



# Use of the Pelvic Floor Multicompartment Scanning in Clinical Practice



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Dr. Mueller is a urogynecologist in a busy academic and clinical center in the United States.

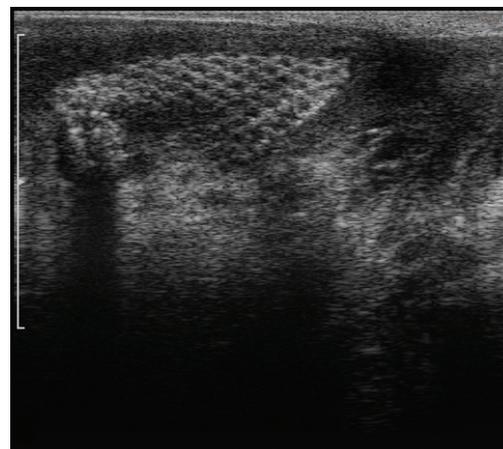
## ■ Can you describe your practice?

I work in the Midwestern city of Chicago in the United States. We have a busy academic and clinical practice with ~ 5,000 patient visits annually. Our group consists of three urogynecologists with an OB-Gyn background, a urogynecologist with a urology background (myself), a gastroenterologist, a colorectal surgeon and physical therapists. We treat women with the pelvic floor disorders of pelvic organ prolapse, urinary and fecal incontinence, obstetric injuries, genitourinary fistulas and pelvic pain.

## ■ What is the role of pelvic floor imaging in pelvic organ prolapse?

Prior to 2008, when I started multi-compartment scanning, I would say that imaging played a minor role in our clinical practice. Pelvic organ prolapse is easily found on standing physical exam much like an abdominal wall hernia. While there was always controversy about low enterocele vs. rectocele defects, we often found that when we did the correct surgical repair, both defects could be repaired, so imaging for prolapse was theoretical only.

We would often get MRIs on women if they were having complications post-operatively. For example, if we placed a surgical mesh on the vagina for prolapse or incontinence, and the women returned with symptoms of pain and vaginal erosion of the mesh, we would perform an MRI to look for the mesh and see if there was an associated abscess. Unfortunately, MRI was abysmal for imaging surgical mesh.



*The position and integrity of a mesh is clearly illustrated using high resolution endovaginal ultrasound.*

In fact, we were starting discussions with mesh manufacturers in the United States requesting that they start to weave into the mesh a material that would allow visualization of the mesh on MRI, when I attended the Treviso International Congress on Ultrasonographic Imaging of Pelvic Floor Disorders XI. At that time, I saw first hand how well ultrasound imaging can visualize the surgical meshes that are being used to treat prolapse and incontinence.

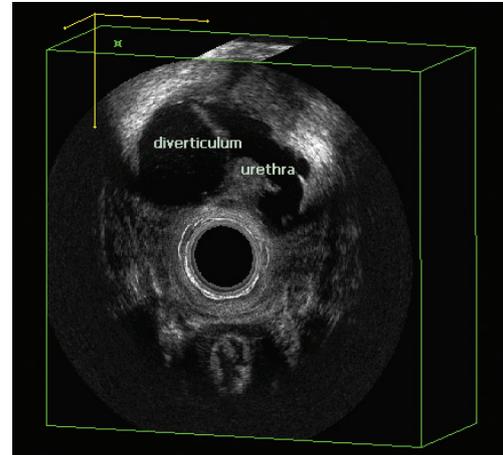
At this time, I am imaging women with any mesh complications post-operatively with ultrasound. I have seen women referred to our practice with mesh easily visualized in the bladder and urethra. In addition, we have found mesh that has detached from the vagina, and this represents a technical failure of the surgery as opposed to a new prolapse. We currently have a study that is enrolling patients and comparing transvaginal ultrasound in women pre- and post-operatively in order to better understand the changes in anatomy to associate that with surgical success.

### ■ How else is pelvic floor imaging being used in your clinical practice?

Ultrasound imaging has become our imaging modality of choice in women with anterior vaginal wall masses. We obtain a 3D image in lithotomy position using the 2050 transducer placed in the vagina. Urethral diverticula and anterior vaginal wall cysts can be easily seen and allow for excellent presurgical planning.

Also, there is a real-time nature to the interaction with the patient. With MRI, we would see a patient initially; she would have a second visit for the MRI and then return to see me again so we could discuss the MRI results and surgical planning. In the meantime, the diverticulum could become infected and worsen her symptoms. With ultrasound

imaging, we can confirm the diagnosis at the initial visit, choose the surgical date and discuss treatment all in the same day.



*Using high-resolution 3D endovaginal ultrasound, a diverticulum can be seen as hypoechoic areas surrounding the urethra.*

I am also being asked by my partners to image women with fecal incontinence to see if there is a defect of the external anal sphincter. We will often choose non-surgical treatments first, but as clinicians we are interested in the anatomic features of the anal canal in that particular patient.

## ■ **How do you see ultrasound being used in the future?**

I do believe that pelvic floor imaging has an important role in taking care of women with pelvic floor disorders and will become part of the baseline assessment of women who present with pelvic floor disorders.

I can see a time when we are comparing ultrasounds obtained at the initial visit to those obtained years later when a woman's prolapse becomes more pronounced and symptomatic. Making that comparison may mean that for the first time we will be able to start understanding the natural history of prolapse.

For example, while we understand that advanced apical prolapse is associated with anterior vaginal wall prolapse, which came first?

We then could start understanding when we can intervene to prevent prolapse – as compared to our current strategies, which are to treat only when the condition becomes symptomatic, which often involves more invasive procedures.

I think it is a very exciting time for this technology.



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