

Three-Dimensional Transvaginal Ultrasonographic Findings in a Failed Case of Cystocele Repair Using Tension-free Mesh Augmented Anterior Colporrhaphy

Jenn-Ming Yang, M.D.^{1,2}, Shwu-Huey Yang, Ph.D.³, Wen-Chen Huang, M.D.^{2,4,5}

Division of Urogynecology, Department of Obstetrics and Gynecology¹, Mackay Memorial Hospital, Taipei, Taiwan; School of Medicine², School of Health and Nutrition³, Taipei Medical University, Taipei, Taiwan; Department of Obstetrics and Gynecology⁴, Cathay General Hospital, Taipei, Taiwan; School of Medicine⁵, Fu Jen Catholic University, Taipei, Taiwan; E-mail: huangwc0413@hotmail.com

BRIEF HISTORY

A 56-year-old woman had undergone mesh (Gynecare Gynemesh PS, Ethicon Inc., Somerville, NJ, USA) augmented anterior and posterior colporrhaphy together with transobturator suburethral tape procedure (Gynecare TVT Obturator System, Ethicon, Somerville, NJ, USA) for stage III cystoectocele and concomitant urodynamic stress incontinence. Preoperatively, pelvic examination revealed that points Aa and Ba on the POP-Q system were 2 cm and 1.5 cm, respectively. There was no occurrence of urinary urgency, dysuria, stress incontinence or voiding difficulty. At the postoperative 6 month follow-up, functional and morphological assessments, including interview-directed symptom questionnaires regarding female lower urinary tract symptoms and surgical satisfaction, pelvic examination, ultrasound cystourethrography and urodynamic study, were performed.

CLINICAL EXAMINATION

The 6 month postoperative pelvic examination demonstrated that points Aa and Ba on the POP-Q system were 0 cm and -2 cm, respectively. Free uroflowmetry revealed voided volume was 294 mL, maximum flow rate was 18 mL/sec and residual urine amount was 8 mL. The standing stress test was negative.

ULTRASONOGRAPHY

Three-dimensional (3D) mid-sagittal view ultrasonography demonstrated two flat-shaped hyperechoic meshes, located in the anterior and posterior vaginal walls, and one hyperechoic suburethral tape located in the mid-urethra (Fig. 1A). The anterior vaginal mesh was implanted at the region of the proximal urethra and bladder base, with a

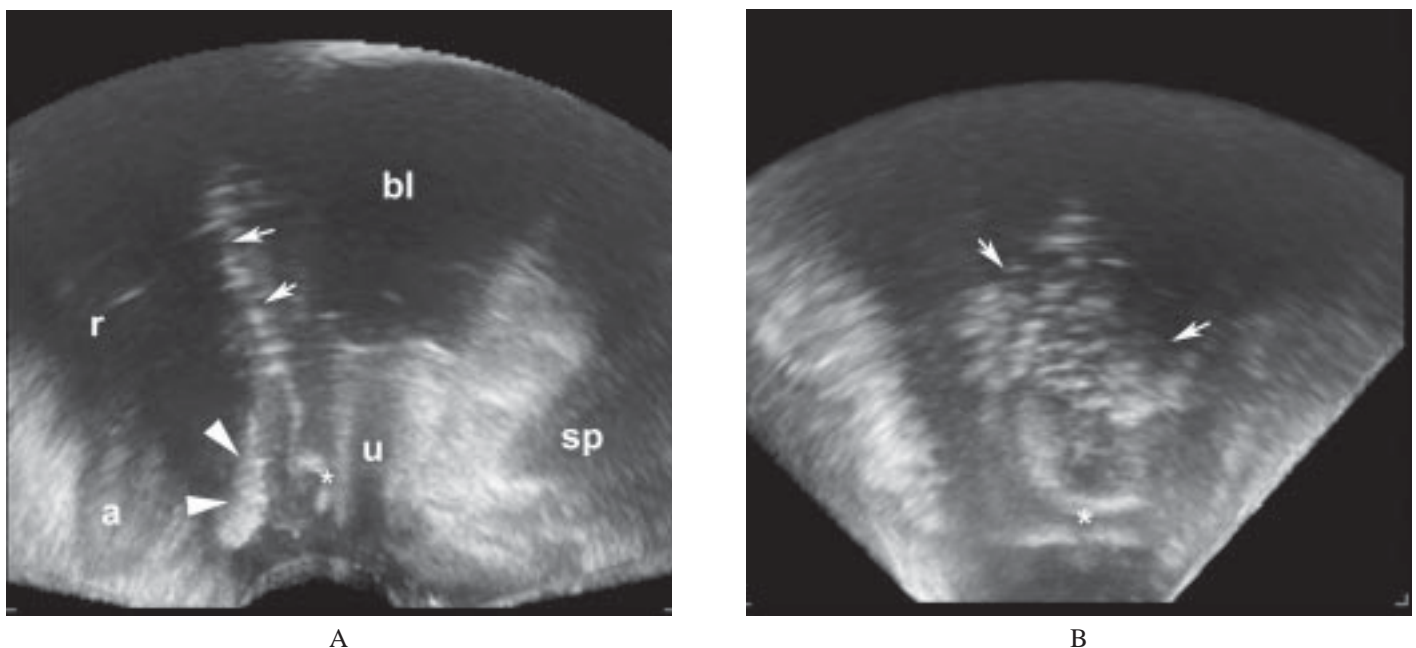


Fig. 1. (A) Three-dimensional mid-sagittal view at rest showing two hyperechoic meshes, one is implanted in the anterior vaginal wall (arrows) and the other is in the posterior vaginal wall (arrowheads), and one suburethral tape (*) located in the anterior vaginal wall at the level of the mid-urethra. (B) Three-dimensional coronal view showing the configuration of the mesh (arrows) and suburethral tape (*) are honeycomb-like and railway track-like in appearance. (bl: bladder; sp: pubic symphysis; u: urethra; a: anal canal; r: rectum)

total length of 3.14 cm. The posterior vaginal mesh was implanted in front of the anal canal near the perineal body, with an upward extension of 1.65 cm. The 3D coronal view showed the bladder base was overlaying the anterior vaginal mesh (Fig. 1B). On Valsalva maneuver, ultrasound revealed a herniation of the bladder base protruding downward along the plane of the anterior vaginal mesh with the lowest level at the introitus (Fig. 2). The 3D axial view demonstrated that the anterior vaginal mesh was stretched by the protruding cystocele (Fig. 3). There was an increase in the distance between the caudal (ventral) end of the anterior vaginal mesh and the lower border of the symphysis pubis, at rest and during stress (3.16 cm and 3.65 cm, respectively).

COMMENT

Tension-free polypropylene mesh augmented anterior colporrhaphy has been reported for cystocele repair. In a study of 63 women with cystocele repair using polypropylene mesh, the mesh was placed from the retropubic space to the inferior part of the bladder in a tension-free fashion [1]. At follow-up, 49 women were anatomically cured (89.1%), five women had stage 2 anterior vaginal wall prolapse (9.1%) and one had a recurrent stage 3 (1.8%). Dietz et al reported that cystocele recurrence may occur anterior/ventral or posterior/dorsal to the mesh, or involve the whole anterior vaginal wall in cases of very loose mesh placement, a distinction that is impossible without ultrasound imaging [2]. In this case, 3D ultrasound clearly demonstrated recurrence with the presence of a large gap between the symphysis pubis and ventral (caudal) mesh margin, possibly due to insufficient anchor-

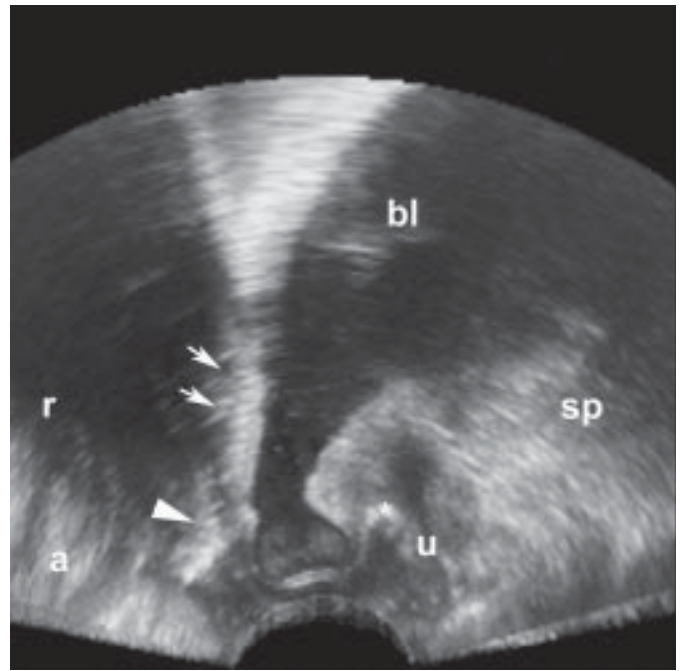


Fig. 2. Three-dimensional mid-sagittal view during stress showing a protrusion of the bladder base moving along the plane of the anterior vaginal mesh (arrows) displacing the anterior vaginal mesh dorsally and reaching the introitus. The configuration and position of the posterior mesh (arrowhead) is unchanged. There is a urethral kinking around the suburethral tape (*). (bl: bladder; sp: pubic symphysis; u: urethra; a: anal canal; r: rectum)

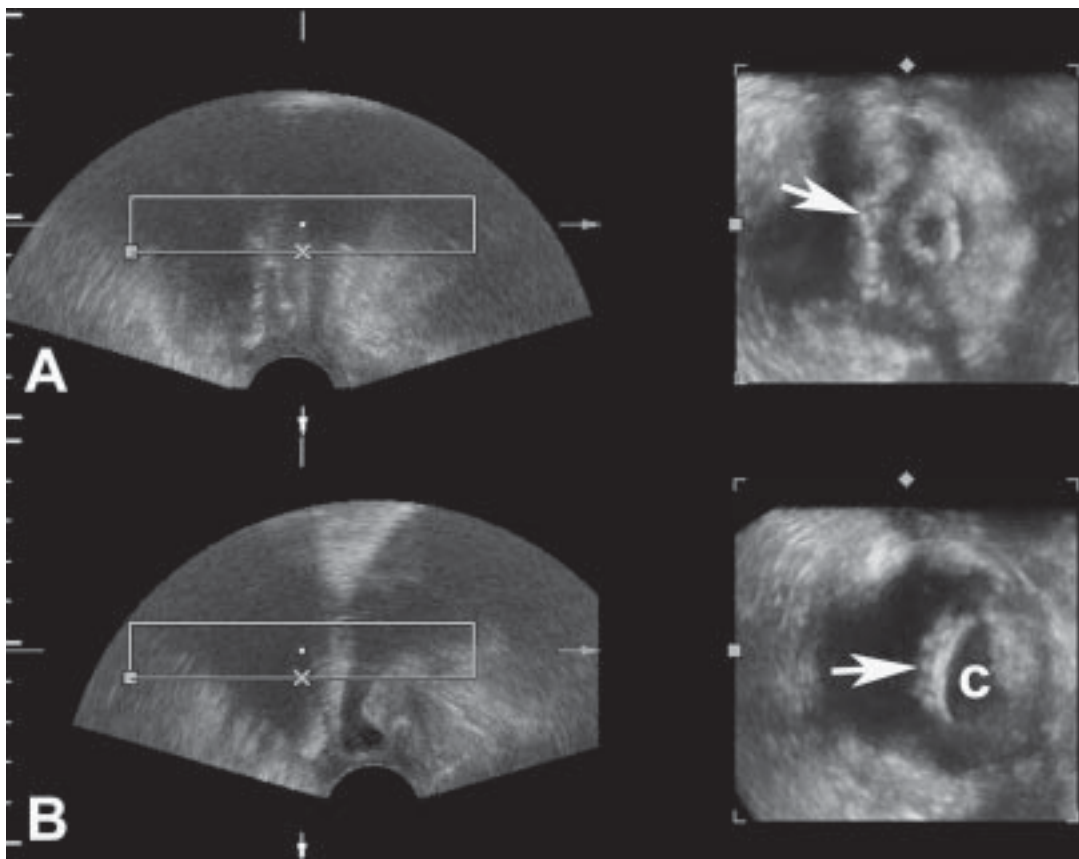


Fig. 3. The left-hand images demonstrate the level of the section lines (inferior border of the boxes marked x) in the sagittal view selected for axial views. The right-hand images represent the axial plane rendered volumes used for demonstrating the relationship between the anterior vaginal mesh, pubic symphysis and the protruding cystocele (C). The wavy configuration of the anterior vaginal mesh (arrows) at rest (A) is stretched flat by the protruding cystocele during stress (B).

ing of the mesh to the bladder neck or simply as a result of individual anatomical variation [2].

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