



Reliability of 2D/3D transvaginal ultrasonographic (TVUS) features (MUSA) in diagnosing histological proven Adenomyosis using BCL6 biomarker in cases of reproductive failure

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Introduction

Endometriosis is likely present in short than half of infertile women. Laparoscopy was considered the gold standard for its diagnosis. However, TVUS has become the first-line imaging diagnostic tool for diagnosing adenomyosis, with MRI which is rather expensive technique has only a complementary role. Meanwhile the sensitivity and specificity of the different TVUS features has been assessed during perimenopausal rather than reproductive ages. BCL6 is looked at as a reliable single diagnostic biomarker at the endometrium level for the detection of endometriosis.

Patients and methods

Cases with repeated implantation failure / miscarriage

Cases had 2D/3D TVUS & endometrial biopsies

BCL6 results (above a cut-off HSCORE=1.4 is positive)

U/S features were revised

Results

The number of cases that had no 2D adenomyosis (MUSA) features were 25/ 137 (18.2%) of BCL6 positive cases. While if 3D features were added: only 9/137 (6.5%) will be left.

	Sensitivity	Specificity	PPV	NPV	MUSA Sen 2D	MUSA Spec 2D	MUSA Sens 3D	MUSA Spec 3D
Assymetry myometrial wall	33.1	68.2	62.5	38.9	57.2	71.9	59.2	53.4
Globular Uterus	34.6	74.4	68.1	41.8	55	80.2	-	-
Hypoechoic linear Striations	21.2	77.9	60.4	38.3	71.3	79.7	52.8	61.1
Heterogenous Myometrium	75.7	31.4	63.6	45	86	61.3	82.7	41.4
Myometrial cyst	49.3	59.5	66.3	42	72	62.7	58.2	54.3
Poor EMJ	20.6	85.7	70	40	58.6	71.5	87.8	56
Question Mark sign	12.4	92.9	73.9	39.7	75	92.3	-	-

Conclusion

The evaluation assessment figures are different from previously published by MUSA for these features which were pooled out in perimenopausal women undergoing hysterectomy. Depending on 2D only will miss out 18% of adenomyotic cases, while adding up 3D features have a good sensitivity of 93.5%. This work is the first research to test for using MUSA criteria in clinical setting in cases of reproductive failure with proven endometriosis at the level of the uterus using BCL6 biomarker. A drawback of this study is the retrospective analysis of the images that makes a prospective study is advised. Also, BCL6 as a biomarker has proven to be of a high sensitivity and specificity but definitely not 100%.