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DEFINING PELVIC ORGAN PROLAPSE: CORRELATION OF SYMPTOMS WITH VAGINAL TOPOGRAPHY

Hypothesis / aims of study
Changes in vaginal topography are variably described as "pelvic organ prolapse" (POP). In this study, we tested several anatomic (topographic) definitions of prolapse to determine which definition(s) best distinguish patients with and without POP symptoms.

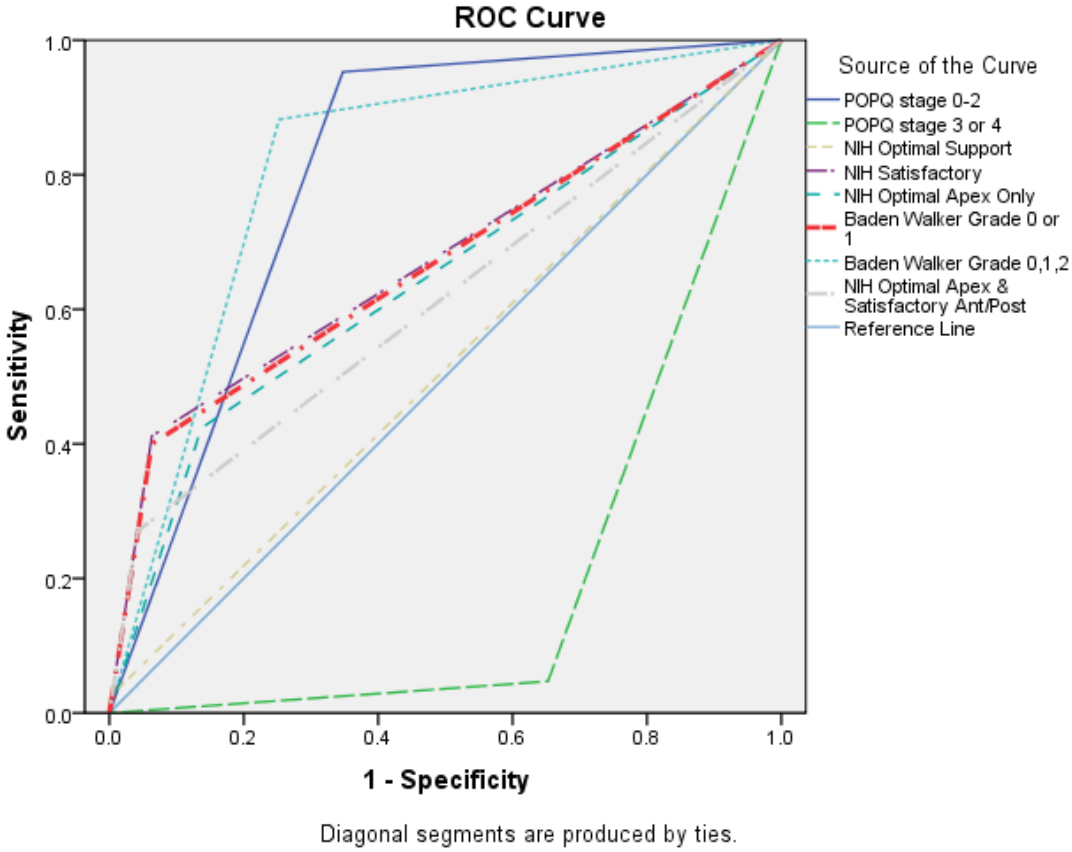
Study design, materials and methods
Data was prospectively collected from new urogynecologic patients at a single academic center between July 2007 and April 2008 with IRB approval. Participants completed the short form of the Pelvic Floor Distress Inventory (PFDI). Women were considered to have POP symptoms if they answered affirmatively to PFDI item: "Do you usually have a bulge or something falling out that you can see or feel in the vaginal area?" Participants also underwent physical examination with prolapse quantification using Pelvic Organ Prolapse Quantification (POP-Q). We created 8 POP definitions using United States National Institutes of Health (NIH) consensus definitions of optimal and satisfactory support as well as definitions based upon the Baden Walker scale and POP-Q scoring, two systems commonly used for the grading of pelvic organ support. Each definition was compared between participants with and without POP symptoms.
SPSS Version 18 was used for statistical analysis. Pearson Chi-square test was used to compare the proportion of participants with and without POP symptoms who meet each definiction. ROC curves were created and area under curve (AUC) used to determine which definition best discriminated between women with and without POP symptoms.

Results
This analysis includes 180, predominantly Caucasian (85%), women with a mean age±SD of 60±14 years and median POPQ stage of 2 (range 0-4). PFDI subscale scores (mean±SD) were as follows: UDI 44±28, POPDI 29±23, CRADI 25±20. Approximately half of participants (53%) had POP symptoms.

Table 1 displays the proportion of women who meet each POP definition by POP symptom status. The percentage of women with and without POP symptoms who met criteria for prolapse differed significantly for 7 out of the 8 proposed definitions.

Prolapse Definitions	POP Symptoms	No POP Symptoms	P-value	Area Under ROC Curve (p-value)
NIH "Optimal" – Stage 0 *A/Ba & A/Bp = -3, C ≤ -(TVL-2)*	0/95 (0%)	2/85 (2%)	.133	.512 (.785)
NIH "Optimal" Apex Only *C ≤ -(TVL-2)*	13/95 (14%)	36/85 (42%)	<.001	.643 (.001)
NIH "Satisfactory" – Stage 1 *A/Ba, A/Bp, and C ≤ -1*	6/95 (6%)	35/85 (41%)	<.001	.674 (<.001)
NIH "Optimal Apex, "Satisfactory" Anterior/Posterior	4/95 (4%)	23/85 (27%)	<.001	.614 (.008)
POP Q ≤ Stage 2	33/95 (35%)	81/85 (95%)	<.001	.803 (<.001)
POP Q ≥ Stage 3	62/95 (65%)	4/85 (5%)	<.001	.197 (<.001)
Baden Walker Grade 0-1 *A/Ba & A/Bp <-1 and C ≤ -1/2 TVL*	6/95 (40%)	34/85 (40%)	<.001	.668 (<.001)
Baden Walker ≤ Grade 2 *A/Ba, A/Bp, and C ≤ 0*	24/95 (25%)	75/85 (88%)	<.001	.815 (<.001)

Figure 1 displays the ROC curve for each POP definition. The further the curve lies above the reference line the more accurate the test for discriminating symptomatic POP.



Interpretation of results

Among women without symptoms of prolapse, few (2%) meet the NIH definition of optimal support which has been proposed as the gold standard for treatment of pelvic organ prolapse, suggesting that this is not a clinically meaningful definition for distinction of women with and without symptomatic prolapse.

In comparing women with and without symptoms of prolapse, women with symptoms of prolapse are more likely to meet definitions of Baden Walker > Grade 2 or POP-Q > Stage 2.

Concluding message

These findings are consistent with previous reports that when POP nears the level of the hymen, patients are more likely to be symptomatic. Definitions that define prolapse in relation to the hymen may be more clinically meaningful for defining prolapse itself as well as successful treatment of prolapse.

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Was this study approved by an ethics committee?	**Yes**
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Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**