

Sonohysterography vs 3D ultrasound for the diagnosis of uterine anomalies: a prospective blinded study of 500 consecutive women

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Introduction: Sonohysterography (SHG) is widely used for the diagnosis of intrauterine pathology. We investigated, as a prospective blinded study, the accuracy of SHG, compared to three-dimensional ultrasound (3D US), in detecting uterine anomalies.

Material and methods: 500 consecutive women who were referred for SHG because of infertility (n=274) or for the investigation of irregular uterine bleeding or abnormal endometrial appearance (control, n=226) also underwent 3D US for the diagnosis of uterine anomalies. Uterine anomalies were defined by the American Society of Reproductive Medicine criteria. Sensitivity, specificity, positive and negative predictive powers of SHG compared to 3D US were measured. Cohen's Kappa was used to analyze the extent to which the two tests agree, correcting for chance agreement.

Results: 122 of the 500 women were diagnosed by 3D US to have uterine anomalies. Arcuate uterus was the most frequent anomaly (n=89) and the others were partial or complete septated uterus, didelphys, and unicornuate uterus. The prevalence of anomalies was significantly higher in the infertile group (31%) compared to the non-infertile group (16.4%; chi-squared = 14.4, $p < .001$). Using the 3D US as the gold standard, the SHG had sensitivity, specificity, positive and negative predictive powers of 70.6%, 99.5%, 98.4%, and 88.3% for the infertile women (Kappa = 0.760; $p < .001$), and 67.6%, 99.5%, 96.2%, and 94% for the non-infertile group (Kappa = 0.761; $p < .001$), respectively.

Conclusions: 3D US allow precise recognition of uterine anomalies by visualizing both the uterine cavity and the fundal uterine contour at the coronal plane. For diagnosing uterine anomalies, SHG, a less accurate and minimally invasive diagnostic procedure, could be avoided in most cases.