

Prenatal Diagnosis and Postnatal Outcomes of Isolated Echogenic Foci in the Fetal Upper Abdomen

Symone McClain, Sun Kwon Kim, Nicolina Smith, Kyra Orton, D'Angela Pitts, Raminder Khangura

Introduction

Advances in ultrasonographic technology have resulted in an increased detection rate of isolated fetal echogenic foci (iFEF) in the upper fetal abdomen during routine prenatal examinations. Although these findings are relatively common, they nonetheless often necessitate further evaluation to rule out potentially associated abnormalities and to provide adequate counseling when problems are identified.

Regardless of the underlying etiology of foci, counselling expectant parents regarding these findings is critical. However, this counseling process has the potential to induce considerable and often unwarranted anxiety in many expectant parents, particularly given that most echogenic foci are benign and lack clinical significance.

Primary Objective: This study aimed to assess maternal and fetal factors associated with iFEF and their postnatal outcomes.

Methods

A retrospective chart review was conducted at an urban tertiary care center, analyzing cases of iFEF from Jan 2022 to Dec 2024. Maternal variables included age, race, body mass index,]and placental pathology. Fetal factors reviewed were gestational age at detection, location, size of iFEF, and incidence of fetal growth restriction. Postnatal evaluation included neonatal intensive care unit (NICU) admissions, repeat imaging, laboratory assessments, and preterm deliveries.

Results

A total of 25 individuals with singleton pregnancies had iFEF identified during this study.

- Almost all the iFEF were single lesions (n=21; 84%), with only 4 (16%) occurrences of multiple lesions foci.
- Most of the iFEF were identified in the left upper quadrant (n=23; 92%)
- Only 6 of the 25 neonates had a postnatal evaluation.
- There were 2 neonates who were admitted to the NICU after delivery, both preterm.
- Postnatal imaging, was done for 3 neonates, and all showed resolved echogenic foci.

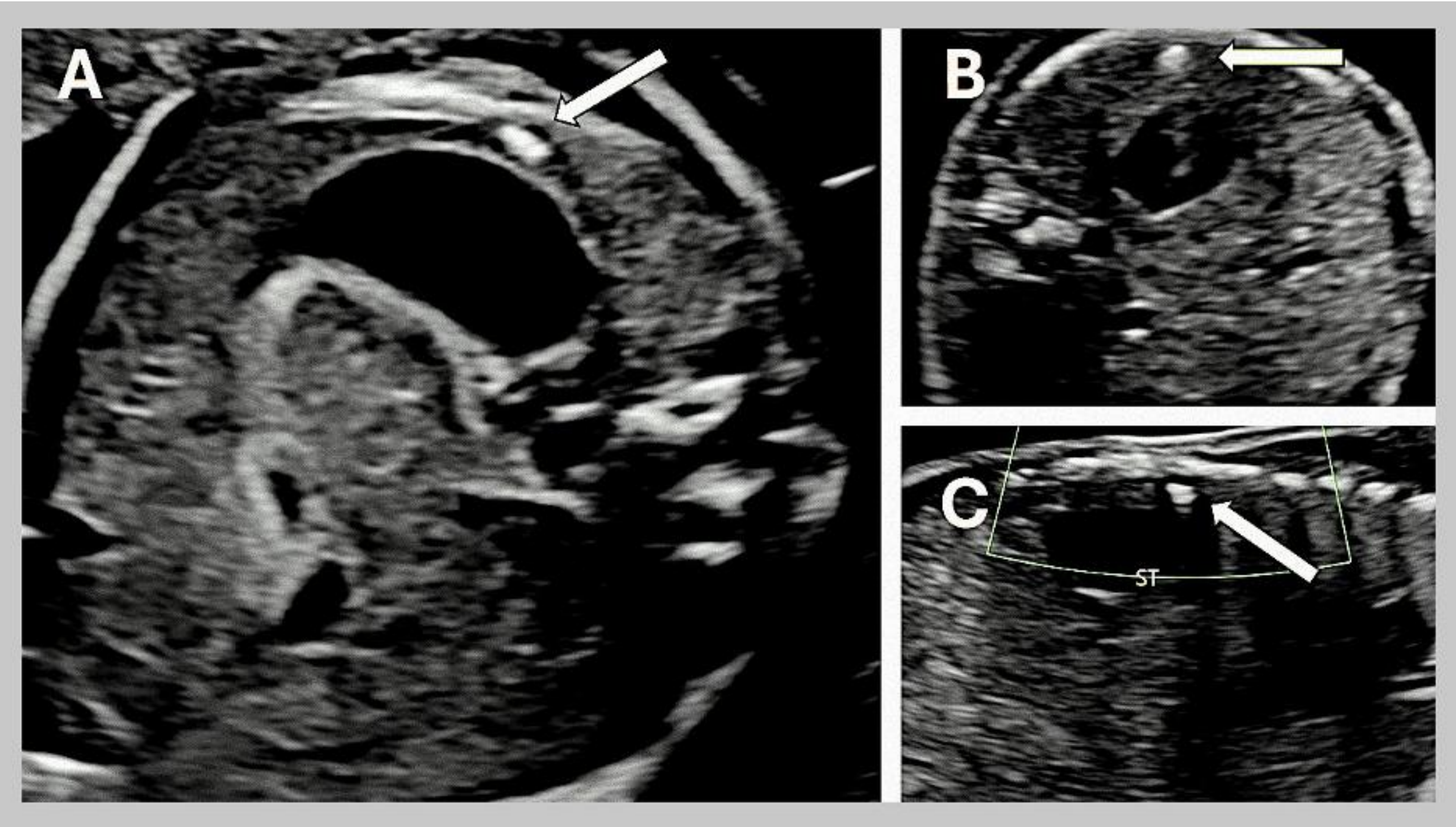


Figure 1: iFEF identified in the left upper quadrant of the fetal abdomen (A), adjacent to the stomach (B) and inferior to the diaphragm (C).

Table 1. Case descriptions and summary of perinatal findings

Gestational age at diagnosis	Number of foci	Location	Genetic studies: NIPT and cytogenetics	Obstetric outcome	Postnatal follow-up duration
19w4d	1	LUQ	Low risk NIPT	--	--
19w6d	1	LUQ	Low risk NIPT	--	--
19w6d	1	LUQ	Low risk NIPT	PTD, NICU admission	Normal imaging studies (day of delivery)
20w0d	1	LUQ	Low risk NIPT	--	--
20w0d	1	LUQ	n.d.	--	--
20w0d	2	LUQ	Low risk NIPT	--	--
20w1d	1	LUQ	Low risk NIPT	--	Normal laboratory tests (day of delivery)
20w1d	1	LUQ	Low risk NIPT	--	Normal laboratory tests (day of delivery)
20w1d	1	LUQ	n.d.	--	--
20w2d	1	LUQ	Low risk NIPT, negative cytogenetics	--	Normal imaging studies (1 day after delivery)
20w2d	1	LUQ	Low risk NIPT	--	--
20w4d	1	LUQ	Low risk NIPT	--	--
20w4d	2	LUQ	Low risk NIPT, negative cytogenetics	--	Normal laboratory tests (day of delivery)
20w5d	1	LUQ	n.d.	--	--
21w1d	1	LUQ	Low risk NIPT	--	--
21w1d	1	LUQ	Low risk NIPT	--	--
21w1d	2	LUQ	Low risk NIPT	Preterm delivery	Normal imaging studies (2 weeks postpartum)
21w4d	1	Midline diaphragm	Low risk NIPT	PTD, NICU admission	--
21w4d	2	LUQ	Low risk NIPT	--	--
22w6d	1	LUQ	Low risk NIPT	--	--
24w6d	1	LUQ	Low risk NIPT	--	--
30w1d	1	LUQ	Low risk NIPT	--	--
31w4d	1	RUQ	Low risk NIPT	Fetal growth restriction	--
31w6d	1	LUQ	Low risk NIPT	--	--
32w4d	1	LUQ	Low risk NIPT	--	--

d, day; LUQ, left upper quadrant; n.d., no data; NIPT,noninvasive prenatal; test ; PTD, preterm delivery, ; RUQ, right upper quadrant; w, week.

Conclusion

Prenatally identified iFEF of the upper abdomen appear benign and are not associated with adverse outcomes.