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Background/Aim

Vaginal pessary is commonly used in women with pelvic organ prolapse with high efficacy. However, it may require multiple fitting trials to get the appropriate size for patients. This posed a heavy burden on the current health care systems and psychological stress to patients. Transperineal ultrasound (TPS) is a useful and non-invasive tool to assess the female pelvic floor. These ultrasound parameters may enable a more accurate selection of the size of vaginal pessary and to reduce the number of fitting trials. The aim of this study is to evaluate the association between of the appropriate size of vaginal pessary and the pelvic floor ultrasound parameters.

Methodology

This is a retrospective analysis of the prospectively collected database from 2016-2018 in a territory referral center. Women who attended the urogynaecological clinic had successfully fitted with a vaginal pessary for more than 1 year for pelvic organ prolapse (POP) were included in the analysis. Their basic demographics, POPQ staging of prolapse, the appropriate size of vaginal ring pessary that being used after fitting were documented. Before trial of any pessary, 3D/4D transperineal ultrasound was performed by trained urogynecologists. The volumes were analysis in offline software after the consultation. The hiatal parameters including the height, the width and the area of the hiatus at rest, maximum pelvic contraction and at Valsalva maneuver were measured. The levator ani muscle was assessed for the integrity. The correlation of the size of the appropriate vaginal pessary and the USG parameters were tested with Pearson coefficient and take $p < 0.05$ as statistically significant.

Results

Over the study period, total of 189 women were included for analysis, with the mean age was 63.7 (SD: 9.7) years old, median parity of 3 (range 1-6). 65.6% (124/189) of them had stage I-II POP while the other had stage III-IV POP. The sizes of the vaginal ring pessary

Ranged from 53mm to 85mm. 29.1 % (55/189) of them were diagnosed to have LAM avulsion. The correlation of the hiatal dimensions at rest and maximum Valsalva maneuver and the size of vaginal pessary used were listed in Table 1.

Interpretation of result

Women with POP were treated with vaginal ring pessary of wide range of sizes. There are weak but significant correlations between their hiatal dimensions at rest and Valsalva maneuver and the appropriate size of vaginal pessary used. In women with LAM avulsion, there is moderate correlation with the hiatal area while there is weak correlation to the hiatal height at Valsalva maneuver. In women with intact LAM, there are weak but significant correlations with the hiatal width at rest and Valsalva maneuver.

Conclusions

The pelvic floor hiatal dimensions have significant correlations with the appropriate size of vaginal ring pessary used for women with POP. Further study in factors association with the appropriate size of vaginal pessary is encouraged to facilitate a precise selection of pessary, and further in future to develop an individualized pessary for each patient.

Table 1. The correlation of the size of vaginal ring pessary and hiatal dimensions in women with or without LAM avulsion. Data presented in Pearson coefficient (p value).

	Total N=189	Women with LAM avulsion n= 55	Women with LAM intact n=134
At rest			
Hiatal height	0.17 (0.02)	0.05 (0.74)	0.15 (0.09)
Hiatal width	0.23 (<0.01)	0.01 (0.97)	0.23 (0.01)
Hiatal area	0.23 (<0.01)	0.05 (0.72)	0.20 (0.02)
At maximum Valsalva maneuver			
Hiatal height	0.23 (0.01)	0.29 (0.03)	0.15 (0.09)
Hiatal width	0.27 (<0.01)	0.01 (0.97)	0.23 (0.01)
Hiatal area	0.29 (<0.01)	0.34 (0.01)	0.20 (0.01)

Disclosure: None