

CLINICAL AND ULTRASONOGRAPHIC STUDY OF PATIENTS PRESENTING WITH TRANSVAGINAL MESH COMPLICATIONS

Hypothesis / aims of study

The place of mesh grew rapidly in POP and stress incontinence surgery; however, many complications occurred due to inappropriate techniques, and many complications were recognized too late and were poorly managed. Ultrasound imaging appears to be helpful for assessing transvaginal mesh and midurethral sling because they both consist of similar material and the theoretical concept of tension-free stabilization is the same for both approaches.

Regarding mesh complications detection, in the absence of operative reports, the evaluating physician has to resort in the absence of operative reports, to assessing by palpation in a standard fashion. No validation has been performed for the clinical examination. The objectives of this study were to i) investigate clinical and ultrasonographic findings of women who had three-dimensional endovaginal ultrasound for the management of vaginal mesh complications after prolapse repair and midurethral sling ii) determine sensitivity and specificity of physical examination compared to ultrasonographic findings for mesh complications, and iii) study the relationship between ultrasonographic position of midurethral slings and voiding dysfunction.

Study design, materials and methods

This was a retrospective cohort study of patients that had three-dimensional endovaginal ultrasound (EVUS) and/or translabial ultrasound due to mesh complications from July 2010 to December 2012 at a tertiary care center.

The clinical charts were reviewed to obtain the presenting symptoms, medical and surgical history, examination findings, surgical intervention, and outcome results.

Two examiners independently reviewed the stored 2D/3D volumes of the selected patients. The senior author reviewed the findings in which there were disagreements between the two readers. The following were assessed.

- Mesh/sling number and location
- Distance between the lower margin of the anterior mesh and the urethral meatus
- Distance between the lower margin of the posterior mesh and the perineal body and
- Distance of sling from the vesicourethral junction

Results

A total of 87 patients were identified. All of them presented to our center because of their or their physicians' concern regarding mesh complications. Eight were excluded from the study, then, the final analyses included 79 patients. Forty-one (51.9%) patients had vaginal and/or pelvic pain, which was aggravated by movement, and 51/62 (82.2%) of sexually active women experienced dyspareunia.

Mesh or sling was not demonstrated with the 2D/3D ultrasonography in six patients who believed they have had mesh/sling implantation. The pelvic examination was positive for mesh in 52 out of 73 (72.2%) patients with vaginal mesh. It was negative in 3 out of 6 (50%) patients without vaginal mesh. As a result, the positive predictive value was 94.5% (95% CI: 84.9% to 98.8%), negative predictive value was 12.5% (95% CI: 2.8% to 32.4%), sensitivity was 72.2% (95% CI: 59.4% to 81.2%), and specificity was 50.0% (95% CI: 12.4% to 87.6%). The accuracy of vaginal palpation for detection mesh in patients with mesh-related complaint was 69.6%.

Four from 48 (8.3%) patients had two midurethral slings in place. 9/16 (56.2%) of patients with sling location under the proximal urethra (< 40 percentile) reported that they were moderately or greatly bothered by urine leakage related to physical activity. While 12/32 (37.5%) of patients with sling location under the midurethra (40-70 percentile) or the distal urethra (>70 percentile) reported the equally bothersome symptom.

Interpretation of results

Generally, diagnosis of mesh exposure is simple since it may be clinically obvious. However, uncertainty of surgical history, short and narrow vaginal caliber, and vaginal scar may affect the magnitude of the confidence the clinicians feels about their diagnosis. The present study showed that vaginal examinations have a high positive predictive value and an acceptable sensitivity for detection of vaginal mesh. However, as a screening modality for evaluation of mesh complications, a negative result from vaginal examination was not an acceptable modality for reassuring that a patient did not have the mesh/sling (NPV = 12.5%) and at this initial screen correctly identifies 50.0% of those who did not have the mesh/sling. Based on these findings, we support the use of ultrasound evaluation in referral setting in which the patient's surgical history of meshes is uncertain and decision-making on whether surgical intervention is necessary.

Concluding message

The most common complaints of vaginal mesh and/or midurethral sling complications were pain and dyspareunia. Short and narrow vaginal caliber, and vaginal scar after vaginal surgery may affect accuracy of vaginal examination. Three-dimensional

endovaginal ultrasound appeared to be helpful for assessing mesh presence, location and extent including planning for suitable and comprehensive surgical intervention.

Disclosures

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