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# UTRASONOGRAPHIC SCAN EVALUATION OF SYNTHETIC MESH USED FOR VAGINAL CYSTOCELE REPAIR COMPARING FOUR ARMS TRANS OBTURATOR TECHNIQUES TO ANTERIOR BILATERAL SACRO SPINOUS LIGAMENT AND ARCUS TENDINOUS SUSPENSION.

Hypothesis / aims of study

Pelvic organ prolapse (POP) surgery benefits of new synthetic mesh and new surgical kit to perform mini invasive surgery. Free meshes were placed with four arms trans obturator (TO), and a more recent one with anterior bilateral sacro spinous ligament and arcus tendinous suspension [1] (SE). Ultrasonographic scan shows synthetic mesh used in vaginal cystocele repair. Pelvic position and contraction of the mesh can be followed up after surgery [2, 3]. Dislodgement and contraction are pointed to be a part of mesh complication repair, for prolapse recurrence. Surgical procedure, define multi parameters to localize the mesh. The main objective is the evaluation of mesh contraction at 6 weeks after surgery. The other objective is to evaluate surgical procedure impact.

Study design, materials and methods

Between January and September 2009, we included prospectively 60 patients, 30 with trans obturator polypropylene mesh Ugytex™ (Sofradim™, CONVIDIEN™) (TO), and 30 with Pinnacle™ (Boston Scientific™) (SE) mesh for vaginal cystocele repair. The mesh was measured pre operatively (PO). Ultrasonographic scan was performed 2D/3D, intra vaginal and trans perineal, at the end of the procedure (D0), 3 day (D3) and 6 week (W6) follow up. 3D mesh reconstruction and intra vaginal scan permit a double checking of measurements. We evaluated mid-sagittal length of the mesh, anatomic place, distance to bladder neck and mesh area. We defined the “arc” of the mesh, distance between the two most opposite points of the mesh under vagina. Clinical examination with POP-Q was done at each follow up.

Results

We noticed a statistically significant difference between TO mesh contraction and SE mesh contraction in the mid-sagittal length 13% (+/-1.7) vs 4.5% (+/-.8) ($p<.05$). It was the same for the vaginal vault width 22% (+/-2) TO vs 4% (+/-1.3) SE at W6 ($p<.05$), with a power of 90%. At W6, SE mesh was longer than TO of 11mm (+/-5 mm). Mid sagittal arc of TO meshes decreased of 13% (+/- 1.6) between D3 and W6 versus 1% (+/-.2) for SE meshes.

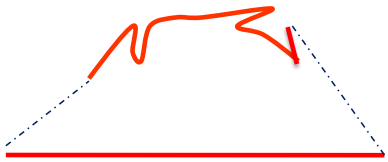
Interpretation of results

Considering the mesh spreading coefficient at D3 as the total mid-sagittal length on the sagittal arc of the mesh, we found a correlation with W6 spreading, rho=.67 ($p<.05$). Considering the arc of the mesh at W6 and mesh length PO, 50% of the PO length was in place under the vagina at W6 for TO meshes, 60% for TO associated with Richter procedure and 38% for SE.
The folding or waving of the mesh decreased between D0 and D3, but seemed to be fixed to W6. It seems that associated procedure can modify mesh placement.

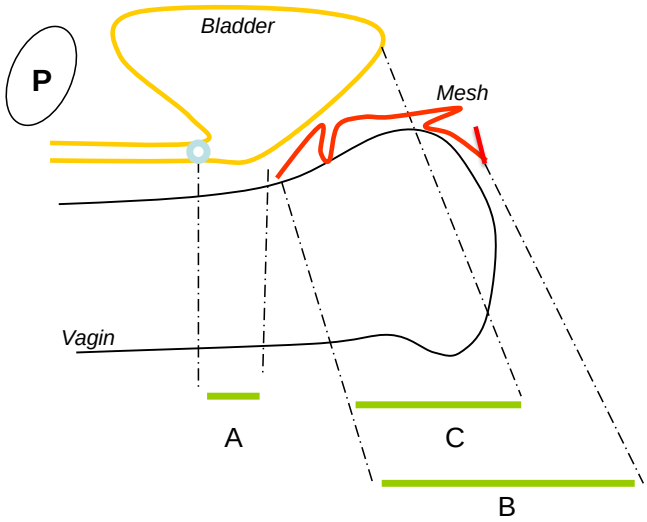
| **Mesh Size** | **TO** | **TO + Richter** | **SE** |
|---|---|---|---|
| *PO =* | *100 %* | | *100 %* |
| *Mid sagittal length (mm) W6* | *36 +/-2* | *39 +/-3* | *47 +/-4* |
| **Mesh Size Contraction** | | | |
| Mid sagittal length W6 / D3 | - 13% (+/-2) | | - 4.5% (+/-.2) |
| “Arc” W6 / PO | - 50% (+/-2) | - 40% (+/-2) | - 62%(+/-2) |

Concluding message

Prospective ultrasonographic scan permits to follow contraction and mesh placement. Anterior bilateral sacro spinous ligament and arcus tendinous suspension for vaginal cystocele mesh seems to have better spreading and less contraction than TO mesh. Benefits and consequence of surgical procedure and mesh fixation is evaluable by clinical examination, but ultrasonography data could prognostic success or permit to better understand recurrence. Six months results will be important to find more correlation with recurrence, rate is too small at W6.



**D**




**Legend**

**A**: Bladder neck – mesh distance

**B**: Mesh length "Arc"

**C**: Mesh length under the bladder

**D**: Total mesh Length

**P**: Pubis

Bladder Neck


References

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|---|---|
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| ***Is this a clinical trial?*** | **Yes** |
| ***Is this study registered in a public clinical trials registry?*** | **Yes** |
| ***Specify Name of Public Registry, Registration Number*** | **CEROG-2009-007** |
| ***Is this a Randomised Controlled Trial (RCT)?*** | **No** |
| ***What were the subjects in the study?*** | **HUMAN** |
| ***Was this study approved by an ethics committee?*** | **Yes** |
| ***Specify Name of Ethics Committee*** | **CEROG** |
| ***Was the Declaration of Helsinki followed?*** | **Yes** |
| ***Was informed consent obtained from the patients?*** | **Yes** |