

Introduction

- Routine fetal anatomy scans are long and complex examinations, requiring systematic acquisition of numerous standard views across all organ systems [1]
- Completing the views while staying vigilant for abnormalities imposes a high cognitive load on sonographers and interpreting physicians, a potential contributor to operator strain and burnout [2]
- Artificial intelligence (AI)-based assistance has been proposed to ease this burden, yet real-world evidence from routine clinical practice remains scarce [3]

What is the impact of integrating AI-based view detection into routine fetal anatomy scans on clinicians' scanning efficiency, confidence and workload?

Methods

Study design:

- Prospective pilot study at a single maternal fetal medicine (MFM) practice in the US
- Singleton fetal anatomy scans (18w0-24w6) compared before and after AI integration
- Scans performed by sonographers and interpreted in real time by MFMs
- Exams reviewed by two MFMs for completeness

Assessments:

- Scan duration was manually timed by an external observer
- Sonographers and MFMs completed:
 - A 6-point Likert scale for confidence in exam completeness
 - A 9-point Paas scale for mental load related to completeness [4]

AI Software:

- The B-Right Views software (BrightHeart, Paris, France) analyzes fetal ultrasound images and video clips and tracks completion of required standard views during the scanning session

Outcomes:

- All endpoints were compared pre vs. post-AI
- Exam completeness (Fisher's exact test)
- Scan duration (Welch's t-test)
- Sonographer and MFM confidence and mental load related to exam completeness (Welch's t-test)

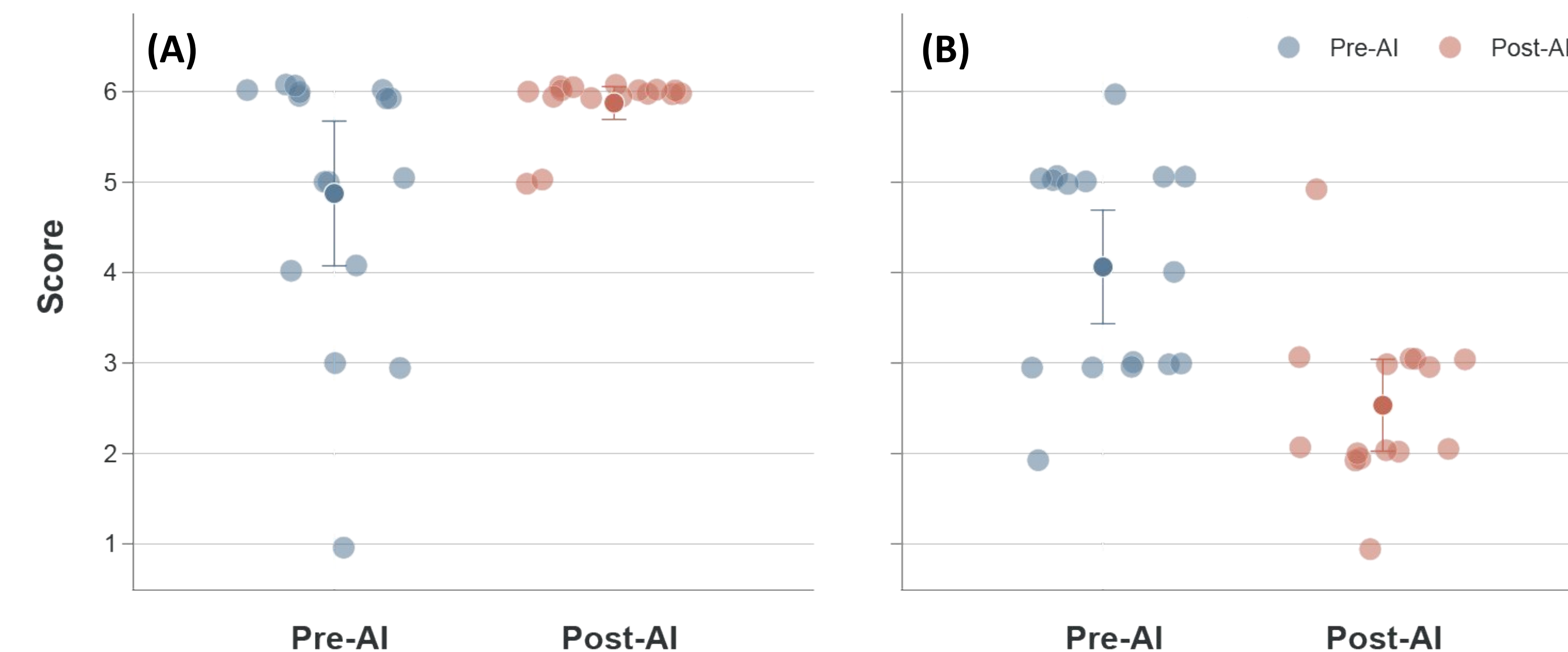
- [1] Salomon et al. *Ultrasound Obstet. Gynecol.* 2022.
[2] Younan et al. *Sonography* 2022.
[3] D'Alberti et al. *eClinicalMedicine* 2025.
[4] Paas J. *Educ. Psychol.* 1992.

Results

Characteristics of included cases

Case characteristics	Value
Ultrasound examinations (n)	
Pre-AI implementation	16
Post-AI implementation	16
Gestational age mean [95% CI] (weeks)	
Pre-AI implementation	21.0 [20.7, 21.2]
Post-AI implementation	20.9 [20.5, 21.3]
Sonographers (n)	8
Interpreting MFMs (n)	10

Figure (A) Sonographer confidence and (B) MFM mental load related to exam completeness



	Pre-AI	Post-AI	p-value
Complete exams (%)	56.2 [33.2, 76.9]	93.8 [71.7, 98.9]	0.037
Scan duration (mins)	44.5 [39.2, 49.9]	40.9 [37.0, 44.8]	0.25
Sonographer			
Confidence	4.9 [4.1, 5.7]	5.9 [5.7, 6.1]	0.019
Mental load	4.2 [2.8, 5.6]	1.6 [1.2, 2.1]	0.0014
MFM			
Confidence	5.2 [4.5, 5.8]	5.8 [5.4, 6.2]	0.11
Mental load	4.1 [3.4, 4.7]	2.5 [2.0, 3.0]	< 0.001

- 67% increase in complete exams ($p = 0.037$)
- 20% increase in sonographer confidence in exam completeness ($p = 0.019$) (Figure A)
- 39% decrease in MFM mental load related to exam completeness ($p < 0.001$) (Figure B)

Conclusions

- AI assistance improved exam completeness by 67%, increased sonographer confidence, and reduced clinician mental load, without increasing scan duration
- By supporting both sonographers and physicians in real time, AI could ease the burden of routine fetal anatomy screening