ORIGINAL RESEARCH—EPIDEMIOLOGY & RISK FACTORS

Sexual Activity and Vaginal Topography in Women with Symptomatic Pelvic Floor Disorders

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ABSTRACT-

Introduction. Pelvic floor disorders affect vaginal anatomy and may affect sexual function.

Aims. The aims of this study were to explore the relationship between vaginal anatomy and sexual activity in women with symptomatic pelvic floor disorders and to assess whether vaginal measurements (topography) correlate with sexual function.

Methods. This is a retrospective cohort study comparing sexually active and nonsexually active women planning urogynecologic surgery. Our primary outcome was the difference in vaginal topography based on Pelvic Organ Prolapse Quantification (POP-Q) exam between cohorts. Correlations between POP-Q measurements and Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire short form (PISQ-12) scores were assessed in sexually active women.

Main Outcome Measure. The POP-Q is a quantitative and standardized examination for prolapse. The PISQ-12 is a condition-specific sexual function questionnaire validated in sexually active women with pelvic floor disorders.

Results. Of 535 women, 208 (39%) were sexually active and 327 (61%) were not. Median genital hiatus (GH) and perineal body (PB) measurements and a PB : GH ratio were not significantly different between the two cohorts. Total vaginal length (TVL) was longer in sexually active women (median 9 vs. 8 cm, P < 0.001). In a linear regression analysis controlling for potential confounders, sexually active women still had a longer TVL by 0.4 cm (95% confidence interval 0.07, 0.6 cm) compared with those who were not sexually active. Of the 327 nonsexually active women, 28% indicated they avoided sexual activity because of pelvic floor symptoms. There was poor correlation between TVL, GH, PB, and PB : GH ratio with PISQ-12 scores (r = 0.10, -0.05, -0.09, -0.03, respectively).

Conclusions. In women with pelvic floor disorders, sexual activity is associated with a longer vaginal length. One-quarter of women indicated they avoided sexual activity because of pelvic floor symptoms. Vaginal topography does not correlate with sexual function based on PISQ-12 scores. Edenfield AL, Levin PJ, Dieter AA, Amundsen CL, and Siddiqui NY. Sexual activity and vaginal topography in women with symptomatic pelvic floor disorders. J Sex Med 2015;12:416–423.

Key Words. Pelvic Floor Disorders; Sexual Function; Sexual Activity; Vaginal Topography; Pelvic Organ Prolapse; Sexual Dysfunction

Introduction

I n the United States, nearly one-quarter of women experience a pelvic floor disorder (PFD) such as pelvic organ prolapse (POP) or urinary/fecal incontinence [1]. The lifetime risk of undergoing a surgical procedure for POP or urinary incontinence (UI) has been found to be 11% by 80 years of age [2]. Population trend projections show that the number of women with at least one PFD will increase in the United States from 28.1 million in 2010 to 43.8 million in 2050, or even as high as 58.2 million [3]. Given this important growing public health concern, further understanding of anatomy and function related to these PFDs is paramount.

The literature is inconsistent regarding whether symptomatic PFDs may affect sexual function in women. PFDs have been associated with lower sexual function in women [4], and women with UI have more sexual complaints [5]. Pelvic floor symptoms have also been associated with low sexual arousal, infrequent orgasm, and dyspareunia in women [6]. Conversely, other studies have shown a relatively high level of sexual satisfaction and sexual function in women with PFDs [7,8]. Specifically, one prior study demonstrated no difference in sexual function between women with prolapse and incontinence and women without these disorders [8]. Another large study of over 4,000 community-dwelling women showed that sexual activity and sexual satisfaction are not affected by PFDs [9].

The etiologies for experiencing sexual dysfunction in patients suffering from PFDs have varied depending on the specific disorder. Prior studies have shown that pelvic pain and fear or embarrassment of urine leakage during intercourse are etiologies for sexual dysfunction [10–12]. In addition, POP studies have shown that women seeking treatment for advanced prolapse have a lower body image and worse sexual function [13,14]. After undergoing surgical repair for POP, both body image and sexual function improve [15]. Given the effects of PFDs on sexual function and that the mechanisms involved influence both anatomy and function, we chose to further examine whether the vaginal topography in particular correlates with sexual activity and sexual function among women with symptomatic PFDs.

Vaginal topography may include internal vaginal measurements of caliber and depth, but also external measurements of the genital hiatus (GH) (size in centimeter of vaginal opening) and perineal body (PB). These external measurements typically provide "Level III support" to the lower third of the vagina, associated with the perineal membrane, levator ani muscles, and PB [16]. The GH and PB are frequently disrupted in women with prolapse and incontinence, as Level III support is compromised in some but not all women with PFD.

Furthermore, the size of the GH and PB may be highly relevant for female sexual function, particularly with regard to sensation and pain. It is unclear if these external measurements correlate with sexual function in women with PFD. Those who have changes in GH and/or PB may experience changes in sensation and sexual function, ultimately resulting in less sexual activity. The variability in this vaginal topography measurement could be a potential explanation for some of the conflicting results we find in the literature with regard to sexual function in women with PFD. Thus, we aim to characterize the relationship between sexual function and vaginal anatomy, particularly with respect to the GH and PB, in women with PFDs.

Aims

Our primary aim is to compare vaginal topography based upon Pelvic Organ Prolapse Quantification (POP-Q) exam measurements between sexually active and nonsexually active women with symptomatic PFD. In sexually active women with PFD, we further aim to assess the relationship between vaginal topography and sexual function by assessing the correlation between POP-Q measurements and Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ-12) scores.

Methods

After institutional review board approval was obtained, we performed a retrospective cohort study of women with symptomatic PFD at our institution. We defined symptomatic PFD as those planning for a reconstructive urogynecologic surgical procedure with the Division of Urogynecology and Reconstructive Pelvic Surgery at Duke University Medical Center from February 1, 2011 through January 31, 2012. We reviewed responses to several specific questions of the short form of the Pelvic Floor Distress Inventory (PFDI-20) to categorize bothersome PFD symptoms within our population [17]. The PFDI-20 is a validated, condition-specific measure designed to assess symptoms and bother in patients with PFDs, and all of our subjects completed the questionnaire prior to surgery [17]. Subjects' answers to each question consist of a "yes" or "no" response to the specific symptom and a rating of bother from 1 (not at all) to 4 (quite a bit) [17], and we characterized a bothersome PFD symptom as a "yes" response with any degree of bother (from 2 to 4). We also reviewed relevant clinical and surgical characteristics and POP-Q exam findings. We compared two cohorts of subjects: (i) women who were sexually

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