

Objectives: The prenatal diagnosis of arthrogryposis multiplex congenita (AMC) remains challenging, particularly in isolated limb-predominant forms, in which fetal movements may still be perceived, and contractures may be subtle during routine ultrasound examinations. Because fetal movement assessment is subjective and poorly standardized, the recognition of persistent non-physiological joint postures may provide a more reliable diagnostic approach.

Methods: We herein propose a practical posture-based sonographic protocol for the prenatal evaluation of suspected AMC. The approach consists of a systematic distal-to-proximal assessment of fetal joints, beginning with the feet and hands, followed by large joints, spinal alignment, digit configuration, and facial profile. Particular attention is given to persistent abnormal postures, such as clubfoot, rocker-bottom feet, clenched hands with overlapping fingers, or fixed joint positions. Suspicious postures are reassessed during the examination to distinguish true joint contractures from transient positional limitations.

Results: Illustrative cases demonstrate that systematic posture analysis allows earlier recognition of characteristic patterns of joint contractures and facilitates differentiation between isolated limb involvement and AMC. The integration of facial and palatal assessments, together with a global anatomical survey and targeted genetic testing, improves diagnostic confidence and counselling.

Conclusions: A structured posture-based ultrasound approach may improve prenatal recognition of AMC and offers a practical framework for the systematic evaluation of fetal joint contractures.

Declarations of interest: none

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A posture-based stepwise ultrasound approach for prenatal detection of arthrogryposis multiplex congenita

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