

Rethinking Imaging in Stress Urinary Incontinence: Can Transperineal Ultrasound Replace MRI for Urethral Support Assessment?

Can high-resolution TPUS visualize pubourethral ligament integrity as an alternative to MRI?

TPUS may provide a simpler, accessible approach to evaluating PUL integrity.

Maiti S¹, Palma P², Rodriguez E³

¹ Universidad de Monterrey, Mexico

² Universidade de Campinas, Brazil

³ Hospital Hospitaria, Monterrey, Mexico

MAIN FINDING

High-resolution TPUS directly visualized pubourethral ligament integrity and disruption, with findings concordant with MRI in this pilot cohort.

WHY THIS MATTERS

Pubourethral ligament anatomy has traditionally been assessed with MRI. High-resolution TPUS may provide a more accessible, real-time approach to directly visualize ligament integrity.

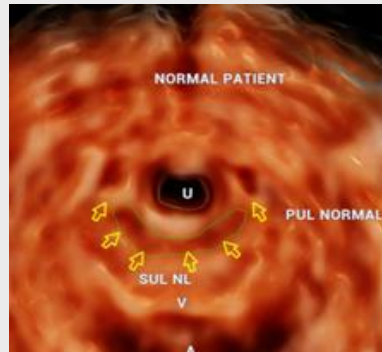
AIM

To evaluate whether high-resolution TPUS can visualize pubourethral ligament integrity and identify unilateral or bilateral disruption compared with MRI

PILOT DESIGN

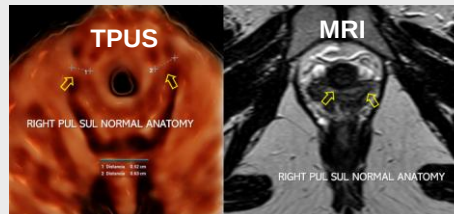
10 women
5 healthy nulliparous controls
5 urodynamic SUI
TPUS → blinded MRI comparison

HOW TPUS MAPS URETHRAL SUPPORT

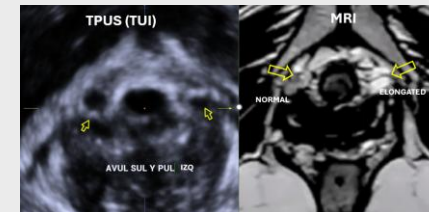


Key landmarks

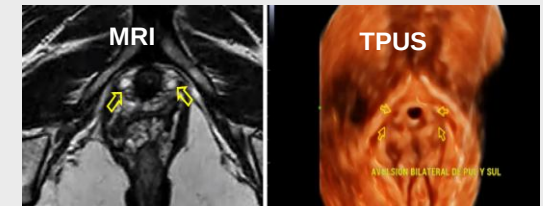
- Urethra: central
- PUL: bilateral, ~3 & 9 o'clock
- Suburethral support: hyperechoic "hammock"



Healthy patient
Normal support anatomy



Left PUL disruption / avulsion
visualized by TPUS and MRI



Bilateral PUL disruption / avulsion
visualized by TPUS and MRI

TAKE-HOME MESSAGE

High-resolution TPUS enables direct, real-time visualization of pubourethral ligament integrity and disruption, with findings concordant with MRI in this pilot cohort.

RESULTS

5/5

healthy controls
intact on TPUS + MRI

5/5

SUI patients
PUL discontinuity concordant on TPUS
and MRI
3 bilateral • 2 unilateral

LIMITATIONS

Pilot study (n=10) • single-center • operator-dependent • larger blinded studies needed