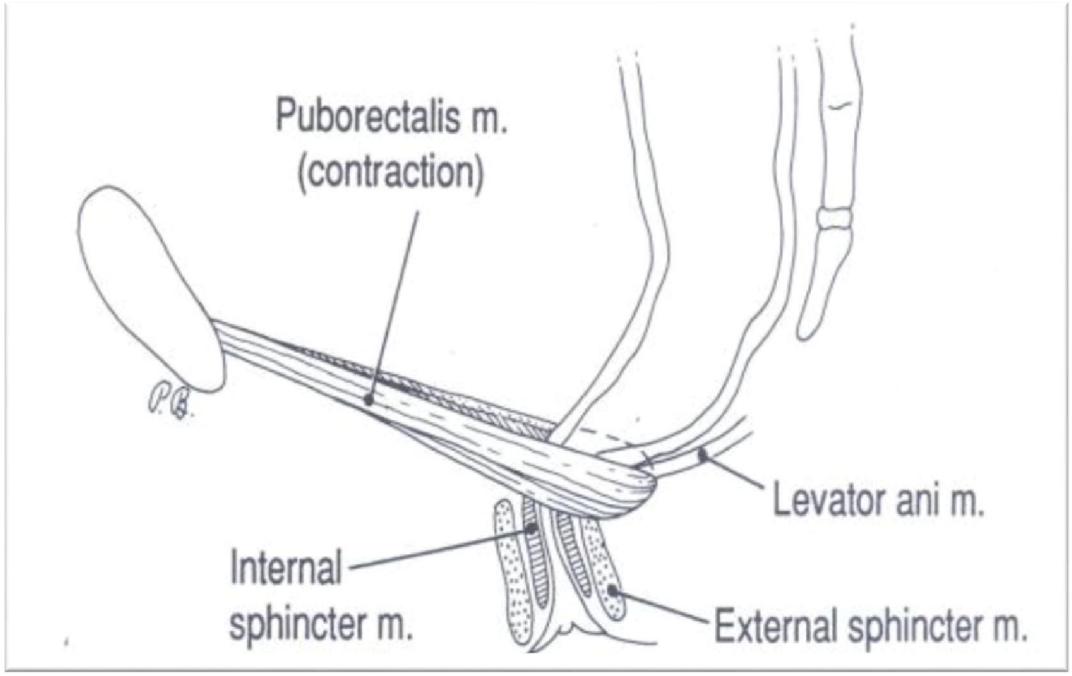


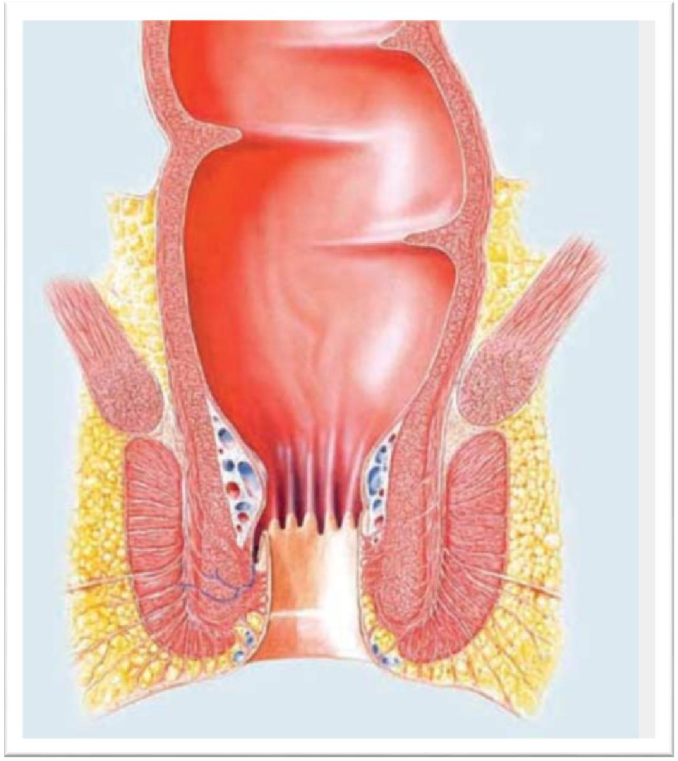
Figure 1 Prevalence of fecal incontinence by decade of age.

Plan

- History
- Exam
- When to investigate yourself
- When to refer to colo-rectal for investigation
- Gynae initiated treatment options
- Colo-rectal initiated treatment

Faecal Continence





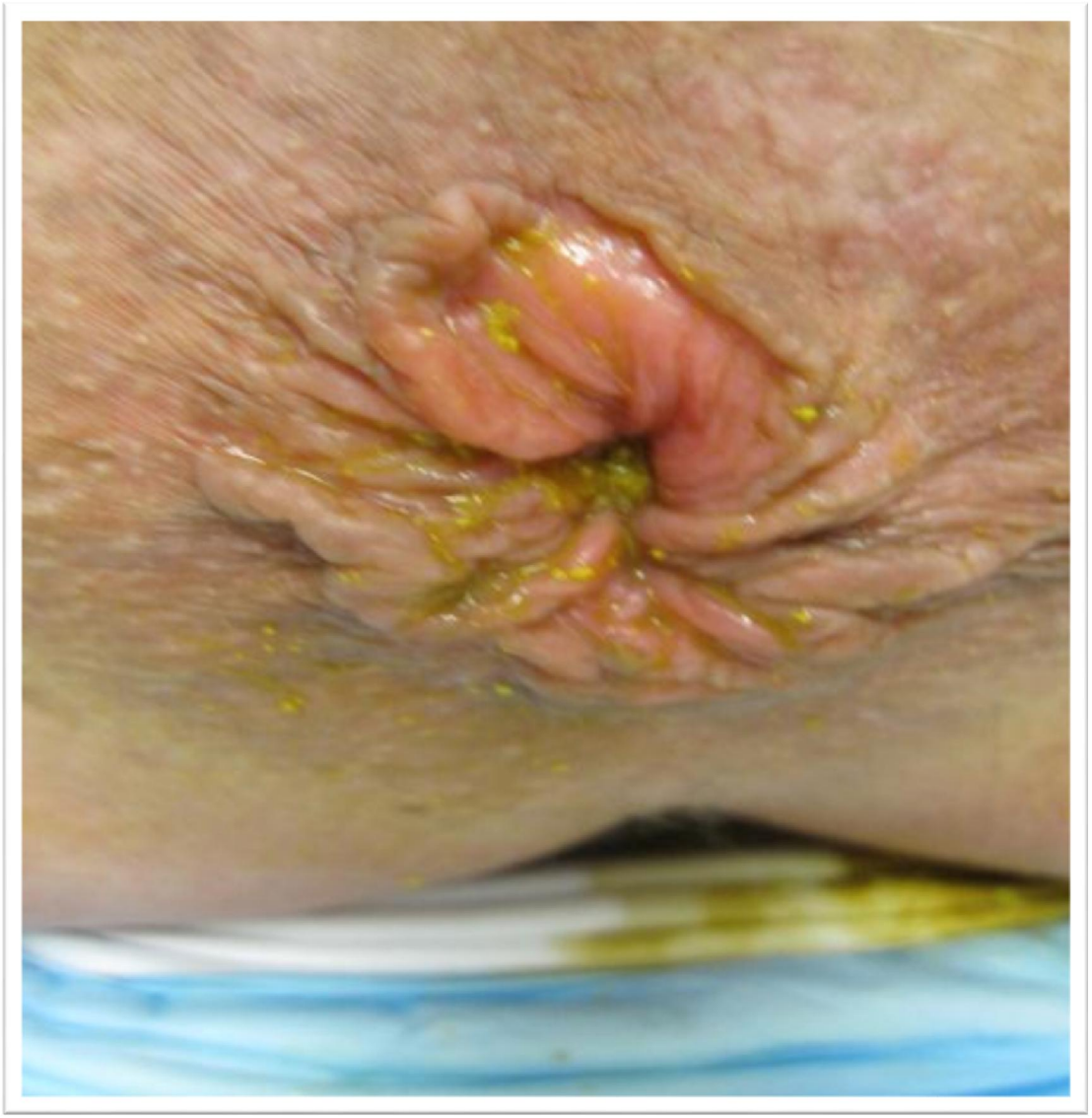
4 Pillars of Faecal Continece

1. Rectal sensation

2. Stool Consistency

3. Rectal Distensibility

4. Motor Function of Sphincters and Pelvic floor



Faecal Incontinence: THE SYMPTOM

2 Patterns

- Urge Incontinence
- Passive incontinence (some have soiling without frank incontinence)

Same investigative work up

Causes: 1.Anal Sphincter

Obstetric Injury

85% of women with injuries have residual damage despite repair

Surgery

Fistula, Haemorrhoids, chronic fissure, rectal Ca

Degeneration of IAS

Kamm MA. Obstetric damage and faecal incontinence. *Lancet* 1994:344:730-3.

Causes: 2. Diarrhoea and constipation

- Crohns and Ulcerative Colitis
- IBS
- Drugs
- Overflow

Causes: 3. Neurological disease

- MS
- DM – with autonomic neuropathy
- Pudendal neuropathy

Causes: 4. Congenital Disorders

- Spina Bifida
- Hirschprungs
- Anal atresia

Causes: 5. Idiopathic

- Atrophy of anal cushions
- Rectoanal Intussuseption

Multiple factors underscore the pathophysiology of anal incontinence

1. Rectal sensation

2. Stool Consistency

3. Rectal Distensibility

4. Motor Function of Sphincters and Pelvic floor

Pertinent points in history

1. Bowel Habit

- Change in bowel habit
- Bleeding
- Straining and digitation
- Distinguishing between flatus and solid stool
- Urinary leakage or rectal prolapse

Bristol Stool Chart

Type 1		Separate hard lumps, like nuts (hard to pass)
Type 2		Sausage-shaped but lumpy
Type 3		Like a sausage but with cracks on its surface
Type 4		Like a sausage or snake, smooth and soft
Type 5		Soft blobs with clear-cut edges (passed easily)
Type 6		Fluffy pieces with ragged edges, a mushy stool
Type 7		Watery, no solid pieces. **Entirely Liquid**

Pertinent points in history

2. Drugs

Drugs that alter sphincter tone

Nitrates, calcium channel antagonists, blockers, sildenafil, selective serotonin reuptake inhibitors

Broad spectrum antibiotics (multiple mechanisms)

Cephalosporins, penicillins, macrolides

Topical anal drugs

Glyceryl trinitrate ointment, diltiazem gel, bethanechol cream, botulinum A toxin

Drugs causing profuse loose stools

Laxatives, metformin, orlistat, selective serotonin reuptake inhibitors, antacids containing magnesium, digoxin

Constipating drugs

Loperamide, opioids, tricyclic antidepressants, antacids containing aluminium, codeine

Tranquillisers or hypnotics (reduce alertness)

Benzodiazepines, tricyclic antidepressants, selective serotonin reuptake inhibitors, antipsychotics

Pertinent points in history

3. Diet and fluid history

Fruit and vegetables
Rhubarb, figs, prunes, and plums (all contain a natural laxative). Beans, pulses, cabbages, and sprouts

Spices
Such as chilli

Artificial sweeteners
Found in sugar free or diabetic products

Alcohol
Especially stout, beers, and ales

Lactose
Some patients may have a degree of lactase deficiency, although they may be able to tolerate small quantities of milk and yoghurt

Caffeine
Can loosen stool in susceptible patients

Vitamin and mineral supplements
Excessive doses of vitamin C, magnesium, phosphorus, or calcium can increase faecal incontinence

Olestra fat substitute
Can cause loose stools

Neuro Exam

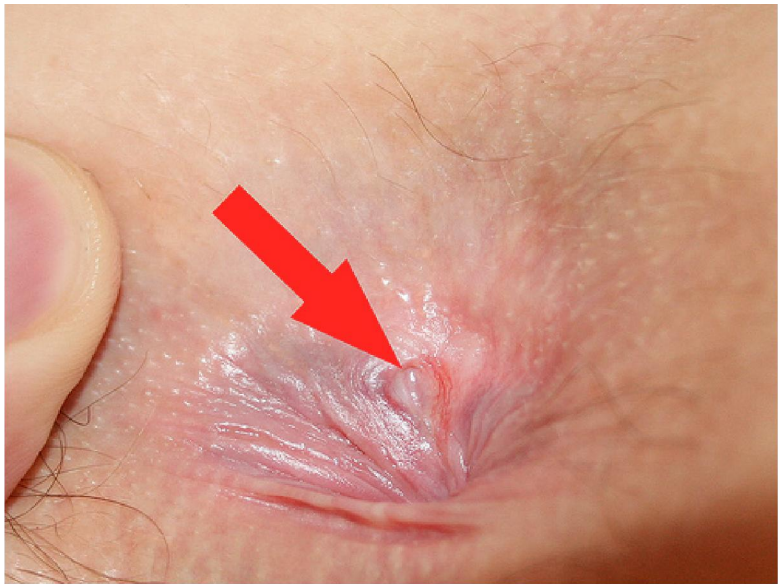
- S2, S3, S4 nerves – peri-anal skin
- Decreased ankle reflexes – SCI or Cauda Equina

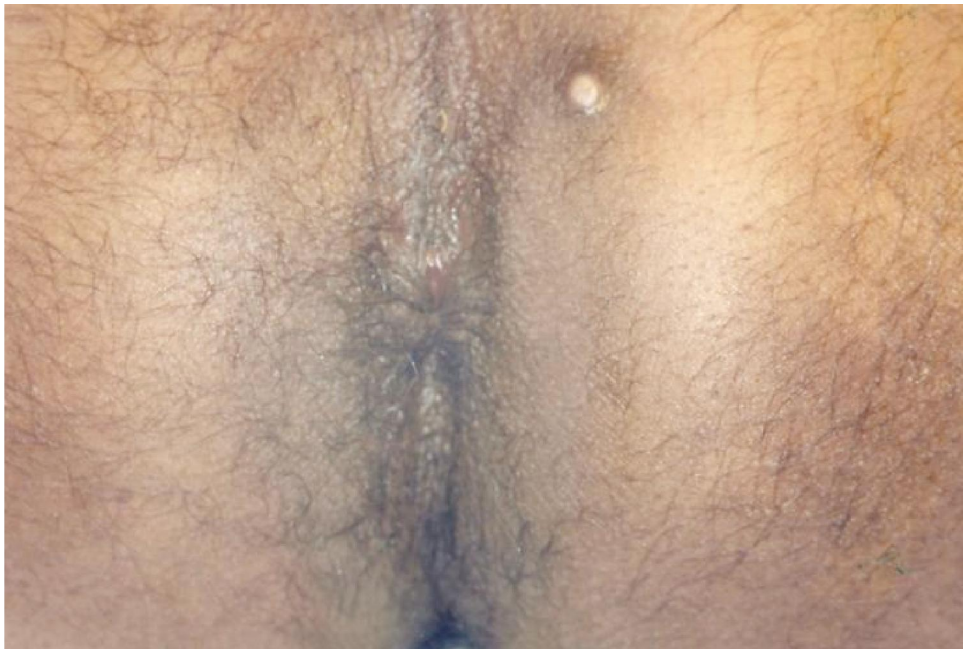
Abdomen

- Ileal disease – RLQ (Crohns)
- Abdominal mass

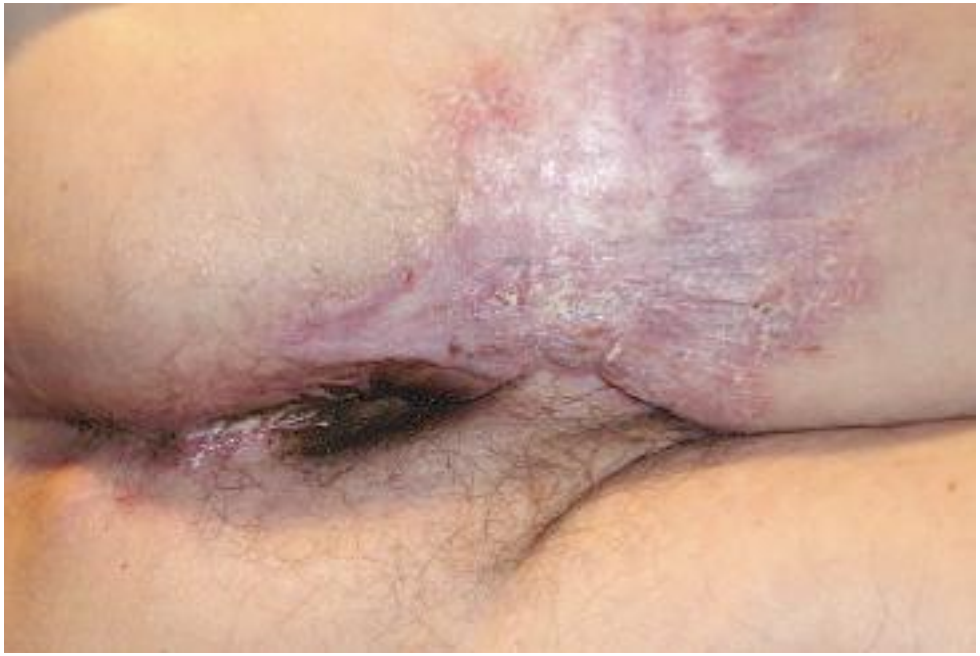
Don’t only zoom in on the vagina

Fistula

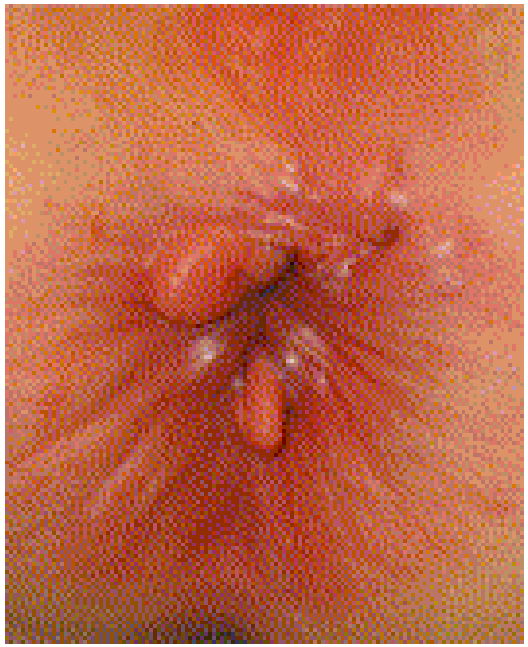




Scarring

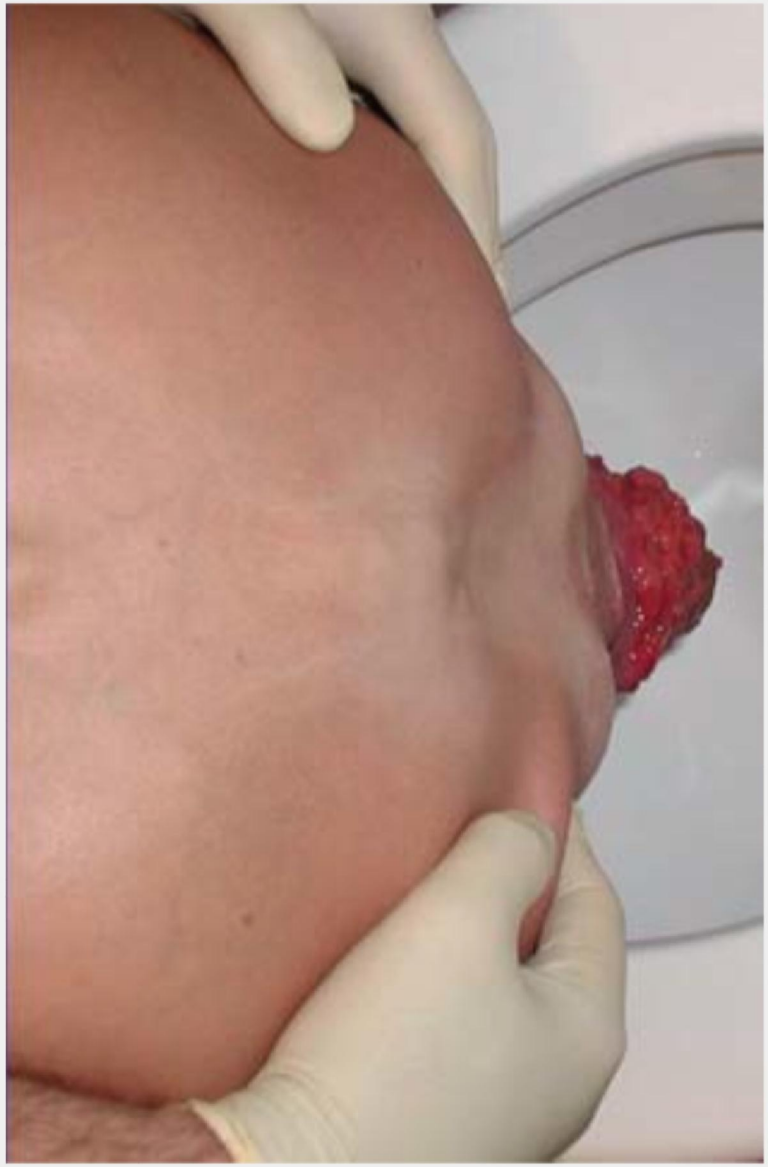


Skin Irritation



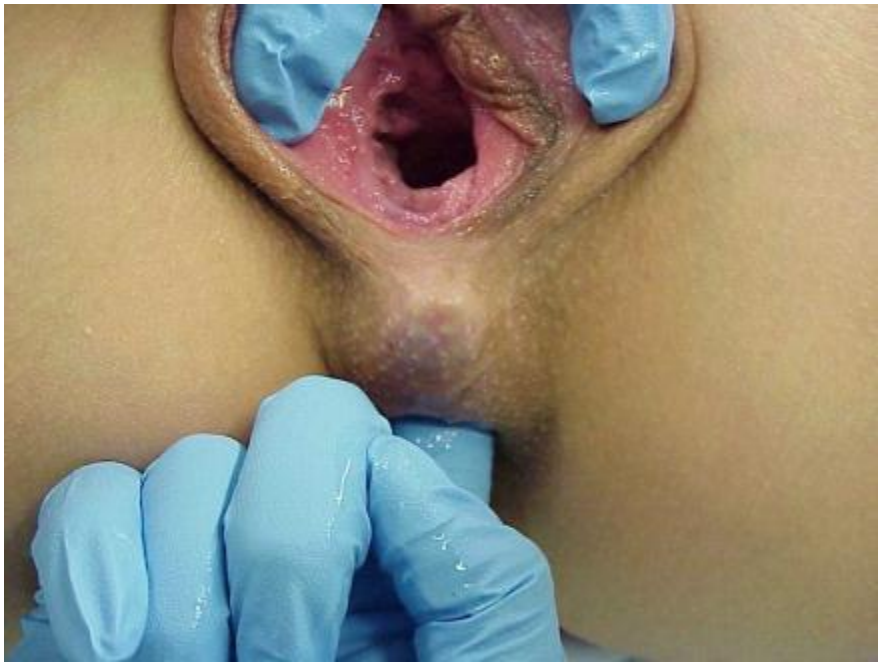
Bear Down

- Look for perineal descent
- Look for rectal prolapse
- Apply traction to the anal verge – if excessive gaping then reduced tone



Digital Rectal Exam

- Squeeze
- Some correlation with manometry



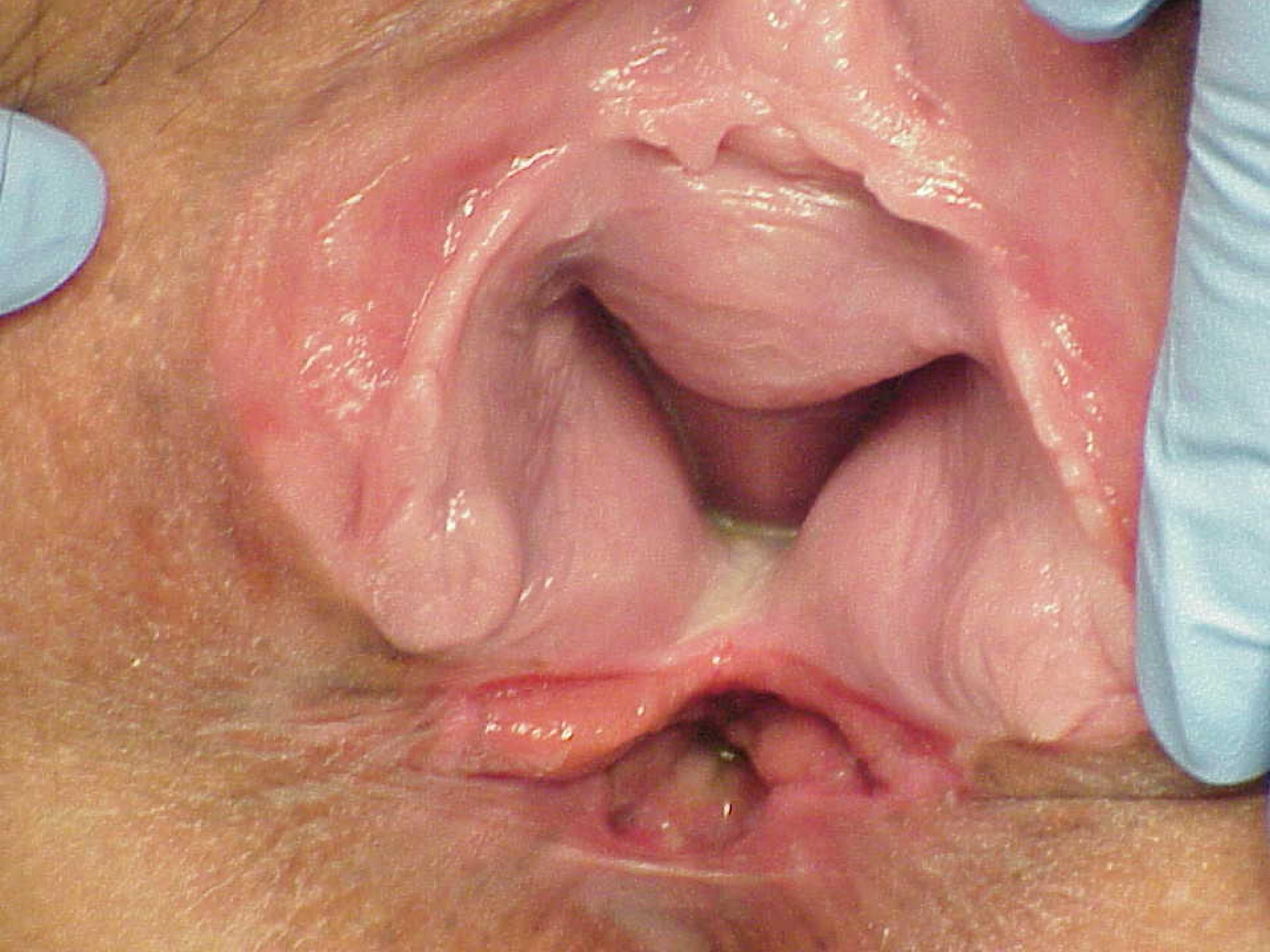
What next?

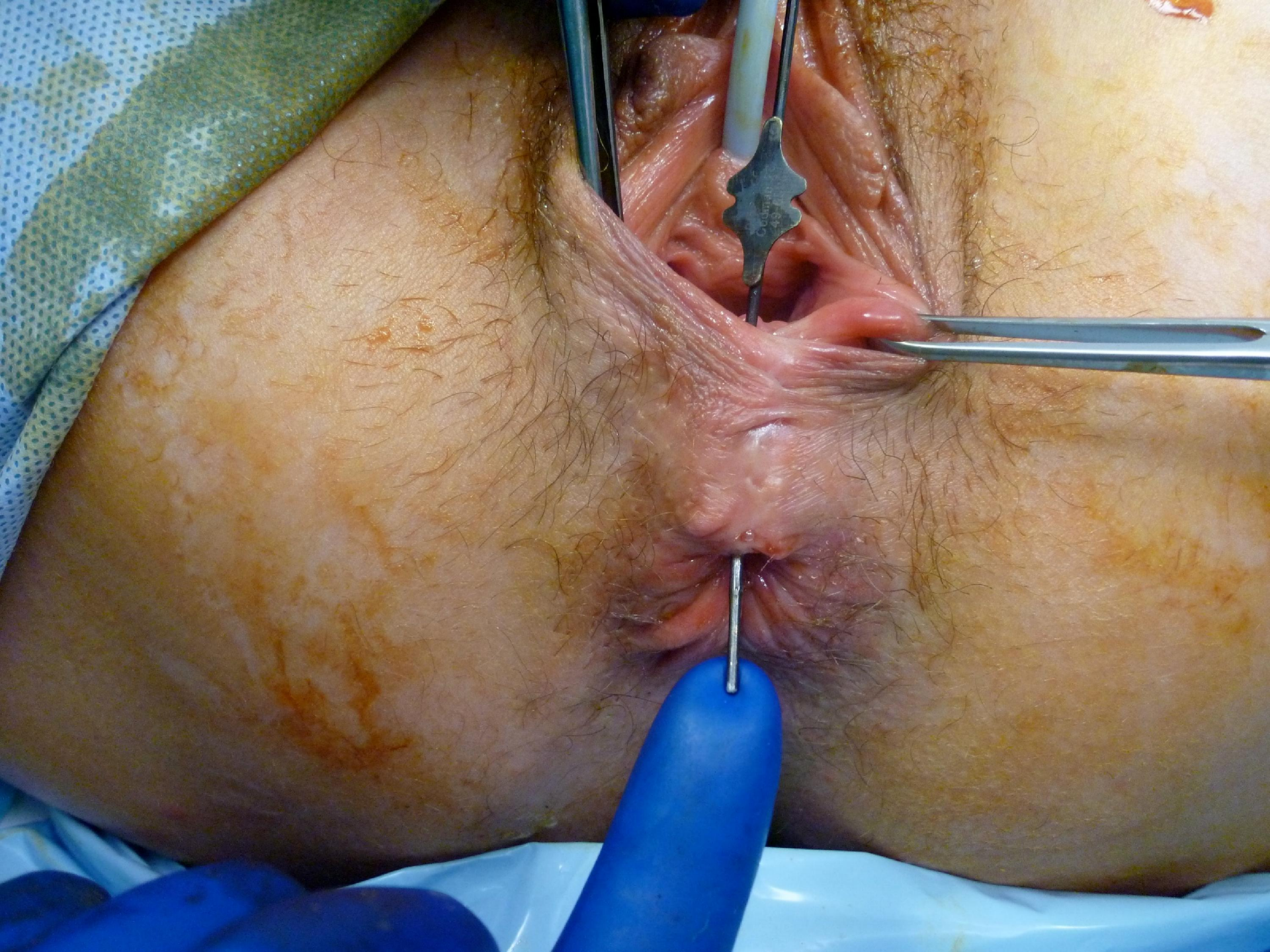
Indications for colonoscopy/ sigmoidoscopy

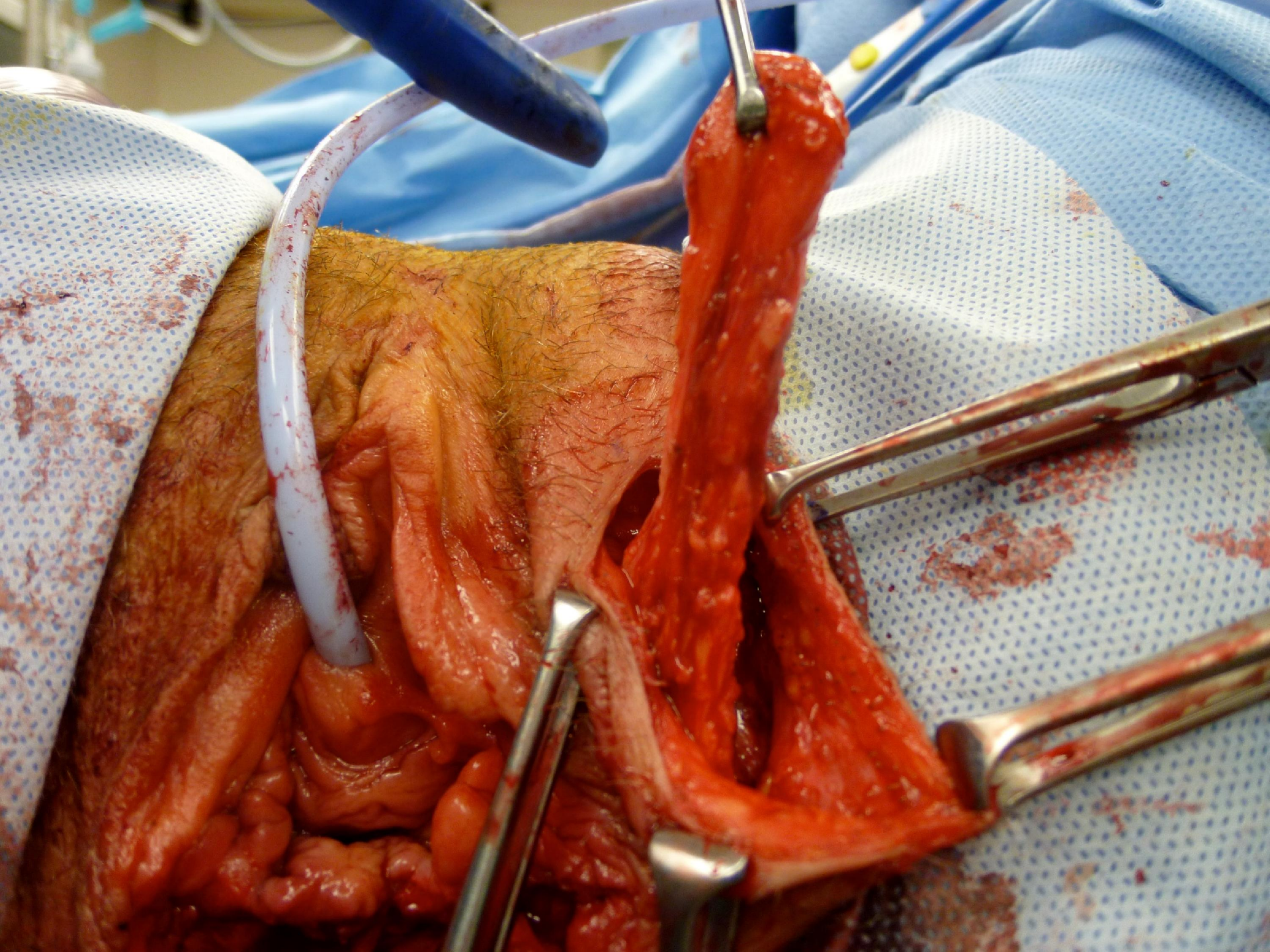
- Abdominal or rectal mass
- Rectal inflammation
- Bloody diarrhea
- Rectal bleeding
- Significant abdominal pain

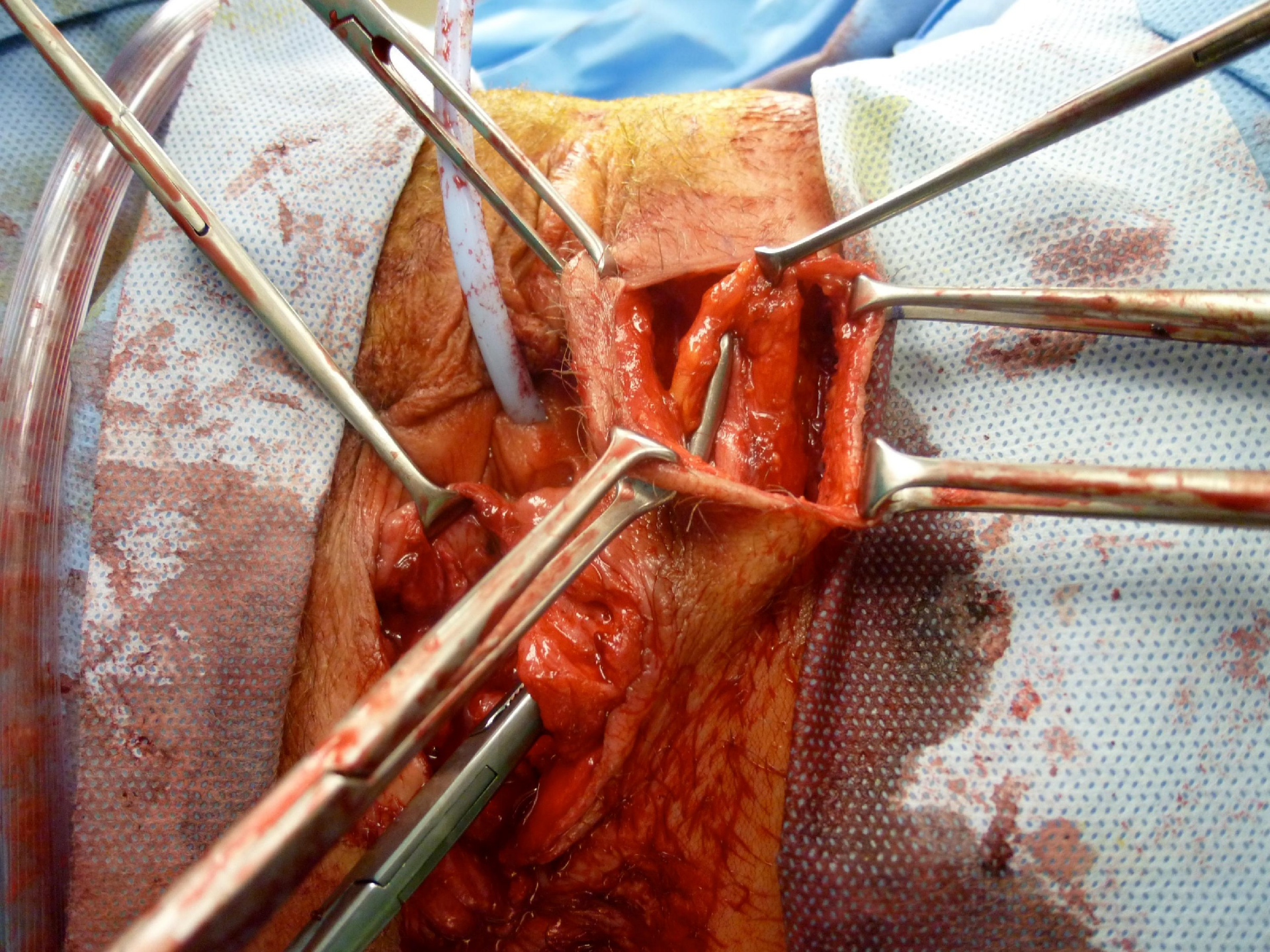
Immediate treatment

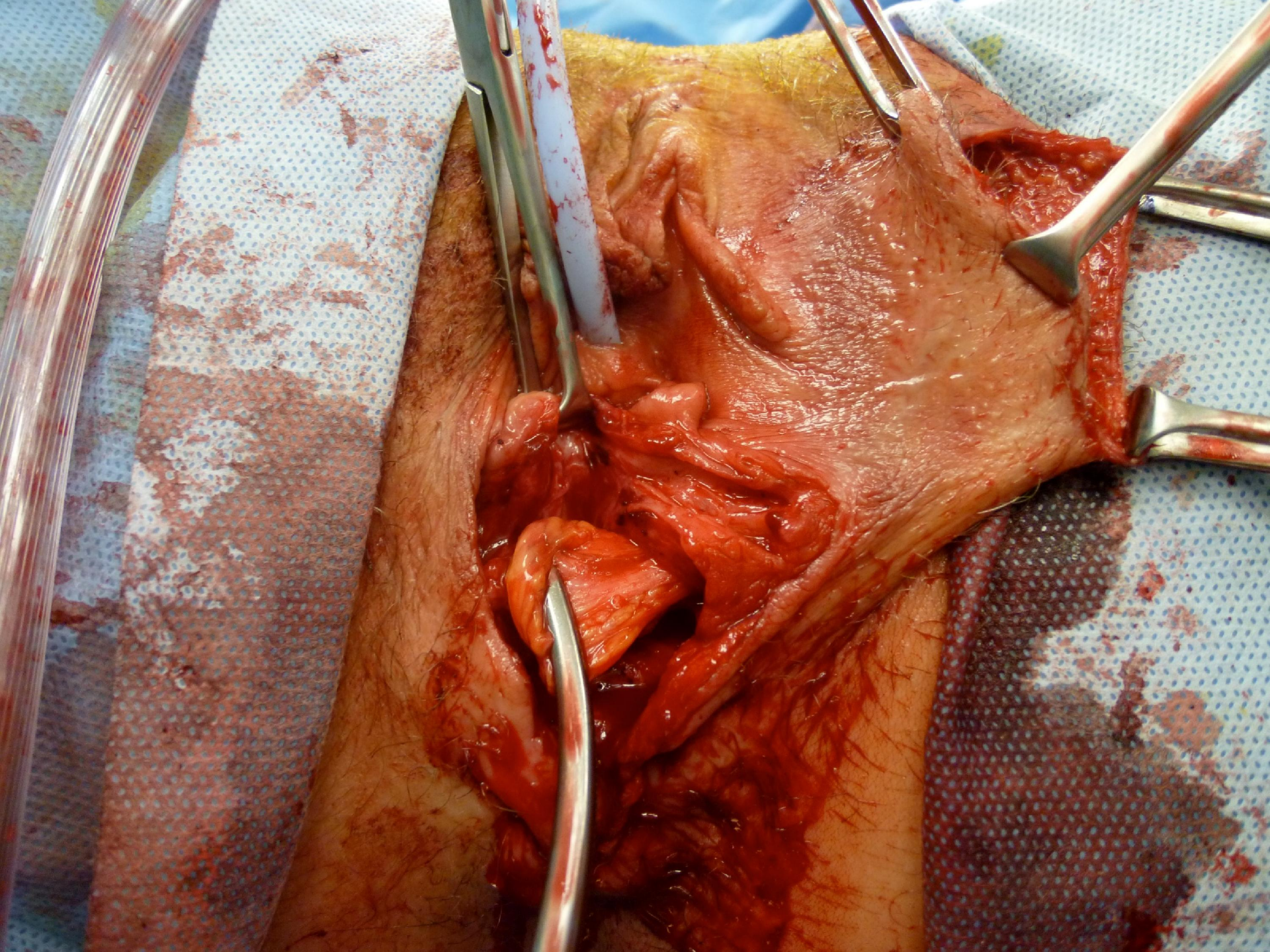
- Rectal prolapse
- Central disc prolapse
- Cloacal deformity
- Fistula
- Faecal impaction

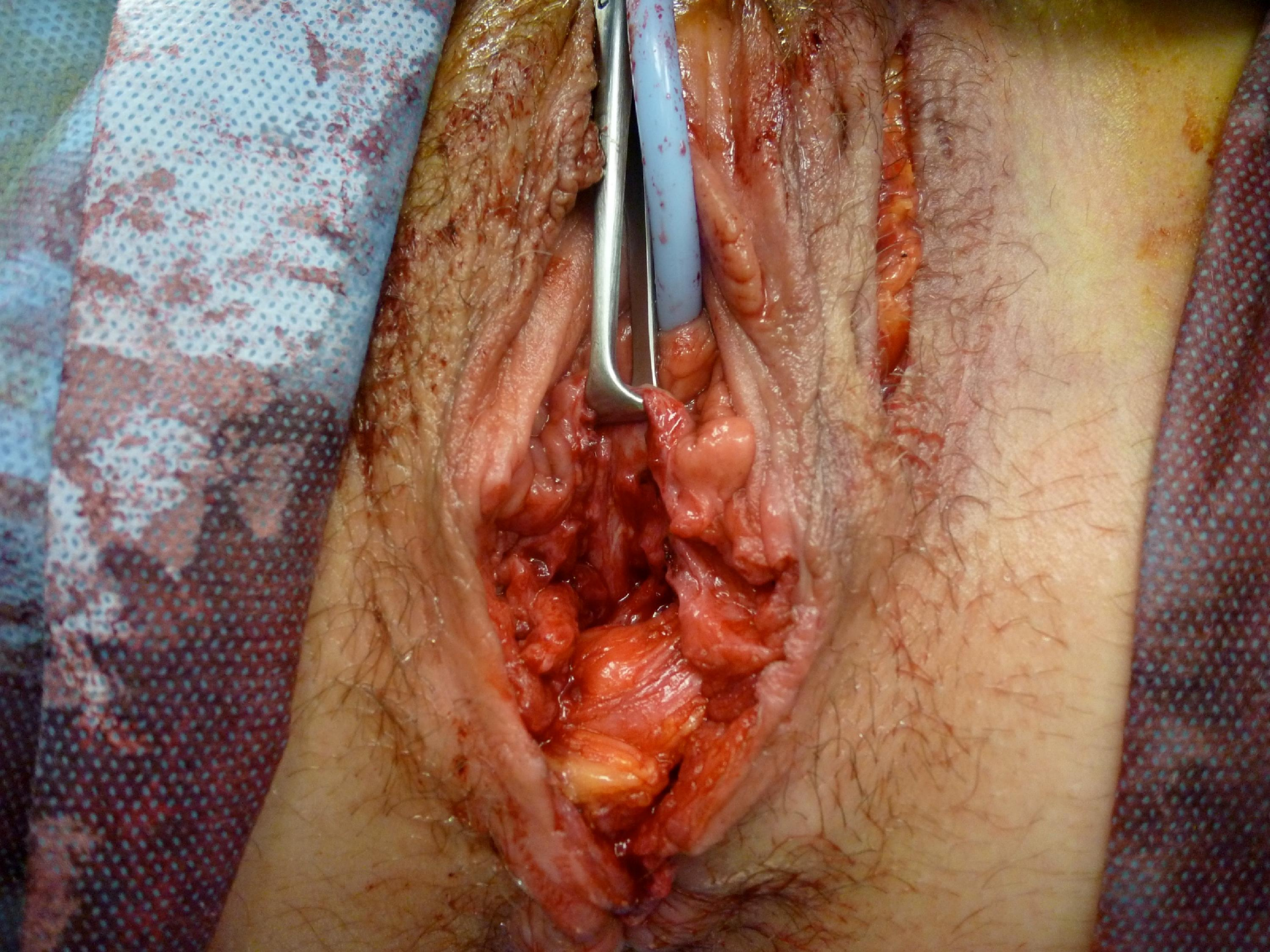












If no dramatic perineal defect or fistula

Empirical Treatment

- Diet
- Stop offending medications
- Bulking agents (Psyllium powder) in the evening
- Anti-diarrheal agents
  - Loperamide 2-4 mg QDS (Imodium)
  - Diphenoxylate hydrochloride (2.5mg) + Atropine sulphate (0.025mg) = (Lomotil)

Emphasize compliance at appropriate times eg first thing in the morning

When to test

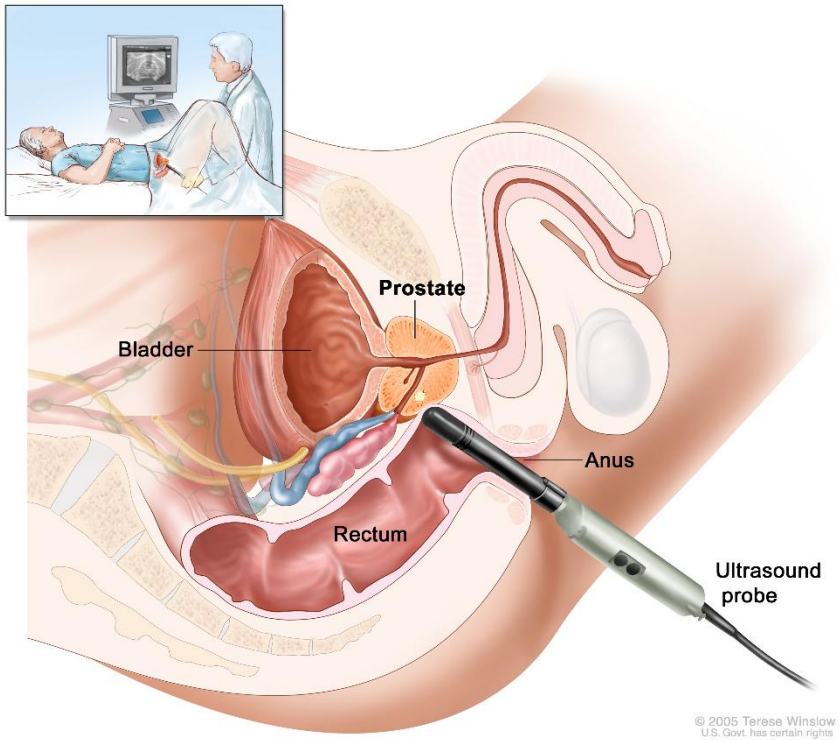
- If empirical treatment is not effective

What tests

1. Anal Sphincter Ultrasound
2. Manometry

Endoanal Ultrasonography

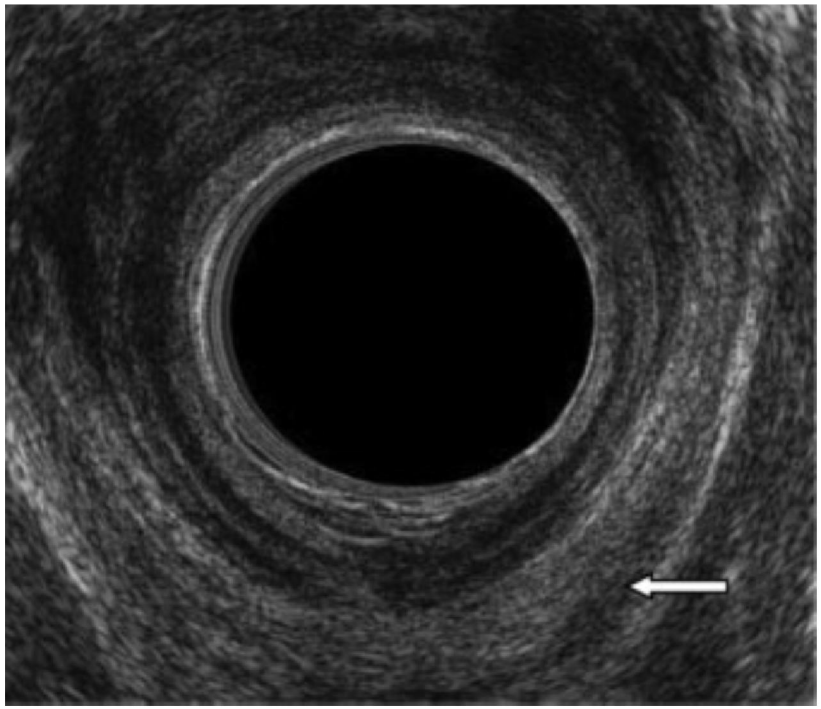
- 360 degree rotating probe
- Simple and relatively painless
- Excellent visualization of the 5 layers of the anal canal

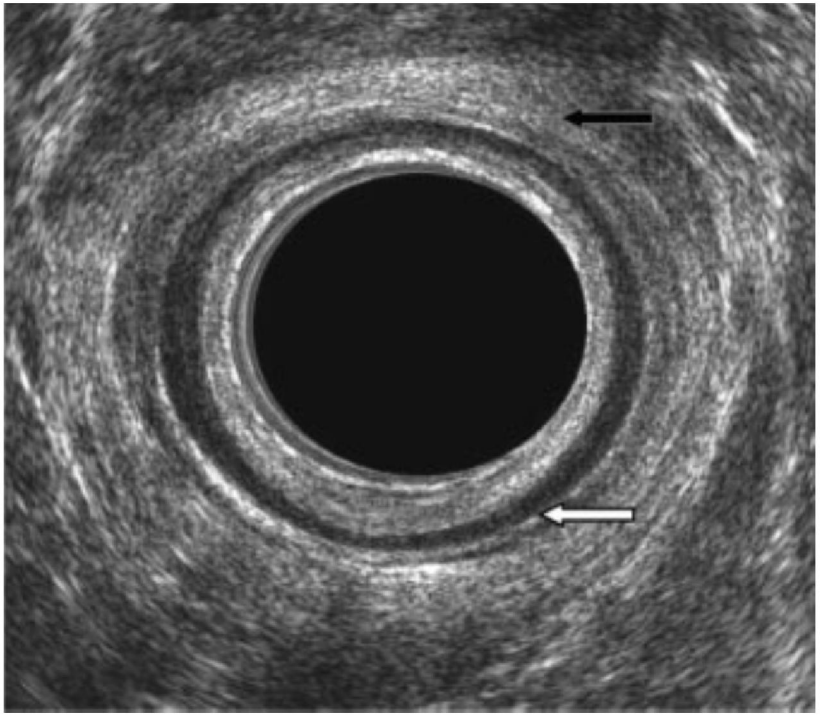


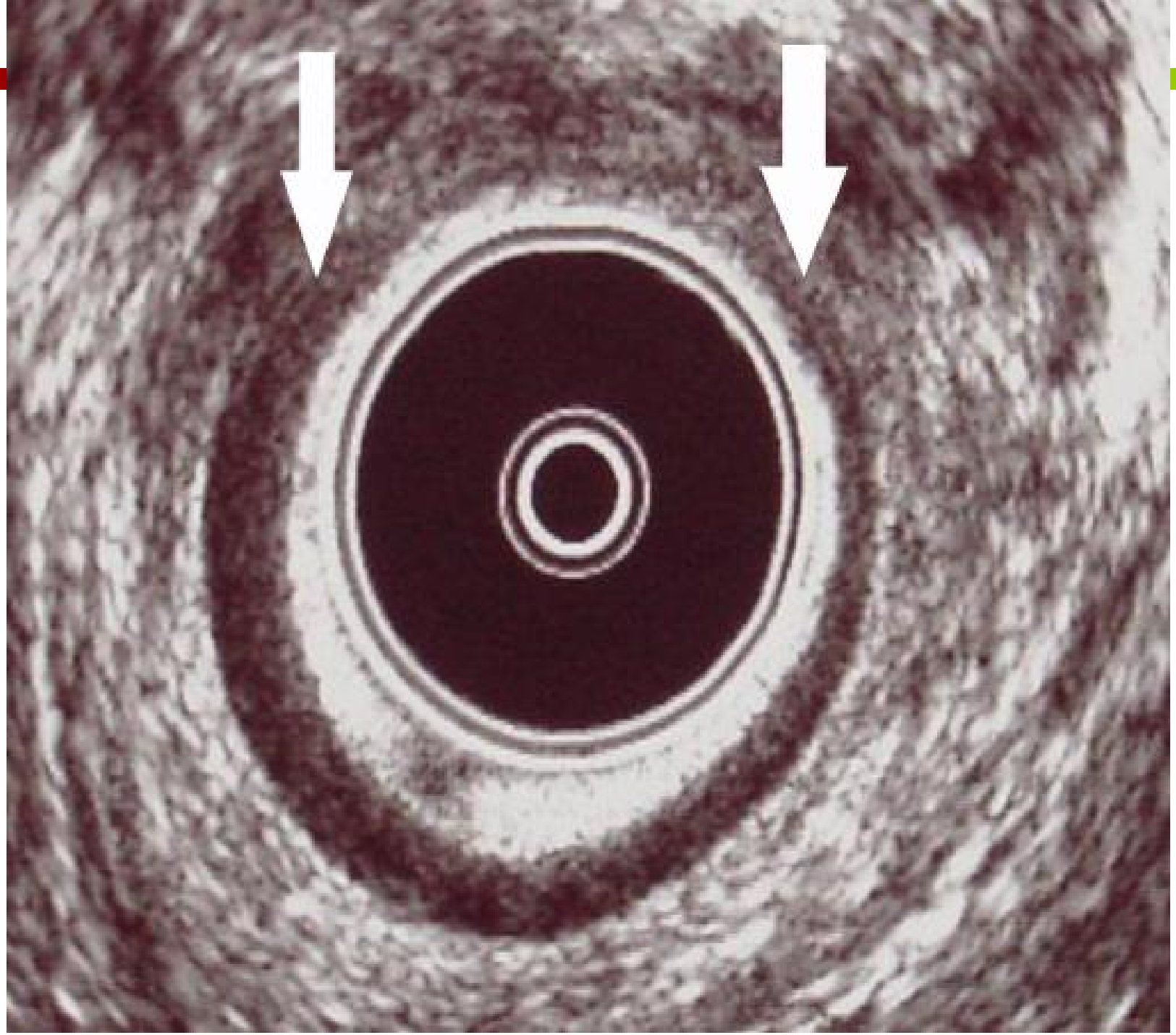
Endoanal Ultrasonography

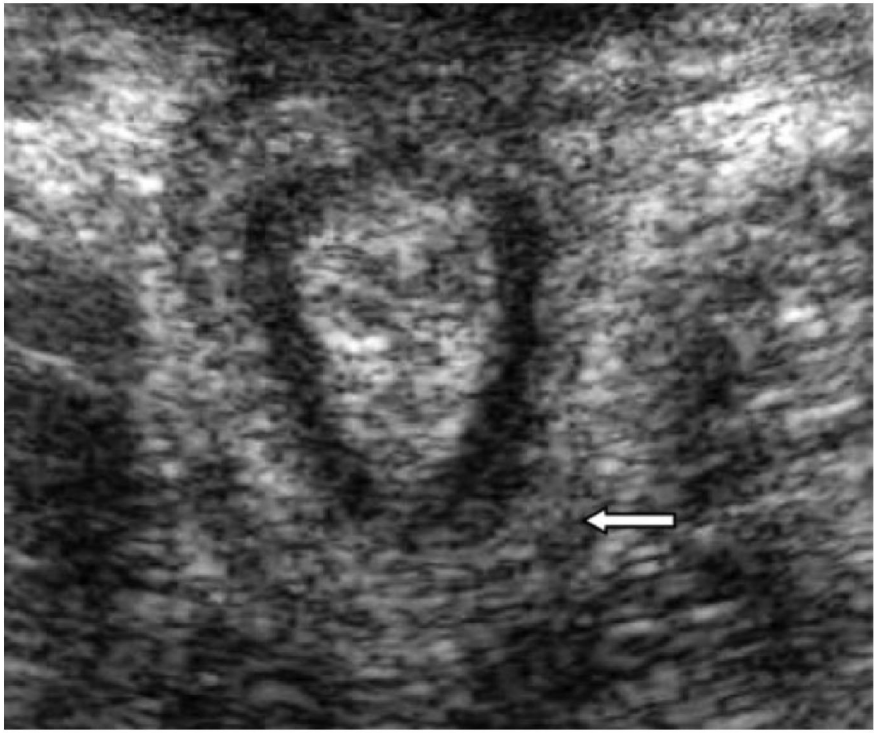
- Muscle thickness
- Scarring
- Loss of muscle tissue

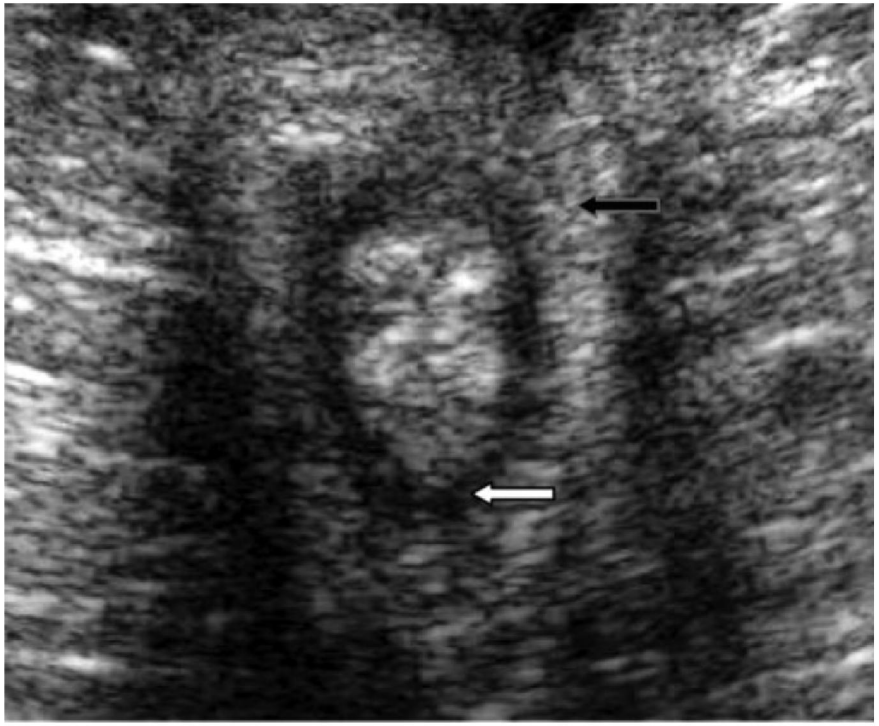
Endoanal Ultrasonography

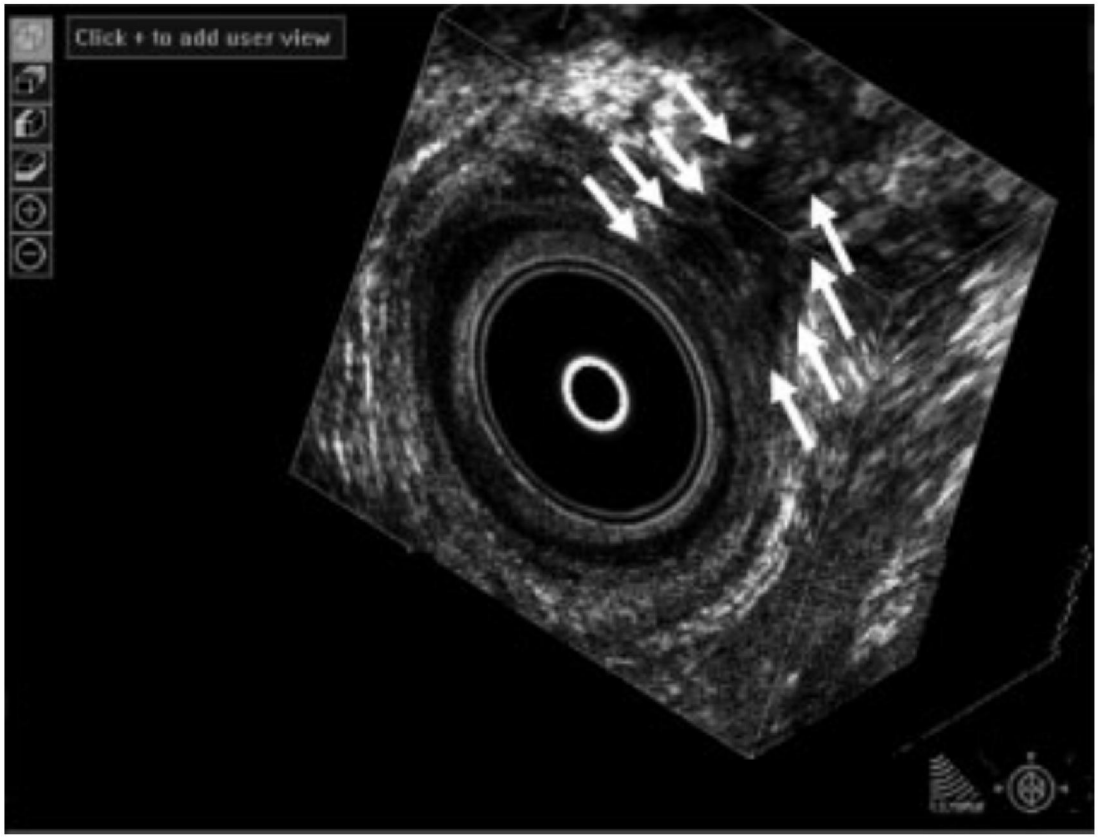








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Manometry

If ultrasound
normal
proceed
to manometry

Anal manometry

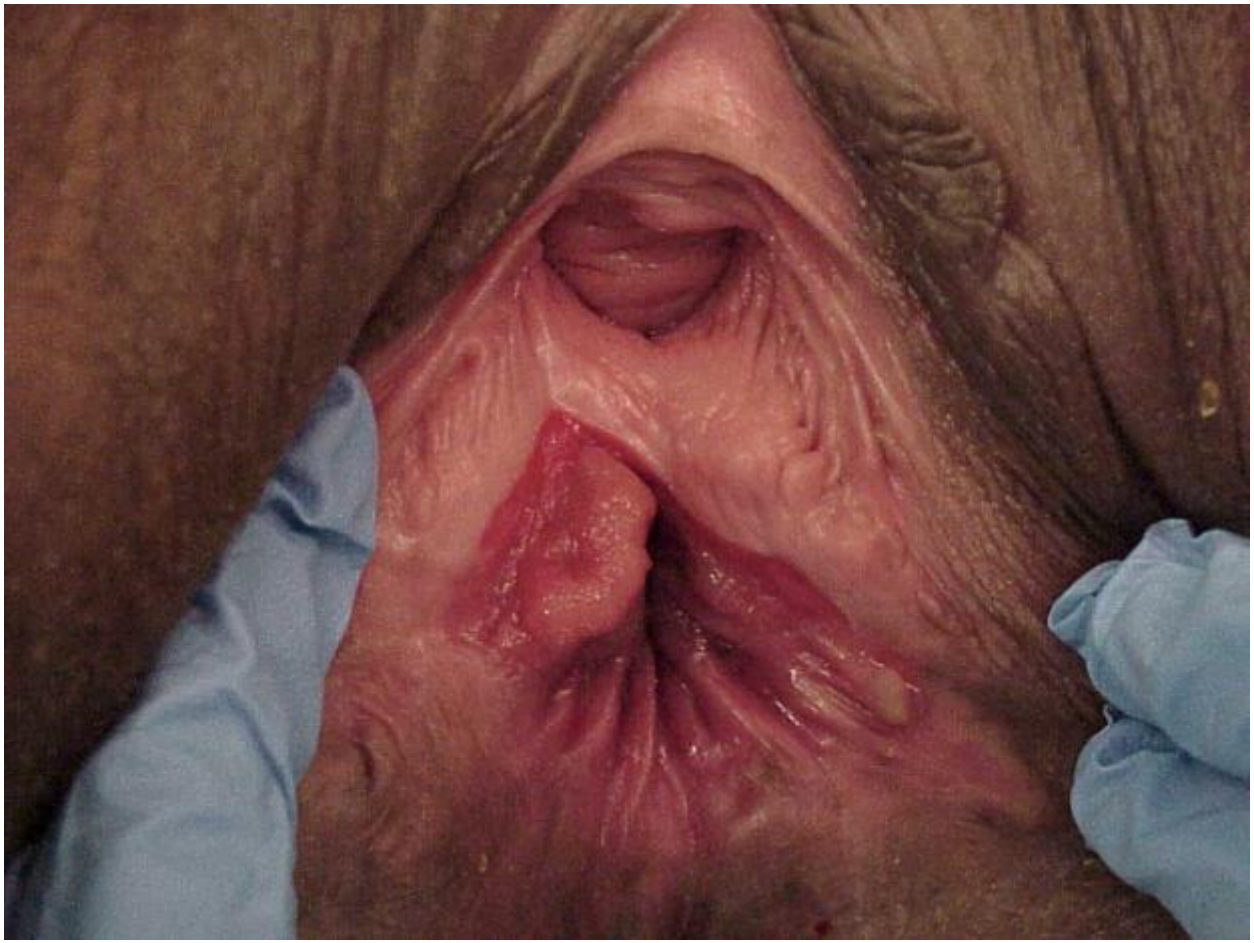
- Measures resting (internal anal sphincter) and squeeze (external anal sphincter) pressures
- Only helpful if anatomic anal sphincter defect is not visualized on U/S
- Can measure rectal sensation and compliance

Manometry or Ultrasound

- Complementary to each other
- Structural or functional
- Useful if both normal

4 Broad groups

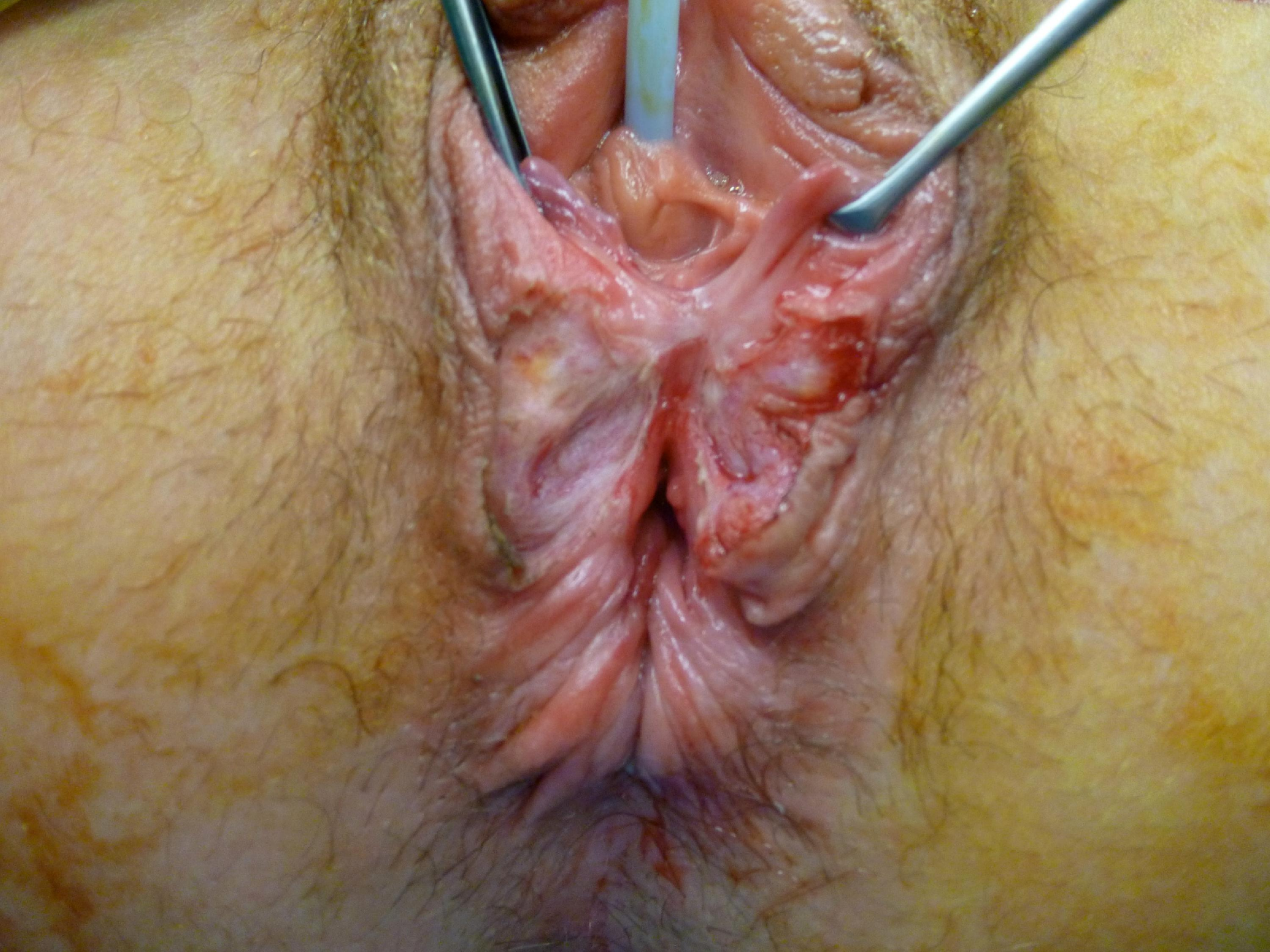
- 1. Simple structural defects of anal sphincter
- 2. Idiopathic anal incontinence
- 3. Weak but intact sphincter
  - DM, Neurological inj, spinal, rectal prolapse, muscular degeneration
- 4. Complex disruptions of sphincter

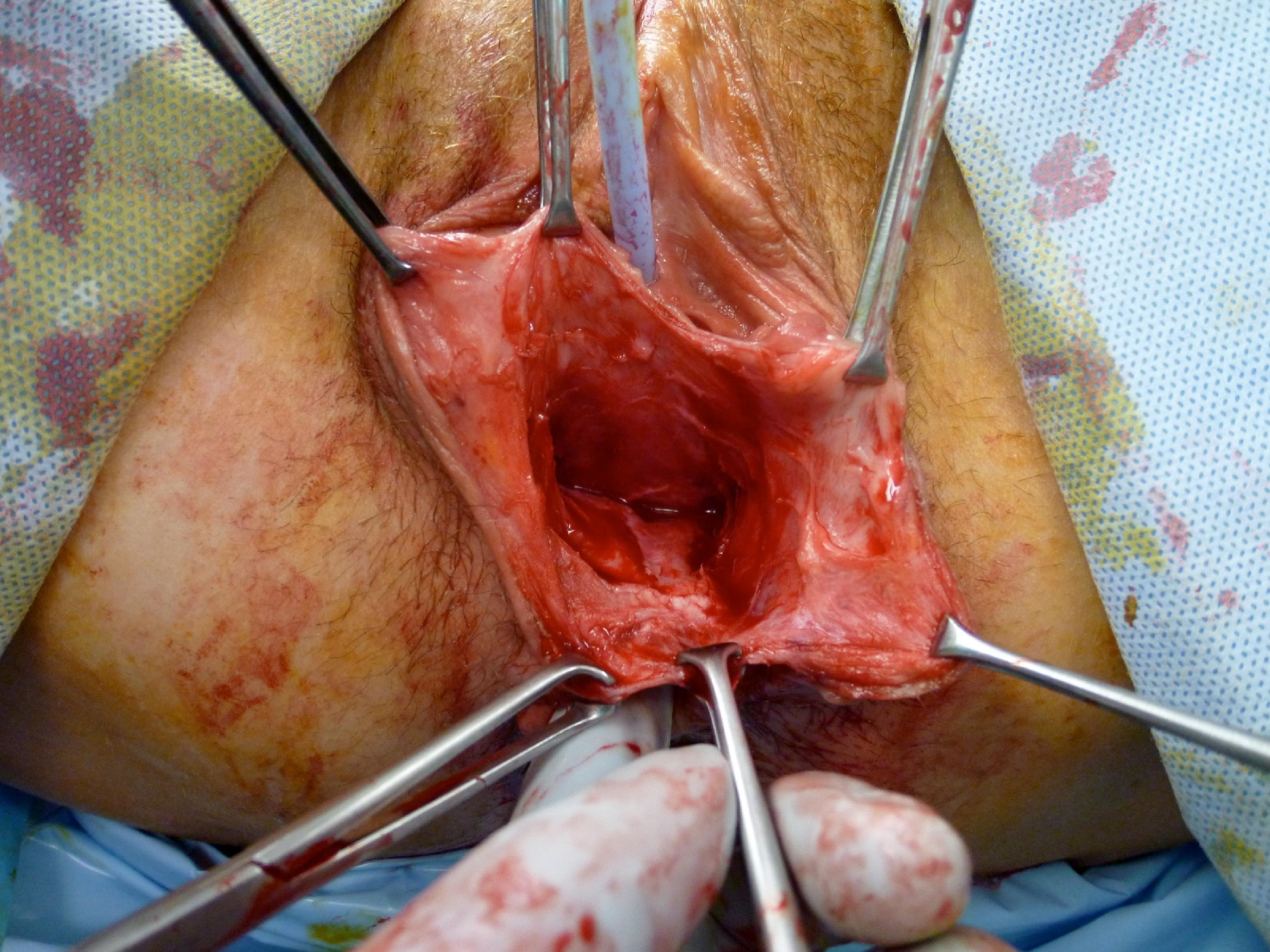


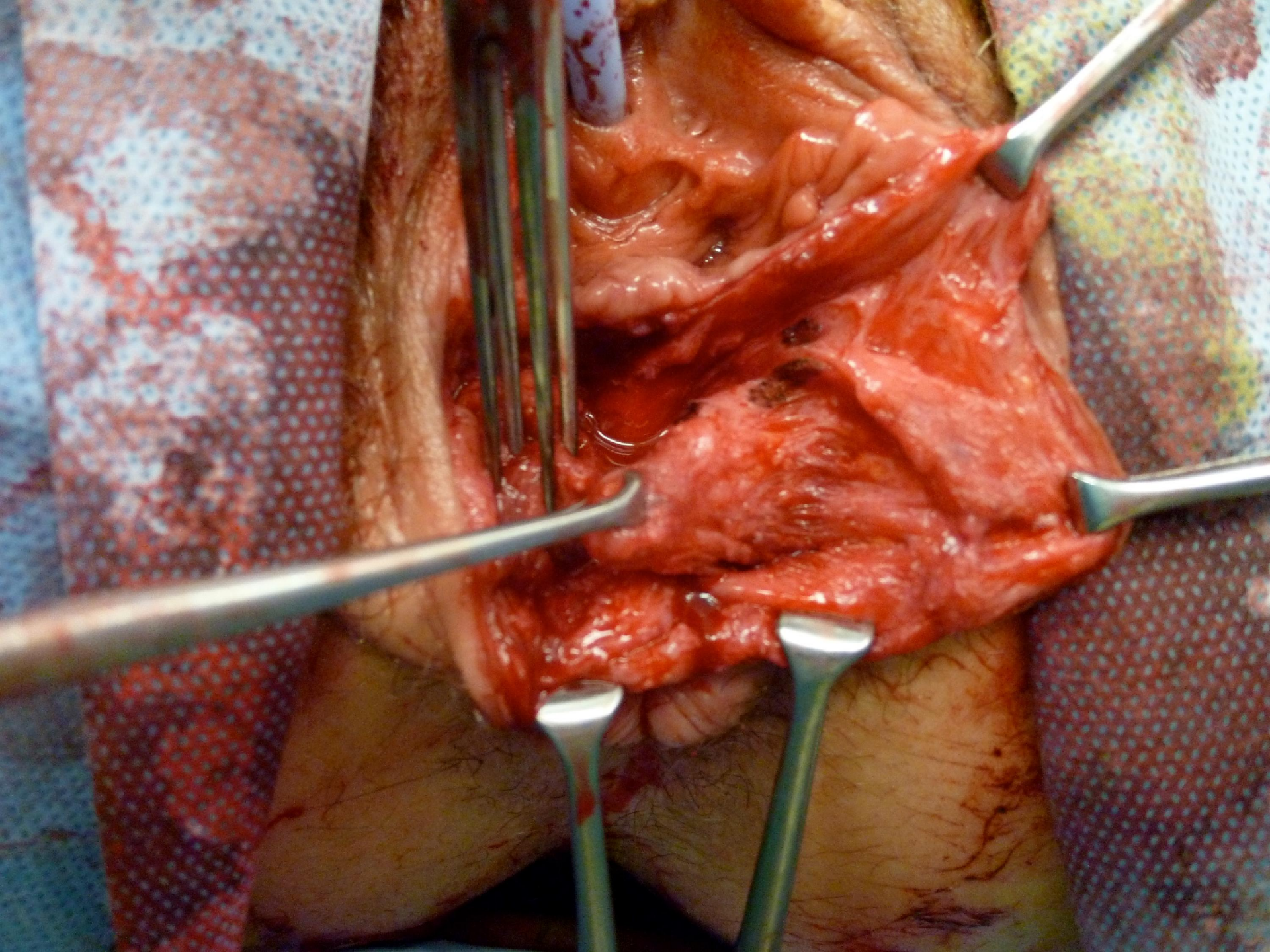
Sphincteroplasty

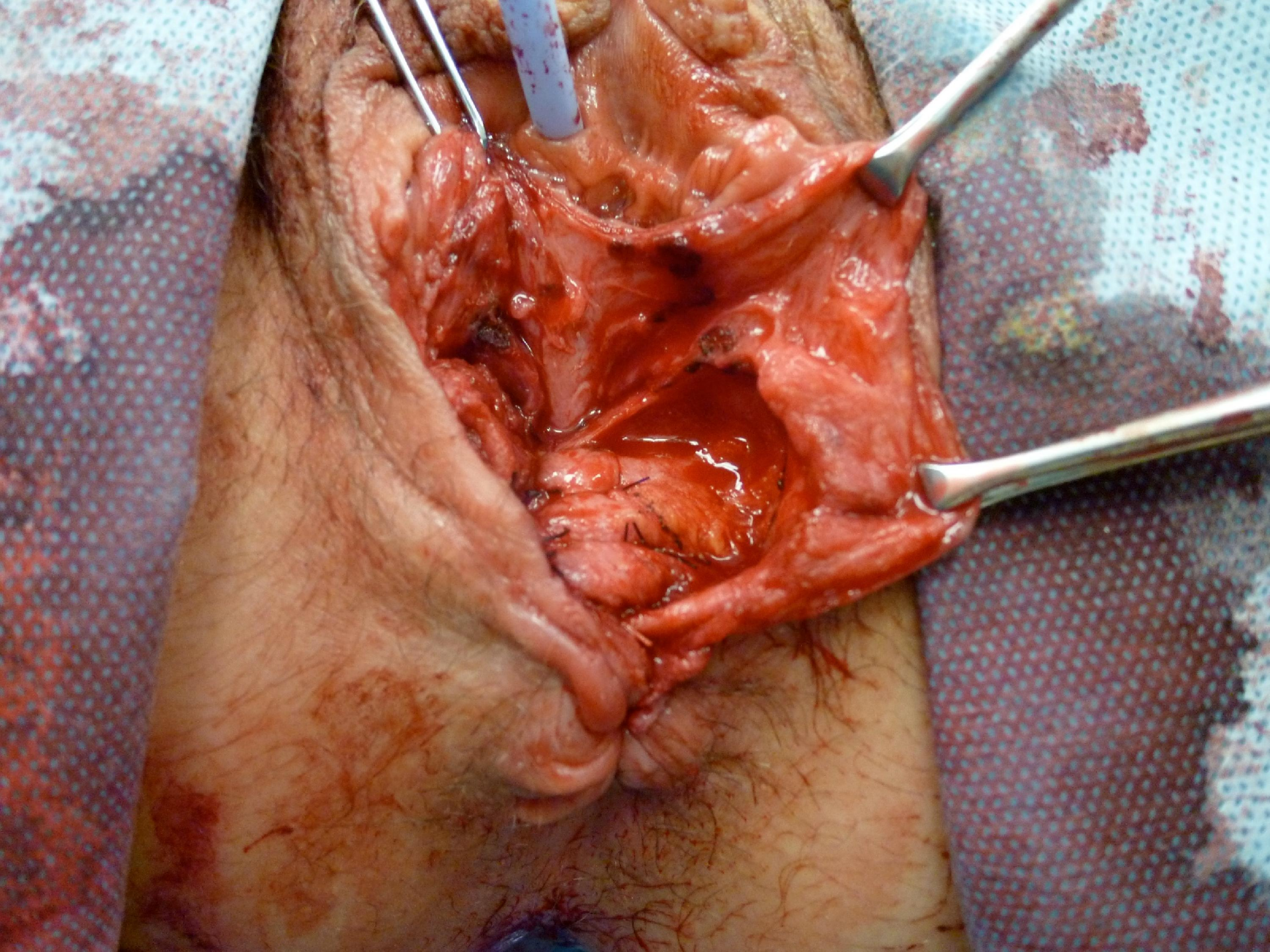
Simple Sphincter repair

- Anterior sphincteroplasty is treatment of choice in those with significant EAS defects









CURRENT STATUS

Kelli Bullard Dunn, M.D., *Section Editor*

Long-Term Outcomes of Anal Sphincter Repair for Fecal Incontinence: A Systematic Review

Sean C. Glasgow, M.D.[1,2] • Ann C. Lowry, M.D.[3]

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3 Division of Colon and Rectal Surgery, University of Minnesota, Minneapolis, Minnesota

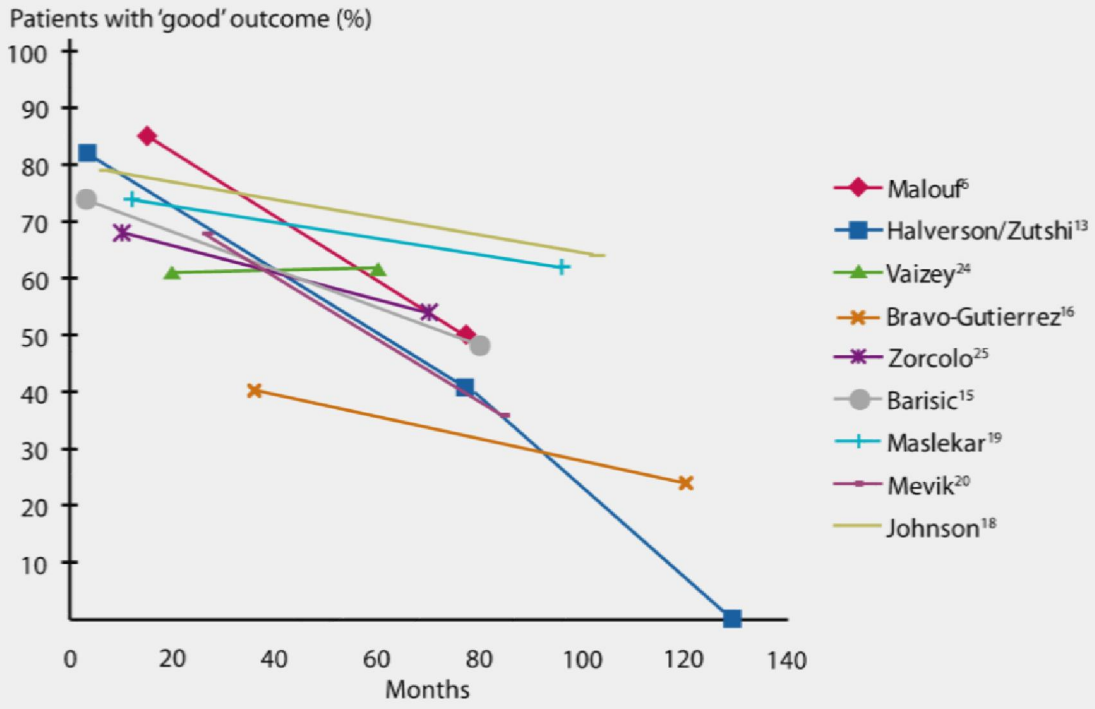


FIGURE 2. Results from published series examining anal sphincter repair outcomes over time. "Good" outcome determined using definitions provided by the authors of each article.

Other treatment options

Minimally Invasive

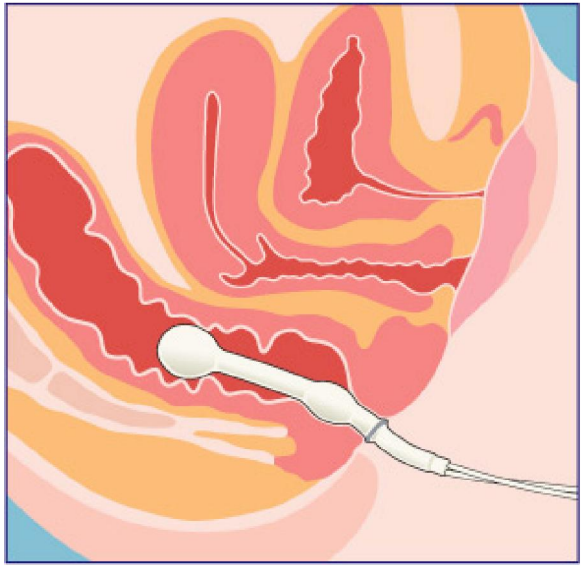
- Biofeedback
- Sacral Nerve Stimulation
- Bulking injections
- Radiofrequency
- Anal plugs
- Rectal Irrigation

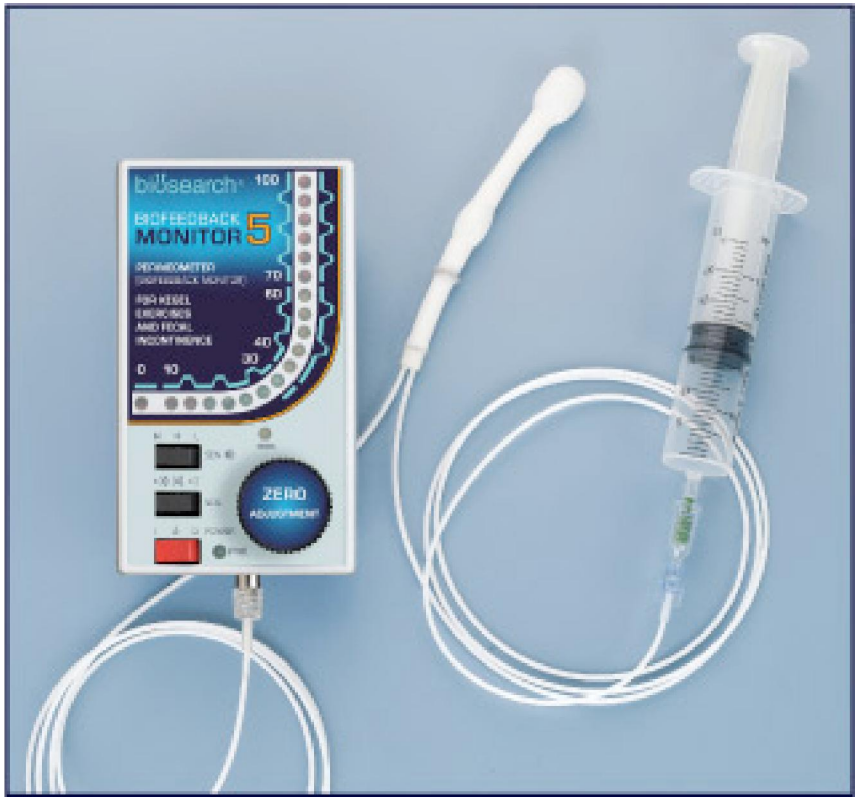
Other treatment options

Surgical

- Artificial Sphincter
- Complex Surgical Interventions
- Antegrade Continence Enema
- Colostomy

Biofeedback





Biofeedback

Cochrane

Addition to sphincter repair made no difference

Not enough evidence to guide on selection of patients

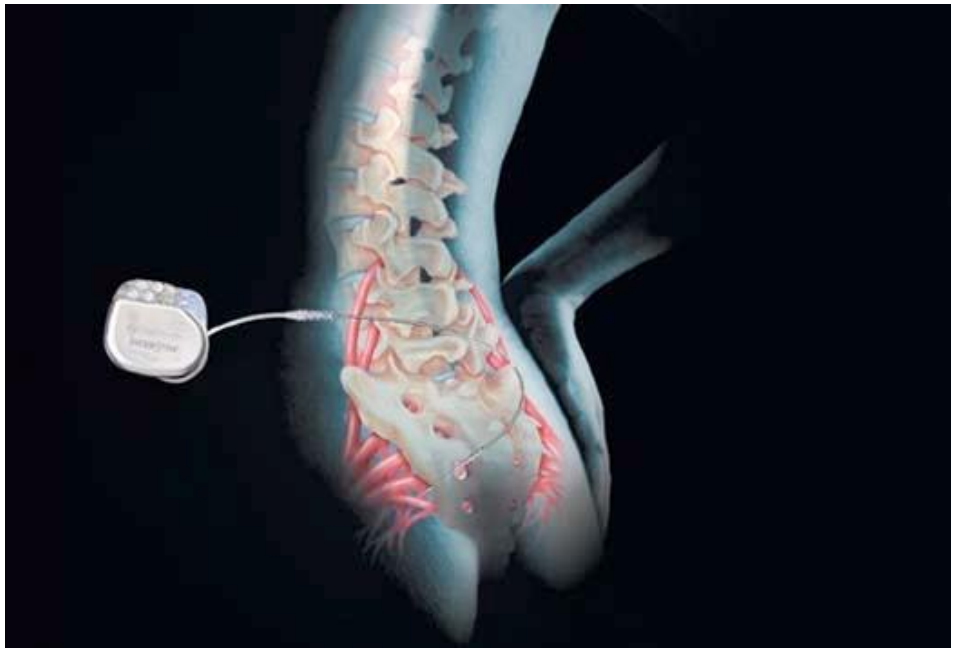
" No evidence from limited RCT available to support its use"

Sacral Nerve Stimulation

Placement of electrodes through S2, 3 and 4 sacral foramina to stimulate pelvic floor nerves

Device is marketed under the name Interstim

Licensed by FDA for Faecal incontinence



Sacral Nerve Stimulation

Indications

- Idiopathic faecal incontinence
- For those with weak but intact sphincters
- Sphincter defect

    Association of coloproctology of Great Britain and Ireland:

    if < 30% sphincter involved

More cost effective compared to colostomy or dynamic graciloplasty

Sacral Nerve Stimulation

Efficacy

- About half are 100% improved
- Another ¼ more than 50% improved

Injectable Bulking agents

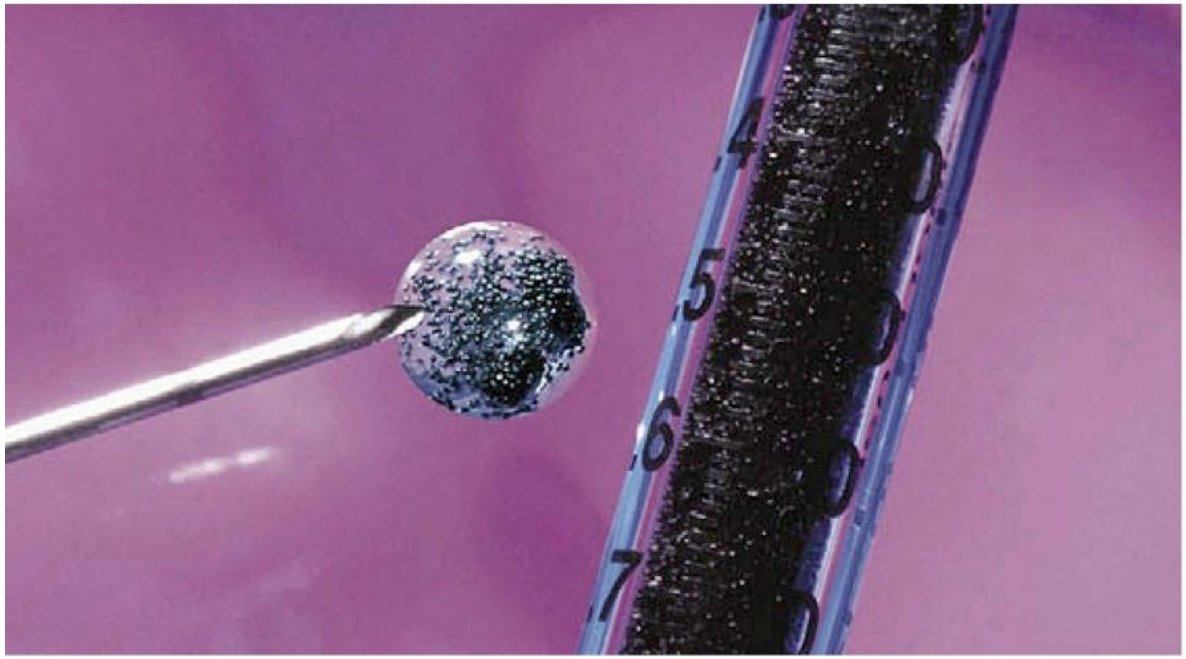


Figure 1. Durasphere for injection.

Anal Plugs

Soft foam-like material

Polyurethane plugs and polyvinyl-alcohol plug

Compressed by a water-soluble film

Expands 4x on insertion and conforms to the shape of the rectal cavity

Complex surgical interventions

- 1. Artificial Sphincter
- 2. Correction of pelvic floor abnormalities
  - Anterior levatoroplasty
  - Post-anal pelvic floor repair
- 3. Neosphincter with or without electrical stimulation
- 4. Anterior Continence Enema
- 5. Colostomy

Conclusion

- Many women can and should be treated without surgical intervention
- Remember to start with empirical medical treatment first
- Then consider U/S and Manometry
- Treatment options sphincteroplasty, SNS, Biofeedback and other more advanced options