

Accuracy of Preoperative Pelvic Ultrasound in Predicting Uterine Weight Across Varying Pathologies

Rohan V Hattiangadi^{1*}, Daniel W Szydlo², Marisa M Dahlman¹

¹Gynecology, Virginia Mason Franciscan Health, 1100 Ninth Ave., Seattle WA 98101, USA

²Fred Hutchinson Cancer Research Center, 1100 Fairview Ave N, Seattle, WA 98109, USA

***Corresponding author**

Rohan V Hattiangadi, Gynecology, Virginia Mason Franciscan Health, 1100 Ninth Ave., Seattle WA 98101, USA

Submitted: 17 July 2021; Accepted: 20 July 2021; Published: 25 July 2021

citation: Rohan V Hattiangadi, Daniel W Szydlo, Marisa M Dahlman. (2021). Accuracy of Preoperative Pelvic Ultrasound in Predicting Uterine Weight Across Varying Pathologies. *Int J Women's Health Care*, 6(3): 197.

Abstract

Objectives: The purpose of this study is to evaluate the accuracy of preoperative pelvic sonography in predicting the weight of a non-gravid uterus at the time of hysterectomy. Additionally, the study seeks to examine the effect of varying uterine pathologies on the accuracy of these predictions.

Methods: This was a retrospective comparative study in a tertiary care hospital with a total of 318 patients who underwent pelvic ultrasound, with reported uterine volumes, prior to undergoing hysterectomy in 2018. Estimated uterine weights from preoperative pelvic ultrasounds were compared to actual uterine weights from post-hysterectomy pathology reports. A Bland-Altman plot was constructed to determine intermethod agreement with 95% limits of agreement. Simple linear regression analysis was used to correlate estimated and actual uterine weights. Multivariable linear regression was performed, allowing for subgrouping by uterine pathology.

Results: While a strong positive correlation was identified between the two measurements ($r = .93, p < .01$), the Bland-Altman analysis showed that actual uterine weight ranged from 0.51 to 1.99 times the magnitude predicted by preoperative ultrasound. These wide deviations in intermethod agreement were similar amongst the various uterine pathologies. Multivariable linear regression analysis demonstrated the difference in estimated and actual uterine weight was 2 to 3.5 times larger for patients with endometrial pathology, adenomyosis, and leiomyomata as compared to normal uteri ($p < .03$).

Conclusion: This study shows that in 95% of cases, actual uterine weight ranged from half to twice as large as estimated by preoperative pelvic ultrasound. Uterine pathology had a significant impact on the reliability of ultrasound for estimation of uterine weight.

In gynecologic practices where preoperative estimations of uterine weight are instrumental in choosing a surgical approach for hysterectomy, reliance on pelvic ultrasound as a means of predicting uterine weight should be carefully considered.

Keywords: uterine, weight, volume, fibroids, adenomyosis, hysterectomy

Copyright: ©2021 Rohan V Hattiangadi, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.