

PERICOACH® SYSTEM–ASSISTED PELVIC FLOOR EXERCISES FOR A 63-YEAR-OLD WOMAN WITH PELVIC ORGAN PROLAPSE

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INTRODUCTION

Pelvic organ prolapse (POP) is a common disorder among older women. Upon examination, 40% of women older than 50 years exhibit some degree of prolapse. This number is expected to increase further with the aging population.¹ Research supports the use of pelvic floor muscle (PFM) training to improve disability and symptoms of POP.^{2,3} This case describes a patient with POP who used the PeriCoach® System (Analytica Ltd, Brisbane, Australia), a novel home training device with Smartphone app and a web portal, to assist with her PFM exercises.

HISTORY

A nulliparous 63-year-old woman has had symptoms of POP for 18 months. She underwent an abdominal hysterectomy 13 years ago to resolve symptoms associated with endometriosis. The patient reported feeling perineal pressure when she walked and was evaluated by a urogynecologist. Urodynamics testing revealed incomplete emptying, with a post-void residual of 400 mL. Her urogynecologist referred her to physical therapy.

INITIAL PHYSICAL THERAPY EXAMINATION

On initial vaginal examination, the patient demonstrated 2/5 PFM strength with endurance of 7 seconds. External electromyography (EMG) showed generation of 6.4 μ V with a 5-second hold. Her Pelvic Floor Disability Index (PFDI) score was 111.3 out of 300, and her International Consultation on Incontinence Modular Questionnaire (ICIQ) score was 3 out of 21. The patient reported moderate perineal pressure every day, along with some urgency and stress urinary incontinence once a week or less. A bladder diary showed more than 13 voids a day. The patient was instructed to do PFM exercises by providing vaginal palpation feedback. The quality of her PFM contraction was fair. She contracted her gluteals and held her breath during the PFM contraction. Transabdominal imaging ultrasound showed very little evidence of PFM elevation with contraction.

TRAINING INTERVENTIONS AND OUTCOMES

Shortly after beginning physical therapy, the patient's urogynecologist fitted her for a pessary. While in place, the pessary decreased her symptoms of POP. Bladder training was taught beginning at 2-hour intervals. The patient also decreased her caffeine intake. Home PFM exercises were performed in an anti-gravity position with her buttocks raised up on pillows. She performed 20 exercises twice a day holding each for 5 seconds. During PFM training, the patient focused on not contracting her gluteals and breathing during her contraction.

After one month of practicing her home PFM exercise and progressive bladder training, she reported decreased urgency and the ability to walk at the mall without leaking. She had a fair-quality contraction and was able to hold for 7 seconds. In-clinic EMG assessment showed that the patient was able to contract her PFM better with visual feedback. When she was not looking at the readout on the EMG machine, the patient generated an average of 9.6 μ V with 7-second PFM contraction. When she looked at the EMG results while contracting, she was able to generate 11.3 μ V. This finding resulted in the decision to rent a home EMG trainer. Six weeks after beginning focused PFM training, the patient added home EMG use. At this point, the patient also began to use the pessary less.

After about a month of home EMG use, the PeriCoach System became available. PeriCoach is a novel biofeedback sensor device with accompanying Smartphone app and web portal software. This option was offered as an alternative to the home EMG rental, and the patient expressed interest in using it. The patient was started on a pre-programmed 3-second hold for 8 repetitions. She advanced to 8-second hold, 8 repetitions, performing 24 to 32 contractions twice a day lying down.

After 3 weeks of using the PeriCoach, both her PFDI and ICIQ scores were 0. Evaluation of her PFM strength showed a 3+/5 and she was able to hold 10 seconds. The patient reported that she had not used the pessary for 2 weeks. Six weeks after

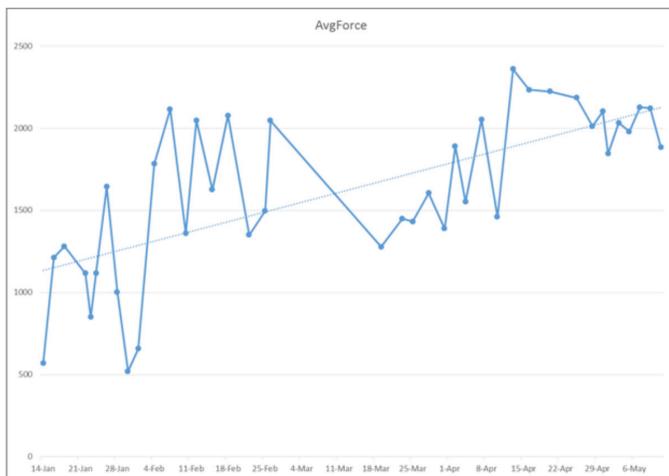
CASE STUDY

initiating PeriCoach training, another imaging ultrasound measurement revealed a 9-mm elevation with PFM contraction. Her PeriCoach program was changed to an individualized plan consisting of 20 repetitions of 10-second hold. She began using the PeriCoach in a standing position 6 weeks later.

Fifteen weeks after starting home PFM exercises training with the PeriCoach, the patient reported a very slight sensation of perineal pressure several times per week. PFM strength was measured vaginally 4/5 with 10-second hold and good elevation of the prolapse. Although some anterior POP was still evident on palpation, the patient did not report significant perineal pressure.

The PeriCoach reports and tracks PFM force change (ADC). The patient's average force during the first month of PeriCoach use was 1034.66 ADC (range 520-1643). After 5 months of PFM exercises using the PeriCoach, her average force was 1997.83 ADC (range 1845-2127). This indicates more closure force and more stable contractions (Figure 1). As of the publication of this case study, the patient is continuing to use PeriCoach.

Figure 1. Patient's PeriCoach data.



DISCUSSION

This case study illustrates a real-world woman whose symptoms of POP resolved after 3 weeks with the help of PFM exercises using the PeriCoach System. She showed improvement in the strength and quality of her PFM contractions using the device. Quality PFM contractions can result in maximal strength gains. Physical therapy assessment demonstrated that this patient performed PFM exercises better with visual feedback, resulting in the recommendation of a home trainer.

This patient indicated that she preferred using PeriCoach due to its user-friendly display on the Smartphone. Many EMG machines use LED lights to indicate the recruitment of the

patient's PFM: the more muscle activity, the more lights turn on. It can sometimes be difficult to detect a trailing off of the contraction with the display of lights. The PeriCoach Smartphone app displays a trace line that shows the activation or relaxation of the PFM in real time. This type of display makes it clear to the patient whether she is still sustaining the contraction (Figure 2) or her endurance is faltering (Figure 3).

Figure 2. Smartphone app display of well-sustained contraction.

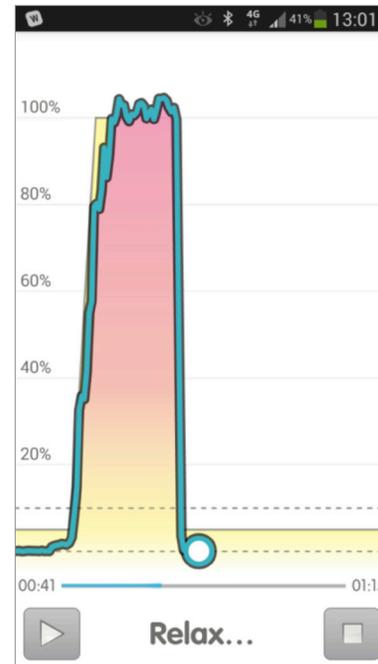
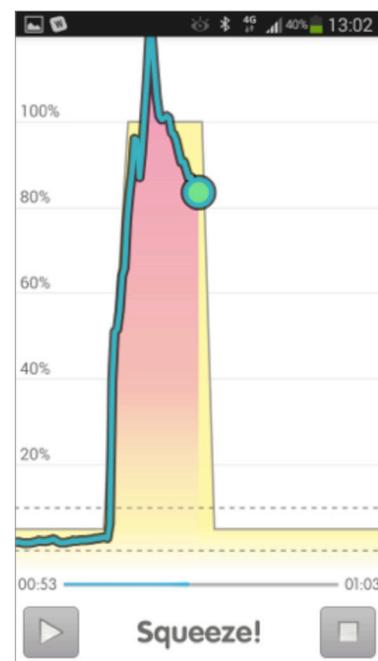


Figure 3. Smartphone app display of inability to sustain contraction.



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Patients such as this one with POP who exhibit improved contractions upon receiving visual feedback may benefit from performing PFM exercises using a home training device. According to this patient, the data displayed on the PeriCoach software provided her with the information she needed to ensure that her exercises were effective, leading to a resolution of her POP symptoms.

“The PeriCoach has helped me to continue an active and healthy lifestyle. Using the PeriCoach for regular and consistent Kegel exercises has helped me avoid surgery for POP and eliminated the need to use a pessary.”

– This patient's testimonial

REFERENCES

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Please note: The clinical opinions and recommendations expressed within this case study report are those of Dr. Beth Shelly, PT, DPT, WCS, BCB PMD, based on her own clinical experience and judgment and were in no way influenced by Analytica Ltd.

Dr. Beth Shelley is a paid consultant for Analytica, Ltd.

