

Poster #: 47

Title of Impact of hysterectomy status on distal colonic morphology and endoscopic performance:
Abstract: Quantitative assessment at CTC.

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Modality: CT

Organ System: GI

Intro: Post-hysterectomy status is associated with decreased performance at endoscopy. Here we provide detailed quantitative assessment of distal colonic morphology and correlate with hysterectomy status and endoscopic performance.

Purpose: Using novel CTC quantification software, our aim was to assess for differences in distal colonic morphology with hysterectomy status, which may help explain higher rates of incomplete and difficult endoscopic exams in post-hysterectomy patients.

Methods Used: CTC datasets from 73 women (37 post-hysterectomy, 36 native pelvis) were compared. Inclusion criteria: incomplete endoscopic exams with reports available for review. Exclusion criteria: severe diverticular disease, large uterine fibroids, other abdominopelvic surgery and colonic masses. Length, tortuosity (number of high curvature points (hcp)), and compactness (boxed volume containing centerline divided by centerline length) of the rectum, sigmoid and combined rectosigmoid were assessed. Height of the sigmoid apex relative to the lumbosacral junction was also assessed. Each dataset was quantified twice by a single reader on separate occasions. The groups were compared using the unpaired two-tailed t-test. Relative risk associated with post-hysterectomy status and failure to clear the sigmoid at endoscopy was calculated.

Results of Abstract: Post-hysterectomy women had lower relative heights of the sigmoid apex (29.7 vs 57.4 mm, $p = 0.002$), more tortuous sigmoid (4.24 vs 3.49 hcp, $p = 0.020$) and rectosigmoid (5.30 vs 4.42 hcp, $p = 0.012$), more compact rectosigmoid (3362.1 vs 4028.7 mm², $p = 0.001$) and shorter rectosigmoid (652.0 vs 703.2 mm, $p = 0.026$). Failure to clear the sigmoid at endoscopy was higher in post-hysterectomy women (45.9 vs 22.2 %), with relative risk of 2.068 ($p = 0.043$).

Discussion: Post-hysterectomy women have more tortuous and more compact distal colons, as well as a lower position of the sigmoid apex. These findings may be secondary to absence of the uterus which allows the sigmoid to hang lower in the pelvis and fold upon itself. Despite shorter length in post-hysterectomy patients, there was increased failure rate to clear the sigmoid at endoscopy, suggesting these post-surgical morphologic changes may impact endoscopic performance.

Scientific and/or Clinical Significance? We provide detailed quantitative evidence of post-hysterectomy changes in distal colonic morphology which correlates with decreased endoscopic performance.

Relationship to existing work Little is reported about quantitative assessment of colonic morphology. We used novel methods to provide detailed quantitative evidence which demonstrates correlations between hysterectomy status, changes in colonic morphology, and endoscopic performance.

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