

The fetal anal “target sign” for prenatal detection of anorectal malformations: experience from a tertiary referral center

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Introduction

Prenatal diagnosis of anorectal malformations (ARM) remains challenging, with low detection rates. Direct visualization of the fetal anus as the “target sign” (TS) has been described, yet routine assessment is not consistently incorporated into anomaly scans. We aimed to describe our experience following the implementation of routine assessment of the fetal anus during US scans in a tertiary center.

Methods

This retrospective study included patients undergoing routine or targeted anomaly scans between 2018 and February 2026. Fetal anus assessment was performed between 17-39 weeks of gestation using a tangential perineal view to identify the anal TS. Visualization status was recorded and correlated with postnatal findings.

Results

A total of 1019 fetuses were included. Perineal visualization was successful in 1014 scans. The TS was absent in 29 cases, raising suspicion for ARM. ARM was confirmed in 13 newborns and in 3 cases after postmortem evaluation following pregnancy termination. Confirmation was unavailable in 9 cases due to loss to follow-up or lack of postmortem examination. In 4 cases, ARM was ruled out after birth or postmortem. Among 985 fetuses with normal prenatal anus assessment, postnatal anatomy was normal in 980. In the remaining 5 cases, ARM was diagnosed postnatally. A retrospective review of stored clips showed that the TS had been misinterpreted as normal. The TS showed sensitivity of 76.2%, specificity of 99.6%, PPV of 80.0%, and NPV of 99.5% for ARM detection.

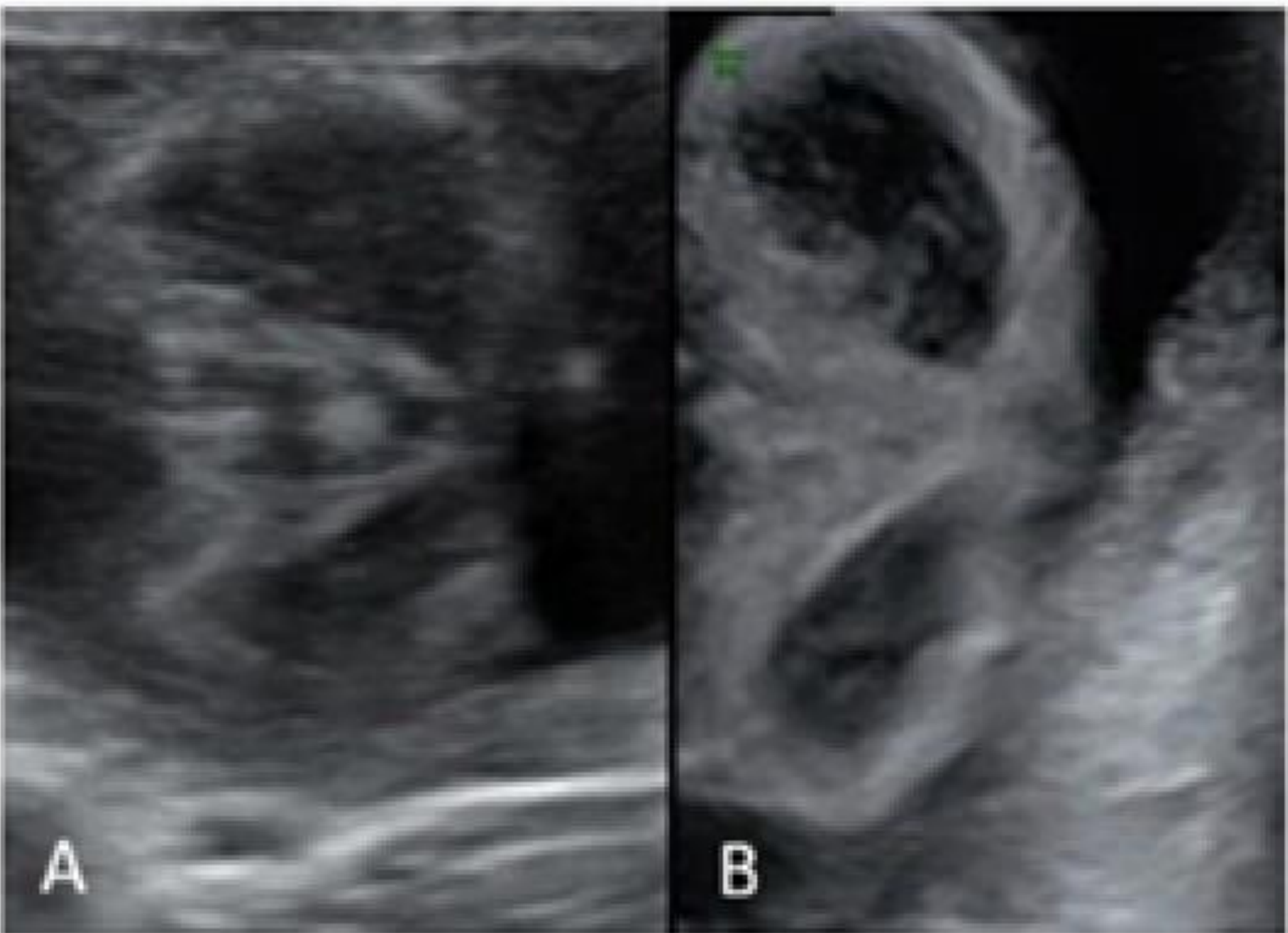


Figure 1: Fetal anal “target sign”.
(A) Normal appearance. (B) Absence of the sign in anorectal malformation.

Conclusion: Routine assessment of the fetal anus during prenatal US is highly feasible. The absence of TS shows high diagnostic accuracy for ARM. Incorporating fetal anus evaluation into anomaly scans may improve prenatal diagnosis.