

SEEING THE INVISIBLE:

The power of imaging in diagnosing endometriosis before surgery.



Seeing the Invisible: The Power of Imaging in Diagnosing Endometriosis Before Surgery

Endometriosis is a complex and often misunderstood disease affecting an estimated 1 in 10 women of reproductive age. It occurs when tissue similar to the lining of the uterus grows outside the uterus, often causing pain, inflammation, and infertility. While its impact can be devastating, the diagnosis of endometriosis is frequently delayed—on average by 7 to 10 years in first world countries—largely due to its elusive nature and the reliance on surgery for definitive confirmation.

As a radiologist who specializes in endometriosis, I've witnessed the transformative role that advanced imaging techniques—specifically **magnetic resonance imaging (MRI)** and **transvaginal ultrasound (TVUS)**—can play in the diagnostic journey. These tools don't just show us what's happening inside the body; they give us a roadmap to better, more effective treatment. In this article, I'll explain why **pre-surgical mapping** with imaging is critical for both patients and surgeons, and how it can lead to more successful outcomes.

Why Is Diagnosing Endometriosis So Challenging?

One of the biggest challenges in diagnosing endometriosis is that symptoms can vary widely and overlap with other conditions like irritable bowel syndrome or pelvic inflammatory disease. Some women experience severe menstrual pain, fatigue, pain during intercourse, or bowel and urinary symptoms—while others may have no symptoms at all.

In the past, the standard method for diagnosing endometriosis was laparoscopic surgery, which involves making small incisions to insert a camera and visually inspect for lesions. While effective in some cases, surgery is invasive, carries inherent risks, and may still miss deeply infiltrating or hidden disease. This is where advanced imaging plays a crucial role.

What Is Endometriosis Mapping?

Endometriosis mapping is a specialized imaging process performed before surgery to locate and assess the extent of disease. It's like creating a GPS for the surgeon—a way to visualize where endometriosis is likely hiding, how deep it has invaded, and which organs are affected.

By identifying the precise location and depth of lesions before entering the operating room, endometriosis mapping significantly improves surgical outcomes. It allows surgeons to anticipate complexities, involve multidisciplinary specialists when needed, and tailor the surgical approach to each patient's anatomy and disease severity. For patients, this means fewer surprises during surgery, a reduced risk of incomplete excision, and a higher likelihood of symptom relief. In essence, mapping transforms what was once a blind procedure into a targeted, informed intervention—empowering both doctors and patients in the fight against endometriosis.



Why Mapping Before Surgery Matters

Surgery for endometriosis is not a one-size-fits-all procedure. In fact, the complexity of the surgery can vary greatly depending on where the lesions are located and how deeply they invade surrounding tissues. Preoperative imaging helps in several critical ways:

- **Precision:** Surgeons can plan the exact approach needed—sometimes involving multidisciplinary teams like colorectal or urologic specialists.
- **Safety:** Knowing where nerves, vessels, or bowel are involved reduces the risk of complications.
- **Effectiveness:** Comprehensive removal of lesions minimizes the chances of needing repeat surgeries.
- **Empowerment:** Patients go into surgery better informed, with more realistic expectations about outcomes and recovery.
- **Avoiding Unnecessary Surgeries:** In some cases, imaging may reveal that surgical intervention is not necessary or that a different medical approach might be more effective.

Limitations and the Importance of Expertise

It's important to recognize that not all imaging centers are equipped to perform endometriosis mapping. Both MRI and ultrasound require **specialized protocols** and radiologists with **specific training** in endometriosis imaging. Without this expertise, lesions can be missed, misinterpreted, or underestimated.

Patients seeking imaging for suspected endometriosis should ask if the center follows an established endometriosis protocol and whether the radiologist has experience with deep infiltrating disease.

A Paradigm Shift in Care

We are entering a new era where **imaging is no longer just a support tool**, but an essential first step in the diagnosis and treatment of endometriosis. Just as we wouldn't perform heart surgery without first doing an echocardiogram or angiogram, we shouldn't approach complex pelvic surgery without first "seeing" what's inside.

By integrating advanced imaging into routine care for patients with pelvic pain or suspected endometriosis, we can offer earlier diagnoses, better-targeted treatments, and ultimately, improved quality of life.

For too long, endometriosis has been invisible—both in medicine and in society. Through the lens of radiology, we are finally learning to **see what's been hidden** and, more importantly, to act on it.

Dr. Carlos Trippia is a radiologist with specialized expertise in pelvic imaging and endometriosis. He's passionate about advancing diagnostic strategies and improving outcomes for women with complex pelvic disease.

