608 Evaluating of pelvic floor muscle functions using two-dimensional transperineal ultrasound in pelvic organ prolapse

Mifuka Ouchi[1,2], Takeya Kitta[1], Yukiko Kanno[1], Madoka Higuchi[1], Mio Togo[1], Mayuko Tsukiyama[1], Kimihiko Moriya[1], Nobuo Shinohara[1], Kumiko Kato[3]

1) Department of Renal and Genitourinary Surgery, Graduate School of Medicine, Hokkaido University, Sapporo, Japan
2) School of Rehabilitation Sciences, Health Sciences University of Hokkaido, Tobetsu, Japan
3) Department of Female Urology, Japanese Red Cross Nagoya First Hospital, Nagoya, Japan

Introduction

Ultrasonography has developed to become an alternative method and a more practical alternative for both anatomical and functional assessment. Measurement of the descent of the anterior-posterior diameter (APD) of levator hiatus on ultrasound during voluntary contraction of PFM can be used to assess both the supporting function and the contractile function of the pelvic floor.

Nevertheless, to date, a few reports were published the validity of APD for the patients with pelvic organ prolapse (POP).

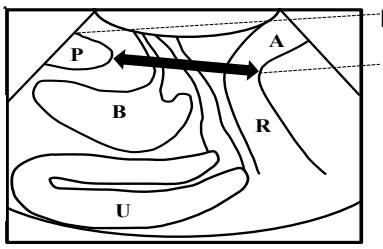
The aim of this study is to compare the pelvic function between women with pelvic organ prolapse pre and post PFM training, using conventional perineometer and dynamic transperineal ultrasound.

Methods

Twenty-eight women with POP were enrolled (67 years old (49-76)). Patients participated supervised PFM training (PFMT) for 16 weeks.
The maximum voluntary contraction (MVC) of PFM was assessed by perineometry (Peritoron®).
The formula used to calculate the difference in terms of distance between the maximum contraction and rest was as follows: APD = (APD at rest – APD at contraction). The reliability tests for vaginal pressure and ΔAPD was conducted in the first and second physiotherapy session.

Statistical analyses
Paired-T test or Wilcoxon signed-rank test for the pelvic functions before and after 16-week PFMT/ Spearman's rank correlation coefficient for MVC and APD/ The reliability was tested by intraclass correlation coefficients
P values <0.05 considered significant.

(Yoshida M et al. 2012)



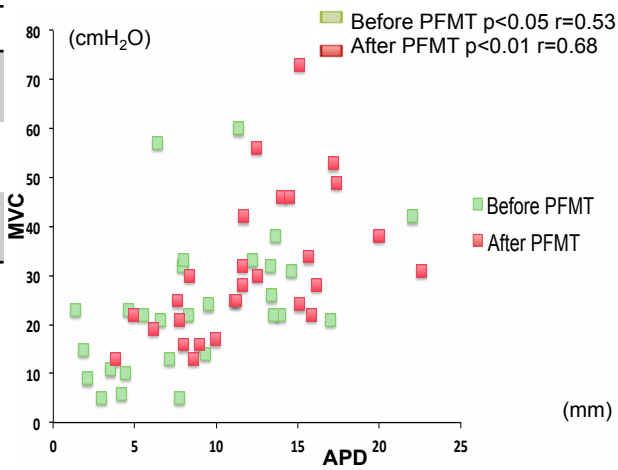
Results

	DAY 1	DAY 2	ICC
APD at rest (mm)	59.3 ± 4.7	58.6 ± 5.1	0.89 (0.39 – 0.99)
APD during PFM contraction (mm)	47.9 ± 3.2	49.3 ± 2.8	0.88 (0.37 – 0.99)
MVC (cmH_2O)	20.8 ± 10.6	21.6 ± 9.3	0.97 (0.80 – 0.99)

Reliability indexes of each PFM function (n=5)

	Before PFMT	After PFMT	P-value
APD (mm)	8.9±5.1	12.1±4.4	<0.0001
MVC (cmH_2O)	24.0±13.9	31.2±14.5	0.0001

The changes of PFM functions between before and after PFMT
(Paired-T test or Wilcoxon signed-rank test : p<0.05 n=28)



The correlation between APD and MVC in before & after PFMT
(Shapiro-Wilk Spearman's rank Correlation Coefficient: p<0.05, n=28)

Conclusions

Patients with POP
Decreased PFM functions
Levator hiatus area

PFM function was independently associated with POP.
(Braekken IH et al. 2009)

In POP patients, the levator hiatus area enlarged, and larger with progressive prolapse.
(Delancey JO et al. 1998)

After Supervised PFMT for 16 weeks
Improved
MVC
PFM strength
APD

Correlation between MVC& APD

Our results supported the feasibility of APD by ultrasonography to assess PFM contractility in patients with POP

References
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m-ouchi@hoku-iryo-u.ac.jp : Mifuka ouchi

There are no companies, etc. in a relation of conflict of interest requiring disclosure in relation to the presentation.