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USING 3D TRANSPERINEAL ULTRASOUND TO VISUALIZE MESH IMPLANTS AFTER PROMONTOFIXATION: IS IT POSSIBLE ?

Hypothesis / aims of study

Promontofixation is the gold standard for the treatment of apical prolapse. Currently, it is most often performed with laparoscopic placement of anterior and posterior meshes and whithout associated hysterectomy. The chosen position for meshes and their attachment points could influence the anatomical and functional results but little is known about the final position of the prostheses. It is therefore to achieve a viewing feasibility study of anterior and posterior meshes with 3D ultrasound after laparoscopic promontofixation whithout hysterectomy.

Study design, materials and methods

This is an original clinical trial about female pelvic organ prolapse and imaging.
It is a mono-centric prospective observational study that included patients who received a laparoscopic double-promontofixation whithout hysterectomy between June 2014 and June 2015. We excluded patients with a history of prolapse surgically treated with setting up non-absorbable mesh. Perineal ultrasound with 3D acquisition is performed (1,2). The ultrasound volume analysis is performed on the « 4DView » software. Then we measured, on a median sagittal plane, the position of the prostheses, at rest, on maximum perineal contraction and during Valsalva maneuver. We also measured their size on a front reconstruction. The analysis of intra-observer reproducibility was carried out on 2 series of 3 measurements for each parameter carried out by the same observer at one month apart . The reproducibility of measurements is analyzed by the intraclass correlation coefficient.

Results

We included 6 patients with initial prolapse of grade 2 to 3. The average time between surgery and the realization of ultrasound is 5.9 months. The two meshes could be visualized in all patients included . Their position varies depending on the time of acquisition for each patient. This position is also variable depending on the patients. All prostheses could be reconstructed in a frontal plane for dimension measurement . The repeatability analysis of these measures shows excellent correlation. A qualitative analysis is also possible (kinking viewing, fixing defects ...)

Figure 1 : Median sagittal plane with viewing of the anterior and posterior meshes

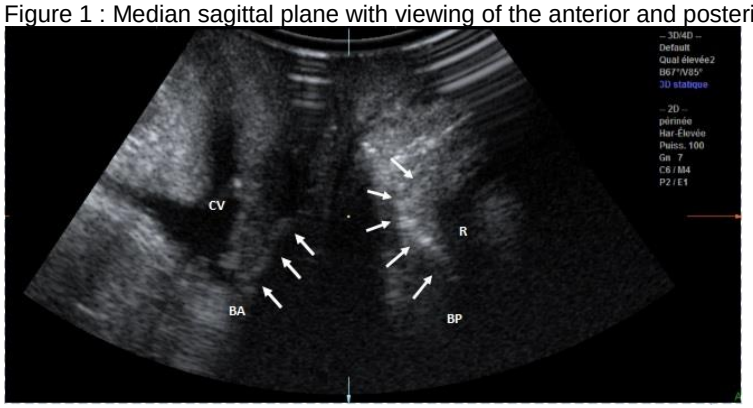

Figure 2 : Reconstruction in frontal plane of the anterior (on the left) and posterior (on the right) mesh

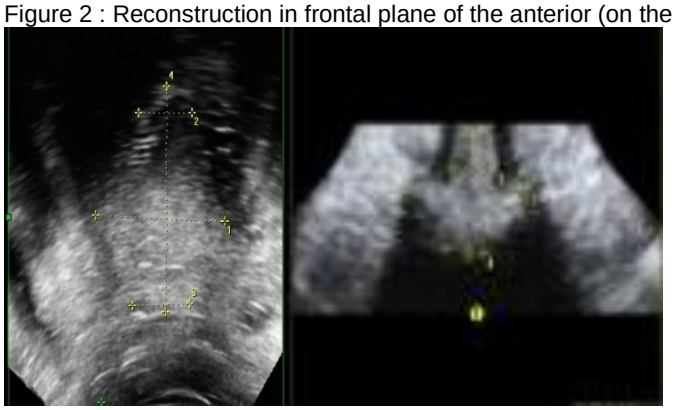

Table 1 : Repeatability analysis of meshes dimensions

	Mesure 1 (cm)	*Mesure 2 (cm)*	*CCI*	*IC 95%*
Anterior mesh				
Length	3.16 ± 0.55	3.16 ± 0.54	0.978	[0.943 -0.992]
Maximal width	2.55 ± 0.43	2.55 ± 0.44	0.994	[0.984 -0.998]
Minimal width	0.95 ± 0.11	0.96 ± 0.11	0.595	[0.182-0.828]
Posterior mesh				
Length	3.32 ± 0.30	3.35 ± 0.28	0.833	[0.608 -0.934]
Maximal width	2.45 ± 0.72	2.47 ± 0.74	0.978	[0.943 -0.992]
Cranial minimal width	1.04 ± 0.20	1.00 ± 0.14	0.712	[0.391 -0.880]
Caudal minimal width	1.04 ± 0.28	1.00 ± 0.26	0.947	[0.864-0.980]

Interpretation of results

Sonography is a good method of evaluation in view thanks to high echogenicity prostheses. This is an easily acceptable examination by patients since it is a perineal ultrasound, and not a transvaginal one. This exam is short (15 minutes average). The acquisition volume is easy to obtain. In contrast, the volume analysis requires experience in handling 3D volumes. The analysis of volume *a posteriori* is possible and allows replay or viewing by a different observer. One study realised by Eisenberg *and al.* has worked on position and dimensions of the meshes after promontofixation but for patients who had a systematical total hysterectomy (3). This study also found good reproducibility of the measurements. The trans-perineal ultrasound allows a dynamic study that could help better understanding of the mechanisms of recurrence and may allow a better management of it.

Concluding message

The use of trans-perineal ultrasound is possible in the assessment and monitoring of patients who underwent promontofixation. A larger study is underway to confirm these results.

References

1. Dietz HP. Ultrasound imaging of the pelvic floor. Part II: three-dimensional or volume imaging. Ultrasound Obstet Gynecol. 2004 Jun;23(6):615-25
2. Dietz HP. Why pelvic floor surgeons should utilize ultrasound imaging. Ultrasound Obstet Gynecol. 2006 Oct;28(5):629-34
3. Eisenberg VH, Steinberg M, Weiner Z, and al. Three-dimensional transperineal ultrasound for imaging mesh implants following sacrocolpopexy. Ultrasound Obstet Gynecol. 2014 Apr;43(4):459-65

Disclosures

Funding: NONE **Clinical Trial:** Yes **Public Registry:** No **RCT:** No **Subjects:** HUMAN **Ethics not Req'd:** It is a very small study based on volontriat proposed to the patients to test the feasibility. All patients signed a non -opposition form after written and oral information. A larger study is underway for which an ethics committee approval was given. **Helsinki:** Yes **Informed Consent:** Yes