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ULTRASONOGRAPHIC DIAGNOSIS OF PARAVAGINAL DEFECTS: A CRITICAL EVALUATION

Aims of Study: The purpose of this study was to evaluate the qualitative and quantitative effects of bladder and vaginal balloon volumes on the ultrasonographic diagnosis of paravaginal defects.

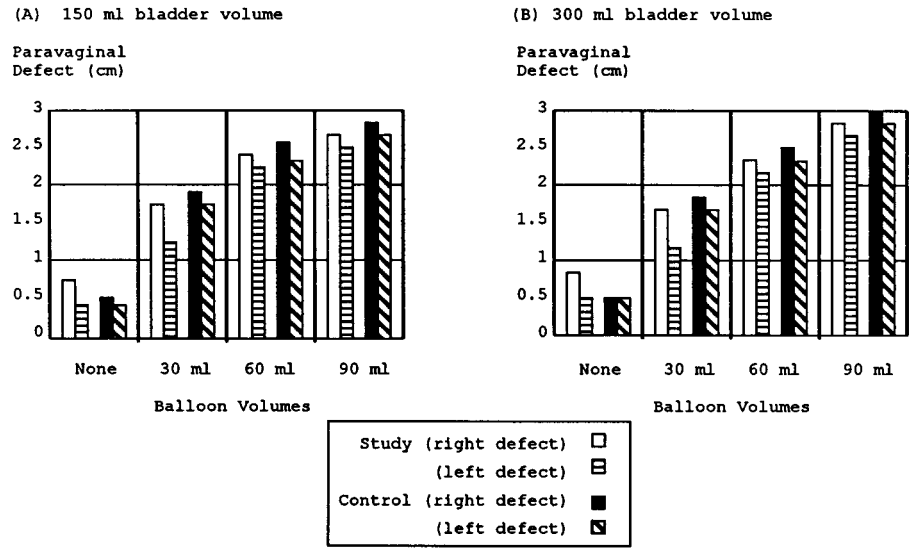
Methods: Transabdominal ultrasound measurements were performed on 15 patients with stage four pelvic organ prolapse and coexisting paravaginal defects (study group) as well as on 15 nulliparous patients without anterior vaginal wall or pelvic organ prolapse (control group). Paravaginal defects were diagnosed on physical exam if the anterior vaginal wall prolapse was reduced by supporting the lateral vaginal sulci with curved ring forceps. Staging of prolapse was based on the POPQ system. The participants were catheterized prior to the ultrasound procedures and 150 ml of fluid was placed in the bladder. Coronal sonographic images were obtained and the deepest vertical distances between a horizontal line across the bladder base and the bottom of the defects were measured. The paravaginal defects were first measured without a water-filled balloon in the vagina, and then sequentially with a 30, 60 and 90 ml water-filled balloon placed in the vagina. These measurements were repeated at a bladder volume of 300 ml. All measurements were obtained with the patients in the supine position.

Results: All patients in the study group, and none in the control group, had bilateral paravaginal defects on physical examination.

	Study	Control	*P*
Mean Age (years, range)	58.8 (48 to 75)	33.4 (21 to 58)	.001
Mean Body Mass Index (range)	28 (25 to 32)	26.5 (22 to 43)	NS
Mean Q-tip deflection (range)	62° (30° to 90°)	5.7° (0° to 30°)	.002

Paravaginal defects were detected on transabdominal ultrasound in both the study and control groups with or without clinically observed paravaginal defects (Figure 1). The paravaginal defects were larger in the control group than in the study group at all balloon volumes. In both groups, the size of the paravaginal defect was directly related to the size of the balloon placed in the vagina ($P < .00001$). For a given balloon volume, there were no significant differences in the paravaginal defects measured at a bladder volume of 150 ml compared to those measured at 300 ml.

Figure 1. Paravaginal defects measured by transabdominal ultrasound at bladder volumes of 150 ml (A) and 300 ml (B) for study and control groups.



Conclusion: Transabdominal ultrasound does not appear to be useful in detecting paravaginal defects.

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THE QUANTIFICATION OF UTEROVAGINAL PROLAPSE BY ULTRASOUND: A COMPARISON WITH THE ICS PROLAPSE ASSESSMENT SYSTEM

Aims of Study

For more than 10 years translabial ultrasound has been used to assess the lower urinary tract in urinary incontinence and prolapse (1,2,3,4). Descent of the urethra and bladder outlet can be quantified against the inferoposterior margin of the symphysis pubis. However, little attention has so far been paid to descent of the uterus, vaginal vault and posterior vaginal wall (5). Cervix, cul de sac and rectum can be visualized with translabial ultrasound. We aimed to compare the data obtained by ultrasound quantification of prolapse with the results of clinical assessments carried out according to the recently introduced ICS pelvic organ prolapse classification system (6,7) and traditional clinical prolapse staging.

Methods

76 patients referred for urogynaecological assessment were examined clinically by two authors (BTH, JB) and by translabial ultrasound by the other author (HPD). For a pilot study (n=26), BTH was blinded against the ultrasound result. Subsequently, both examiners were blinded against each other's results. As results did not differ significantly, both groups were merged for analysis.

The pelvic organ prolapse classification system of the International Continence Society (6,7) involves the identification of points on the anterior and posterior vaginal wall as well as vault or cervix and the measurement of their descent with straining, with the hymen serving as the reference point. The examination was carried out in the supine position and with bladder emptied.

Ultrasound was also performed supine with bladder emptied, using 3.5 -5 MHz curved array probes on several commercially available ultrasound systems. The probe was