

O-197 Wednesday, October 10, 2018 11:45 AM

ONLY PATIENTS WITH OBVIOUS ADENOMYOSIS ON THREE-DIMENSIONAL ULTRASOUND (3D US) ARE AT INCREASED RISK OF CLINICAL LOSS FOLLOWING FROZEN EMBRYO TRANSFER.

S. A. Neal,^{a,b} L. R. Goodman,^a S. Morin,^{a,b} M. D. Werner,^a N. Gueye,^c A.W. Tiegs,^{a,b} P. Pirtea,^a R. Scott.^a ^aIVIRMA, Basking Ridge, NJ; ^bSidney Kimmel Medical College, Thomas Jefferson University, Philadelphia, PA; ^cRMA Pennsylvania, Allentown, PA.

OBJECTIVE: Traditionally, the diagnosis of adenomyosis has been reserved for histologic specimens, making it challenging to evaluate its association with reproductive outcomes. MRI has emerged as a non-invasive diagnostic tool, but it remains expensive and impractical for routine use. Given its low cost and widespread availability, ultrasound has been proposed as an alternative imaging modality but its interpretation is subjective. The aim of this study is to determine if adenomyosis as diagnosed by 3D US is associated with clinical loss following frozen embryo transfer (FET).

DESIGN: Prospective observational study

MATERIALS AND METHODS: Between April and December 2017, patients planning to undergo FET of a single euploid embryo were recruited to undergo 3D US examination on the day prior to scheduled FET. Images were independently reviewed by five physicians and evaluated for adenomyosis on the basis of seven criteria: 1) increased myometrial thickness, 2) asymmetry of the uterine walls, 3) heterogeneous echotexture, 4) irregular endometrium-myometrium interphase, 5) intramyometrial cysts, 6) linear striations, and 7) presence of an adenomyoma. Fulfillment of any one criterion was sufficient to screen positive for adenomyosis. Patients with obvious adenomyosis, defined as those who were unanimously classified by the five reviewers as having adenomyosis, were identified and compared to those patients who were unanimously deemed to be free of adenomyosis. Analyses were also performed on patients for whom at least 4/5 reviewers agreed. Pregnancy outcomes were recorded prospectively and compared using chi square analysis or Fisher's exact test as appropriate.

RESULTS: Six-hundred-ninety-nine patients were enrolled in the study. Forty-eight were excluded on the basis of poor quality 3D US images. Reviewers reached a unanimous conclusion regarding 258 patients, 21 (8.1%) of whom were deemed to have adenomyosis. There was no difference in sustained implantation rates between the two groups. Patients with obvious adenomyosis were more likely to experience a clinical loss when compared to those without adenomyosis (23.8% vs. 6.3%, $P=0.03$). When expanding the groups to include all patients for whom at least 4/5 reviewers agreed, there were 461 patients. The prevalence of adenomyosis was significantly higher (15.4% vs. 8.1%, $P<0.01$) but the association with clinical loss was no longer present.

CONCLUSIONS: Adenomyosis on 3D US is associated with clinical loss following FET. However, this association is only present when five independent reviewers unanimously agree on the diagnosis, suggesting that the increased risk of clinical loss is restricted to the most obvious cases of adenomyosis. Further refinement of the ultrasound criteria for adenomyosis is needed to enhance the discriminatory ability of this imaging modality. References: 1. Puente JM, Fabris A, Patel J, et al. Adenomyosis in infertile women: prevalence and the role of 3D ultrasound as a marker of severity of the disease. *Reprod Biol Endocrinol* 2016;14(1).