

Evidence Discussion: Urinary Incontinence – Initial Imaging (PV 22.1)

- The workup of urinary incontinence involves a thorough history and physical examination. For incontinence due to non-neurogenic causes, advanced imaging is rarely necessary in the initial evaluation. Assessment of the urine post void residual may be completed either with bladder ultrasound or urethral catheterization.
- Baseline imaging should be obtained in the evaluation of neurogenic urinary incontinence with renal bladder ultrasound.
 1. Practice Bulletin No. 155. Urinary Incontinence in Women. Obstetrics & Gynecology. 2015;126(5). doi:10.1097/aog.0000000000001148 (Reaffirmed 2022)
 2. Chung DE, Yurteri-Kaplan LA, Asatiani T, Brennand EA, Wang A, Grimes CL. Female Pelvic Medicine & Reconstructive Surgery (FPMRS) challenges on behalf of the collaborative research in pelvic surgery consortium (CoRPS): managing complicated cases series 2: management of urinary incontinence in a neurogenic patient. International Urogynecology Journal. 2018;30(2):193-196. doi:10.1007/s00192-018-3806-0
 3. Evaluation of uncomplicated stress urinary incontinence in women before surgical treatment. Committee Opinion No. 603. The American College of Obstetricians and Gynecologists. Obstet Gynecol 2014;123:1403–7 (Reaffirmed 2020)

Evidence Discussion: Urinary Incontinence – Further Imaging (PV 22.2)

- Urinary incontinence that has failed a trial of conservative treatment may require advanced imaging with CT of the abdomen and/or pelvis with or without contrast. Advanced imaging may also be ordered for pre-operative planning if requested by the surgeon or to follow up on an abnormality noted on previous ultrasound.
 - Other clinical scenarios where advanced imaging may be indicated are incontinence occurring concomitantly with abdominal or pelvic pain, dysuria or hematuria, or in the setting of recurrent urinary tract infections. Incontinence in the setting of previous radical pelvic surgery or radiation may also require advanced imaging.
 - If there is suspicion of a fistula, mass, or ectopic ureters (and ultrasound is non-diagnostic), advanced imaging with CT may be indicated.
1. Practice Bulletin No. 155. Urinary Incontinence in Women. Obstetrics & Gynecology. 2015;126(5). doi:10.1097/aog.0000000000001148 (Reaffirmed 2022)
 2. Chung DE, Yurteri-Kaplan LA, Asatiani T, Brennand EA, Wang A, Grimes CL. Female Pelvic Medicine & Reconstructive Surgery (FPMRS) challenges on behalf of the collaborative research in pelvic surgery consortium (CoRPS): managing complicated cases series 2: management of urinary incontinence in a neurogenic patient. International Urogynecology Journal. 2018;30(2):193-196. doi:10.1007/s00192-018-3806-0
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Evidence Discussion (PV 22.3)

- The mainstay of evaluation of pelvic organ prolapse remains clinical pelvic examination. This allows for direct evaluation of prolapse and calculation prolapse quantification^{1,2}.
- Translabial, transperineal or transvaginal ultrasound have shown correlation with ^{1,2}. Ultrasound also allows for real-time evaluation, has wide availability, fast access, and lack of ionizing radiation exposure.
- MRI has been shown to have excellent soft tissue delineation. In circumstances where clinical exam and ultrasound are equivocal, MRI may provide additional information for conditions such as enterocele, sigmoidocele and intussusception².
- Complications related to mesh and graft placement in pelvic floor surgery are diverse in nature³. Work up for suspected complication is complex and may include a diverse range of diagnostic procedures such as radiologic imaging, cystoscopy, and colonoscopy. Surgical meshes have variable visibility⁴. Given the varied nature of these complications modality of imaging should be tailored to suspected complication.
- A known rare complication of sacrocolpopexy is sacral osteomyelitis. In cases of suspected osteomyelitis, MRI is the preferred imaging as it has a very high sensitivity for detection infection, especially in early stages⁵.

1. Practice Bulletin No. 214. Pelvic Organ Prolapse. Obstetrics & Gynecology. 2019 (Reaffirmed 2021);134:126-42. doi:10.1097/aog.0000000000003519
2. Barbier H, Carberry CL, Karjalainen PK, et al. International Urogynecology consultation chapter 2 committee 3: the clinical evaluation of pelvic organ prolapse including investigations into associated morbidity/pelvic floor dysfunction. *Int Urogynecol J*. 2023;34(11):2657-2688. doi:10.1007/s00192-023-05629-8
3. Committee Opinion No. 694. Management of Mesh and Graft Complications in Gynecologic Surgery. Obstetrics & Gynecology. 2017 (Reaffirmed 2021);129(4). doi:10.1097/aog.0000000000002022
4. Gavlin A, Kierans AS, Chen J, Song C, Guniganti P, Mazzariol FS. Imaging and Treatment of Complications of Abdominal and Pelvic Mesh Repair. *RadioGraphics*. 2020;40(2):432-453. doi:10.1148/rg.2020190106

Evidence Discussion (PV 22.4)

- According to the American College of Gastroenterology, the American Society of Colon and Rectal Surgeons and the American College of Obstetrics and Gynecology, complete history and physical exam is essential for the evaluation of patient with fecal incontinence^{1,2,3}.
- For patients that fail conservative measures, ano-rectal manometry and rectal balloon expulsion testing should be performed. This may help to guide additional treatment and diagnostic testing¹.
- Endoanal ultrasound (EAUS) can be considered in individuals with suspected sphincter injury^{1,2}. Ultrasound is widely available and well tolerated, however it is operator-dependent⁴. EAUS shows very good interobserver agreement in the diagnosis of sphincter defects and the measurement of the internal anal sphincter⁴.
- MRI has also emerged as an imaging modality for evaluation of fecal incontinence. While EAUS is superior for the evaluation of the internal anal sphincter, MRI shows better distinction between fat and muscle in the evaluation of the external anal sphincter⁴. MRI is limited by the fact that it is not as readily available and is unsuitable for patients with limiting conditions such as metal implants and claustrophobia⁴. MRI defecography also may play a role in the evaluation of fecal incontinence as it allows for insight into important functional disorders related to defecation⁴.

1. Wald A, Bharucha AE, Limketkai, B et al. ACG Clinical Guideline: Management of Benign Anorectal Disorders. *American Journal of Gastroenterology*. 2021;116(10). P 1987-2008
2. Bordeianou, L. G., Thorsen, A. J., Keller, D. S., Hawkins, A. T., Messick, C., Oliveira, L., Feingold, D. L., Lightner, A. L., & Paquette, I. M. (2023). The American Society of Colon and Rectal Surgeons Clinical Practice Guidelines for the Management of Fecal Incontinence. *Diseases of the colon and rectum*, 66(5), 647-661. <https://doi.org/10.1097/DCR.0000000000002776>
3. ACOG Practice Bulletin No. 210: Fecal Incontinence [published correction appears in *Obstet Gynecol*. 2019 Nov;134(5):1121]. *Obstet Gynecol*. 2019;133(4):e260-e273. doi:10.1097/AOG.0000000000003187
4. Sbeit W, Khoury T, Mari A. Diagnostic approach to faecal incontinence: What test and when to perform?. *World J Gastroenterol*. 2021;27(15):1553-1562. doi:10.3748/wjg.v27.i15.1553