The prevalence of pouch of Douglas obliteration depicted on ultrasound by a negative sliding sign in general and low-risk for endometriosis populations of women

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Objective:
Pouch of Douglas (POD) obliteration can be predicted with a high degree of diagnostic accuracy in women with signs and symptoms suggestive of endometriosis using transvaginal ultrasound (TVS). As the awareness for ultrasound potential in the diagnostic workup of endometriosis grows, with international consensus publications such as that by the International Deep Endometriosis Analysis (IDEA) group, it is likely that sliding sign test will permeate beyond tertiary academic units. For a condition that has been riddled with diagnostic dilemmas, including delays in diagnosis reaching a median of 7 years, it is relevant that we understand the utility of the TVS advocated by IDEA for POD obliteration (30% in high risk patients) and direct visualization of disease from a more generalizable perspective. At the most basic level, this study aims to determine the prevalence of a negative sliding sign on TVS in a general population of women referred for a pelvic TVS for any indication. Secondly, subgroup analyses of women with and without endometriosis-related indications (e.g. dysmenorrhea, chronic pelvic pain, infertility), former diagnoses, and/or clinical history will provide baseline population prevalence levels.

Methodology:
We conducted a prospective observational study for two months (July-August 2018) at a high-volume gynaecology-focused ultrasound practice in Sydney, Australia. Clinical history, indication for basic TVS, and TVS findings were documented for consecutive patients. Patients who had a history of hysterectomy or who underwent a transabdominal ultrasound were excluded. In addition to visualization of the uterus and ovaries, POD obliteration was assessed using a real-time TVS technique called the sliding sign. Categorical variables are presented as frequencies and valid relative frequencies, based on non-missing values. Continuous variables following the normal distribution are presented as mean (standard deviation), or median (1st, 3rd quartile) when normality was not met. Normality was tested graphically, with p-p plots. Associations between two categorical variables were tested with Pearson's chi-square test or Fisher's exact test, when predicted counts were less than five. Significance was set at alpha=0.05. All statistical tests were performed with IBM SPSS V25.0.

Results:
During the study, 1037 underwent ultrasound. After excluding patients who underwent a transabdominal ultrasound (54, 5.2%) and those without a uterus (12, 1.2%), 971 were eligible. The prevalence of a negative sliding sign, i.e. POD obliteration, was 67/971 (6.9%), whereas for those low-risk for endometriosis, the prevalence was 28/612 (4.6%). In those with an endometriosis-related indication or risk factors for endometriosis, the prevalence was 39/359 (10.9%), which was a statistically significant difference when compared to the low-risk for endometriosis population (p=0.001). Endometriomata and adenomyosis were commonly seen in low-risk for endometriosis women with a negative sliding sign (10.7% and 21.4%, respectively).

Conclusion:
We have shown that the prevalence of POD obliteration on ultrasound evaluation in a general and low-risk population is low, but not negligible.

Keywords : endometriosis; ultrasound; sliding sign; pouch of Douglas
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