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TRANSOBTURATOR MESH ANCHORING FOR THE REPAIR OF LARGE OR RECURRENT CYSTOCELE

Hypothesis / aims of study

Large and recurrent cystoceles are recognised as a major problem in pelvic reconstructive surgery. Anterior colporrhaphy has been shown to have poor medium term success rates[1]. This may be because the repair does not reach the site of the (supposedly lateral or 'paravaginal') defect, as claimed by proponents of the 'defect-specific' approach to pelvic reconstructive surgery. On the other hand, concomitant pelvic floor damage or connective tissue weakness may predispose to surgical failure[2] regardless of the technique chosen.

Many clinicians use mesh implants for large or recurrent cystocele, but the efficacy of mesh implantation per se is controversial, with recurrence still common even after mesh interposition[3]. The solution may lie in effective anchoring of the mesh, and anchoring via the obturator foramen may be the most practical way of achieving this. In order to define the safety and efficacy of transobturator mesh placement we conducted an external surgical audit using 3D/ 4D pelvic floor ultrasound.

Study design, materials and methods

48 women with symptoms of prolapse underwent transobturator anterior vaginal wall mesh repair using the Perigee TM system (AMS, Minnetonka, MN, USA). Patients were invited back for a follow-up appointment conducted by two nonsurgeon co-authors 2-26 months after the procedure. The follow-up appointment consisted of a standardised interview, uroflowmetry, clinical examination (ICS POP-Q) and translabial ultrasound using a Voluson 730 system with 7-4 MHz volume transducer.

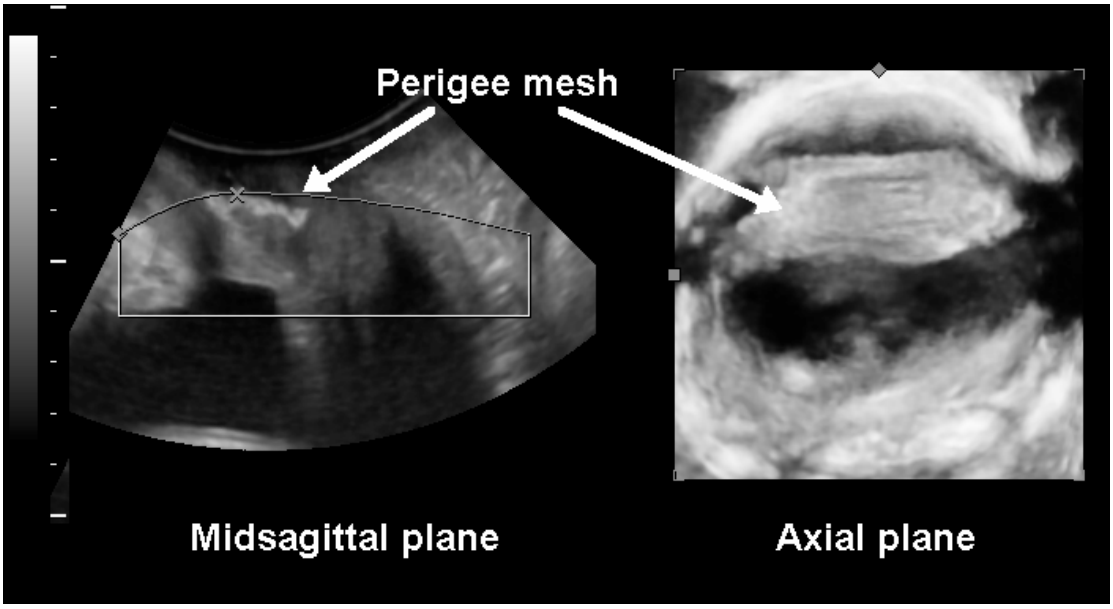

Figure: Perigee mesh in patient with bilateral levator avulsion and excellent clinical result 3 months after repair of 3rd degree cystocele and 2nd degree uterine prolapse.

Results

Forty- eight women who had undergone a transobturator mesh repair between March 2004 and January 2006 were seen in the context of an external surgical audit. There had been no major complications attributable to the procedure, in particular no urinary tract injuries and no haemorrhage requiring transfusion.

Patients were seen on average 11 months (range 2-26 months) postoperatively. Mean age was 60.9 (range 36-80) years, mean parity was 3.6 (range (1-9). Subjectively, they felt cured (n=18, 38%), improved (n=26, 54%), unchanged (n=2) or worse (n=2). Most were satisfied with the outcome of the procedure (n=37, 77%). Symptoms of recurrent prolapse (vaginal lump) were reported by 12 (25%). On clinical examination, the mean Ba coordinate was -1.5 (range -3 to +3). Cystocele recurrence (Grade 2 or 3) was observed in 7 patients (15%), with two showing a Grade 3 prolapse. There were 5 cases of mesh erosion (10%), all <10 mm in diameter.

In all cases the mesh was visible on translabial ultrasound (see Figure), although its appearance varied markedly. On Valsalva the ventral mesh margin was located on average 17.8 mm (range 6.3 to 34 mm) posterior to the bladder neck and was on average 21.2 mm (range 8.8- 37.3 mm) wide in the ap dimension. Mean bladder neck descent on Valsalva was 26.3 mm (range 4.8- 47.1 mm). The most inferior aspect of the bladder reached to 3 mm below the symphysis pubis on average (range (19.2 mm above to 37.9 mm below), with 12 patients below –10, and 3 below –20 mm. In 5 patients there was cystocele recurrence dorsal to the mesh, and in 4 there was significant descent ventral to the mesh.

In 5 women the mesh axis changed markedly on Valsalva with over 90 degrees of rotation of the cranial margin in a ventrocaudal direction, implying dislodgment of the superior anchoring arms. In one woman this was accompanied by the development of an anterior enterocele.

Interpretation of results

3D/ 4D translabial ultrasound can reliably identify polypropylene mesh implants in the anterior vaginal wall. The mesh is usually situated posterior to the bladder neck, caudal to the trigone and the posterior bladder wall, and is apparent as a highly echogenic linear structure. It is usually more clearly visible on Valsalva and behaves like an oversized trigonal sling, rotating around the fulcrum of the symphysis pubis. As such, it may have some limited compressive effect on the urethra. While it generally appears to provide for effective bladder support, it seems to cover a smaller area in the dorsoventral direction than anticipated, suggesting a varying degree of peri- and postoperative folding.

Transobturator anchoring of mesh appears to be an effective technique for the surgical treatment of large and/ or recurrent cystocele, with 77% of patients expressing satisfaction with the outcome. At an average followup time of 11 months, we demonstrated recurrence of a Grade 2 or 3 cystocele in 15%, and significant cystocele recurrence on ultrasound (descent of the bladder to over 10 mm below the symphysis pubis) was seen in 25% of patients. Cystocele recurrence may occur exclusively anterior/ ventral (8%) or posterior/ dorsal to the mesh (10%), or involve the whole anterior vaginal wall in cases of very loose mesh placement. Marked rotation of the mesh axis, indicative of dislodgment of the cranial anchoring tapes, seems to be one potential cause of recurrent anterior vaginal wall prolapse.

Concluding message

The Perigee procedure seems to be a safe and effective procedure for the surgical treatment of large and recurrent cystoceles, with a satisfaction rate of 77%. Recurrence may occur ventral or dorsal to the mesh and may in some women be due to dislodgment of the cranial anchoring tapes. Mesh erosion was observed in 10% of patients at a mean followup of 11 months.

References

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