

## **ABSTRACT**

**Background:** Midurethral sling (MUS) surgical procedures, in which a polypropylene synthetic mesh graft is transvaginally placed to support the urethra and manage stress urinary incontinence (SUI), is commonly performed [1, 2]. Within 10 years of sling placement about 1 in 20 women undergo subsequent surgery to revise their mesh, in which the mesh is cut or partially excised [3]. Translabial ultrasound (TLUS) has been described as a sensitive technique for viewing MUS [4]; however, few studies have evaluated the ability of TLUS to view revised MUS.

Understanding the anatomy of the MUS, particularly following revision, is critical to urologists and urogynecologists striving to optimize management of patients presenting with lower urinary tract symptoms (LUTS) and history of MUS. It was hypothesized that TLUS would serve as a highly sensitive as well as specific tool for identifying a gap in the hyperechoic mesh and, thus, confirming history of sling revision.

**Objective:** To assess the clinical utility and reliability of TLUS as a diagnostic tool in its detection of MUS discontinuity.

**Methods:** We conducted a retrospective analysis of women who underwent TLUS at a tertiary care center between September 2017 and May 2020 for indication of LUTS and reported history of MUS placement. Patient demographic information, clinical data, operative records and TLUS reports were reviewed. Patients with MUS identified on TLUS confirmed by a radiologist familiar with TLUS assessment of MUS were included. Patients were excluded from analysis if an MUS of transobturator, retropubic or single-incision configuration was not visible on TLUS

or if there were records of complete sling excision. TLUS performance was evaluated by comparing findings to operative or clinical records.

**Results:** 81 women were identified with a mean age of  $59.7 \pm 13.76$  (SD) years. The detection of MUS revision, which was defined as a discontinuity in sling material, had a sensitivity of 84.6% and specificity of 97.1%.

**Conclusion:** TLUS is an inexpensive, non-irradiating and noninvasive modality that is effective at visualizing midurethral slings. It is a reliable identifier of prior MUS revision, in which it detects a midline discontinuity of the hyperechoic mesh with an average 10mm gap.

**Clinical Impact:** TLUS may be utilized as part of a urologist's and urogynecologist's optimal management of a patient with history of MUS, particularly with prior revision.