

Evaluating the Predictive Accuracy of a Structured Ultrasound Scoring System for Placenta Accreta Spectrum in a Tertiary Hospital in Indonesia

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Introduction

This study aims to validate the correlation between PAS ultrasound (US) staging and histopathological and macroscopic findings, with the goal of enhancing the predictive utility of US in PAS diagnosis and management .

Material and Methods

This retrospective study analysed 22 PAS patients (mean age 33.8 ± 5.2 years; mean parity 2.2) from 2023 to October 2024. PAS severity was scored using US staging, and cases were categorized histopathological as accreta, increta, or percreta. Macroscopic evaluation identified whether the placenta reached the cervix. Correlations between US staging, histopathology, and macroscopic findings were analyzed using Kruskal-Wallis tests.

Results

US PAS Stage correlated significantly with histopathology (p = 0.002), with higher stages indicating greater severity (increta, percreta). A significant correlation also existed between US PAS stage and placental reach to the cervix (p = 0.008).

Among individual US features, only “extension into the parametrial region” correlated significantly with histopathology (p = 0.034).

Discussion

A structured US scoring system, integrating multiple markers like parametrial extension and bladder wall interruption, significantly improves PAS diagnostic accuracy compared to isolated features, enabling better surgical planning and resource allocation. While individual US markers show limited reliability, our study highlights that standardized scoring models (e.g., FIGO-based) enhance sensitivity (>85%) and specificity (~90%) for high-grade PAS, though future multicentre studies are needed to address retrospective design limitations.

Conclusion

Structured ultrasound (US) scoring system enhances diagnostic accuracy, correlating significantly with histopathological and macroscopic outcomes, thus supporting its utility in preoperative planning for PAS management .

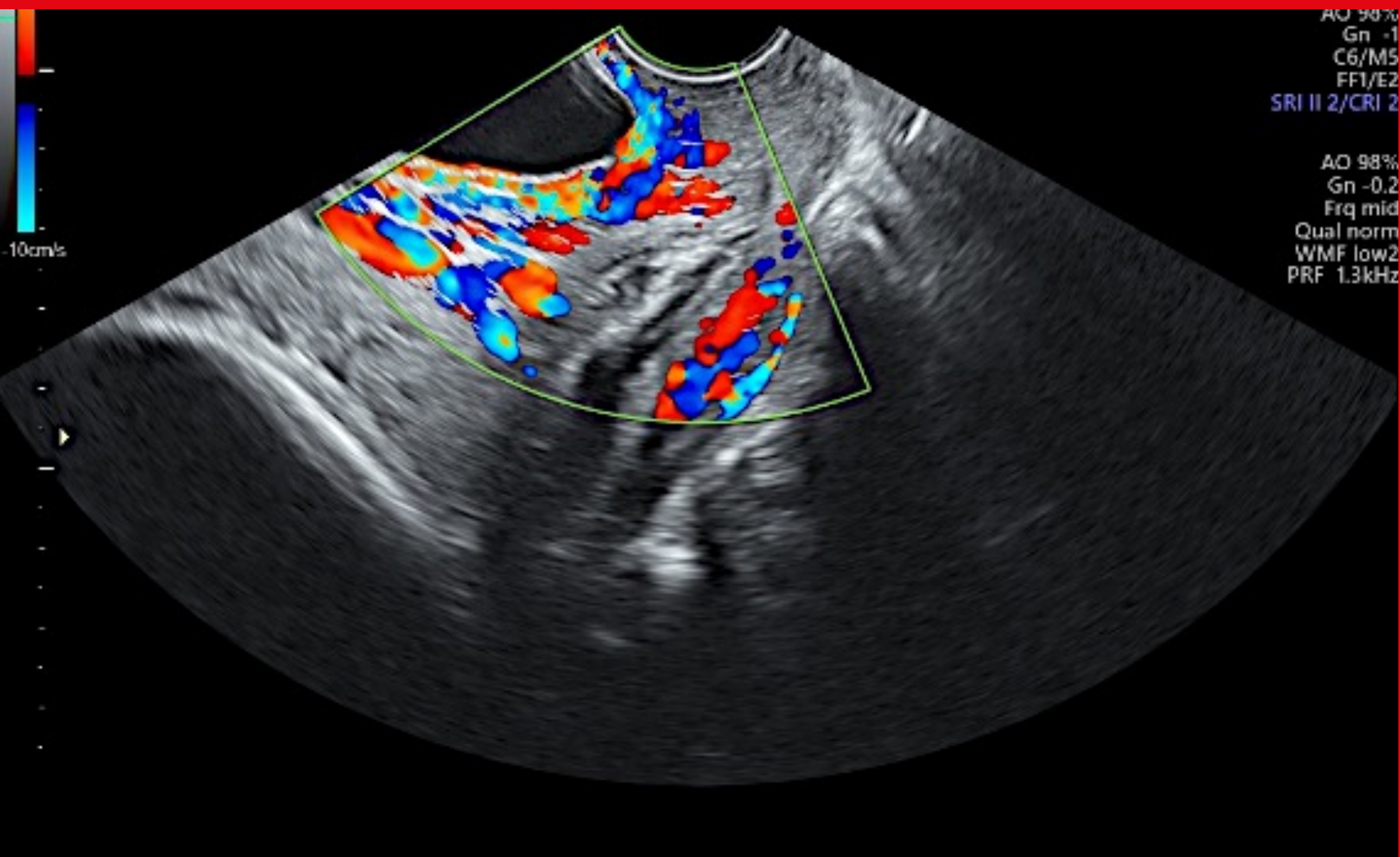


Figure 1. Ultrasound view of Uterovesical hypervascularity

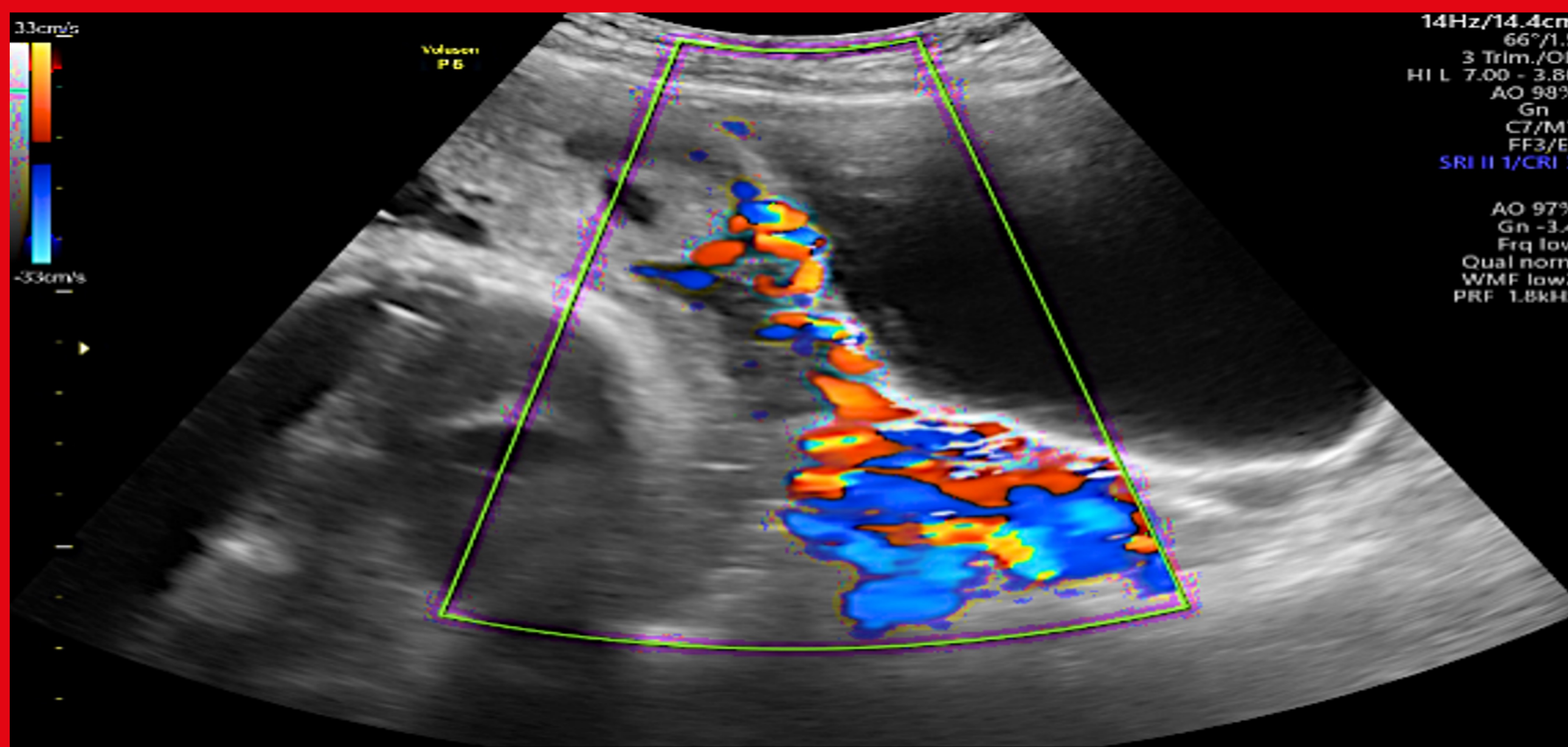


Figure 2. Increase vascularity inferior part in the lower uterine segment and Bladder wall interruption

US PAS	Value of Fisher Test	Histopathologic Finding Exact Sig. (2-sided)	Macroscopic Finding Exact Sig. (2-sided)
Uterovesical hypervascularity	0.494	1.000	0.167
Placental lacunae	0.848	1.000	0.309
Bladder wall interruption	0.953	0.821	0.378
Loss of clear zone	0.848	1.000	1.000
Evidence of inferior part of lower uterine segment extending into parametrial region	5.620	0.034	1.000

Figure 3. Correlation of individual ultrasound features with histopathological and macroscopic outcomes in PAS