Original Article

Treatment of Exercise Incontinence With a Vaginal Pessary: A Preliminary Study

I. E. Nygaard and A. R. Zinsmeister

1Department of Obstetrics and Gynecology, University of Iowa Hospitals and Clinics, Iowa City, Iowa; and 2Section of Biostatistics, Department of Health Sciences Research, Mayo Clinic, Rochester, Minnesota, USA

Abstract: Nine incontinent volunteers completed a preliminary study evaluating the use of a Hodge vaginal pessary with support in the treatment of incontinence during physical exercise. Urine loss was measured by weight changes in pads worn during exercise sessions, done both with and without pessaries. Satisfaction with this treatment modality was assessed by questionnaire. The average urine loss of the group during the exercise session without the pessary was 43 g, and with the pessary 16 g. Eight of the 9 women found the pessary comfortable and easy to use.

Keywords: Exercise; Pessary; Stress urinary incontinence

Introduction

Urinary incontinence during physical exercise is a common problem, occurring in approximately one-third of women participating in aerobics and running. [1]. Although these women also exhibit symptoms of urinary incontinence during other activities such as coughing, sneezing or heavy lifting, for many exercise is the most provocative activity. A previous study examining the relationship between exercise and incontinence revealed that, of women who participated in high-impact aerobics and were incontinent while doing so, 25% discontinued exercising solely because of the incontinence, while 65% wore pads while exercising. [1].

Correspondence and offprint requests to: Dr Ingrid Nygaard, Department of Obstetrics and Gynecology, University of Iowa Hospitals and Clinics, 200 Newton Rd, Iowa City, Iowa 52242, USA.

Anecdotally, many women do not feel that surgery is warranted for urinary incontinence precipitated primarily by an elective activity such as exercise. However, they are very eager to explore other forms of treatment that would enable them to continue to reap the health benefits of exercise. In the past, these have largely encompassed behavior modifications, including more frequent bladder emptying during exercise, changing the type of exercise, and pad use. The present study was undertaken to begin research into non-surgical methods of treating exercise incontinence. This study was designed to assess whether a vaginal pessary might play a role in alleviating urinary incontinence during exercise. Emphasis was placed on evaluating the comfort of the pessary during exercise, as well as its ease of placement and removal.

Bhatia and Bergman [2] used a vaginal pessary to predict the potential efficacy of surgery in stress-incontinent women, and described a temporary resolution of stress urinary incontinence in 10 of 12 women who used a Smith–Hodge pessary in the office for a short time. Bergman later noted good results in 60–75% of women with incontinence and varying degrees of prolapse fitted with either a Smith–Hodge or Gelhorn pessary. These results prompted the present investigation to assess whether incontinence during exercise could be successfully treated with a Hodge pessary. [3].

Materials and Methods

Non-pregnant female employees and patients were recruited by means of bulletin board flyers. In addition, community volunteers were solicited by means of newspaper advertisements and flyers in recreational facili-
ties. Thirteen women volunteered for the study. Patients were given a questionnaire regarding their incontinence and exercise history. They underwent a pelvic examination, post-void residual urine measurement by catheterization, bladder capacity measurement by intermittent water filling, urine stress test, and urine gram stain.

Criteria for exclusion from the study included:

1. Women with grade 4 uterine or vaginal prolapse (defined as prolapse past the introitus) [4].
2. Women who failed to demonstrate visible incontinence on office evaluation.
3. Women with a stenotic vagina, precluding pessary placement.
4. Women with a pelvic mass or uterus larger than 12 weeks' size.

Of the initial 13 patients recruited, none were excluded by criteria.

The study was approved by the Mayo Clinic Institutional Review Board. All patients signed an informed consent prior to their involvement in the study. Participants received nominal compensation.

Following the physical examination, patients were fitted for a Hodge pessary with support (Mylex Products, Chicago IL 60631). The largest size which could be worn comfortably was chosen. Patients were then taught how to insert and remove the pessary themselves. The time required for each women to successfully learn to place and remove the pessary was noted.

Each woman was given detailed verbal and written instructions. She was asked to exercise once with the pessary and once without the pessary, each time wearing a preweighed pad (Serenity Plus, Johnson and Johnson, Ft. Washington, PA 19034). She was instructed to reproduce the two sessions as often as possible, including the same routine, same time of day, and same time during her menstrual cycle. In an attempt to somewhat control somewhat the urine volume while exercising, each woman was asked to void 1 hour prior to exercising and then promptly drink 8 fl oz of a non-caffeinated beverage. Following each exercise session, the patient placed the pad in a sealed plastic container. She then voided immediately after exercising, measured the urine in a hat provided, and recorded this value. Participants completed a questionnaire about the exercise session, which included questions about the comfort and ease of application of the pessary.

The pads were weighed on a scale with a minimal measurement unit of 1 g. Four continent controls were also asked to exercise wearing the preweighed pad, which was then weighed to assess the contribution in weight of sweat.

Women were stratified according to parity (≤1; ≥2). The order of the exercise session in which the pessary was worn was randomly assigned. Because of the small number of subjects studied, no formal statistical analysis was conducted. A descriptive summary of the distribution of differences (pessary vs. no pessary) for the overall group and within subgroups was tabulated and a graph constructed depicting the observed urine loss values.

Results

Of the 13 women who entered the study, 9 completed it. The average age was 48 years, with a range of 21-69 years. Average weight was 67 kg with a range of 50-90 kg. Parity ranged from 1 to 5, with a mean of 2. None of the 9 women who completed the study had had a Caesarean section delivery. Seven women were postmenopausal; 5 of these women were currently using estrogen replacement therapy.

The 4 women who did not complete the study were similar to the women who did in age, weight, parity, incontinence severity and exercise habits. The only difference noted in one woman who was postmenopausal, not sexually active, and not on estrogen replacement, was that of a narrowed vagina. This patient noted discomfort during the pessary fitting and was the only patient who required more than 5 minutes to learn how to insert and remove the pessary. While she remained enthusiastic about trying this modality in the office during the initial visit, telephone follow-up with her later revealed that she did not try to place the pessary at home. The other 3 women had no difficulty learning to place the pessary and expressed no discomfort in the office. All 3, however, stated that they had scheduling conflicts which made it impossible for them to perform the exercise sessions as requested.

Five of the women had had no pelvic surgeries. Two women had undergone an abdominal hysterectomy, bilateral salpingo-oophorectomy, and urethropexy; 2 women had undergone an abdominal hysterectomy and bilateral salpingo-oophorectomy; 3 women had undergone a vaginal hysterectomy and anterior vaginal repair; and 1 woman had undergone a vaginal hysterectomy. Of the 9 women who completed the study, 5 had undergone a hysterectomy and 4 had not.

Each woman currently participated in one to four different exercise activities. Walking was the most common exercise, with 12 of the 13 women listing walking as their primary form of exercise. In addition, 2 of the women participated in aerobics, 1 in running, 4 in bicycling, 1 in tennis, 1 in golf, 1 in ice skating, and 1 in weightlifting.

Exercises in which participants stated they frequently experienced urinary leakage included the following: walking, 8; aerobics, 7; running, 5; tennis, 2; trampolining, 3; tennis, 2; swimming, 1; dancing, 1; treadmill walking, 1; horseback riding, 1; and weightlifting, 1. All of the women had experienced incontinence during at least one type of exercise.

Eight women stated that they had stopped a particular exercise specifically due to urinary incontinence. Five women stopped participating in aerobics, 3 in running and 2 in trampolining.