

Mullerian Duct Anomalies (MDAs) and miscarriages in secondary infertility. A prospective study of the association between miscarriages and MDAs using strict criteria

Introduction: The risk of miscarriage is increased by the presence of certain uterine malformations. The precise correlation has been difficult to assess due to changing technologies and inconsistent diagnostic criteria. 3D ultrasound has become a readily available and accurate technique to assess MDAs. Using strict criteria the presence and classification of MDA using 3D sonohysterography was performed in patients with secondary infertility. The patients' history of miscarriages was documented and correlations were performed to determine significant associations.

Methods: This prospective study selected 1329 consecutive patients undergoing full initial imaging infertility investigations at an academically-oriented private practice from October 2010 to March 2011. All patients had previous pregnancies, not electively terminated. The patients provided obstetrical histories. All MDAs were diagnosed using strict ASRM criteria. Chi Square Tests of Independence and one-way ANOVA and were performed to determine if there was significant difference in the mean number of miscarriages between individuals in each of 4 groups, no MDA, arcuate, septate and unicornuate/bicornuate/didelphys.

Results: Of 1329 consecutive patients investigated for secondary infertility, 887 (66.7%) had no MDA, 393 (29.6%) had an arcuate deformity, 34 (2.6%) septate and 15 (1.1%) unicornuate/didelphys/bicornuate. There was a statistically significant difference in proportions of miscarriages between no MDA and the others [$F(3,1325)=7.38, P < 0.01$]. All the MDA groups had miscarriage rates higher than those with no MDAs.

	No MDA	Arcuate	Septate	Uni/Bi/Didel	Significance
# of patients	887	393	34	15	
Mean # misc	0.83	1.15	1.18	1.00	P < 0.01
% with misc	48.3%	66.7%	64.7%	66.7%	P < 0.01

Conclusions: This is the first prospective study using strict criteria to show that patients with all commonly seen MDAs, including arcuates, have increased rates of miscarriage. There was no significant difference between miscarriage rates between arcuates and septate uteri. Further investigation to determine the clinical implications of this data is warranted.