

Antenatal diagnosis and outcome of corpus callosum agenesis

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Introduction

Agenesis of the corpus callosum (ACC) is a common congenital brain malformation with a variable clinical spectrum. It may occur in isolation or be associated with other central nervous system or systemic anomalies, often indicating a poorer prognosis. Advances in prenatal imaging—particularly mid-sagittal ultrasound and fetal MRI—have improved the detection and characterization of ACC during pregnancy. Indirect signs such as mild ventriculomegaly or absence of the cavum septi pellucidi often prompt further evaluation. While isolated ACC can result in normal development, some cases still carry risks of neurodevelopmental disorders. In contrast, syndromic or complex forms are typically linked to adverse outcomes. This study aims to assess prenatal ultrasound findings and postnatal outcomes in fetuses diagnosed with ACC, emphasizing the role of comprehensive antenatal imaging in guiding parental counseling and clinical decisions.

Objective

To assess antenatal sonographic findings and postnatal outcomes in fetuses diagnosed with agenesis of the corpus callosum (ACC).

METHODS

This retrospective study spans two years, from 2021 to 2023, and includes six cases of diagnosed ACC.

CONCLUSIONS

Mid-sagittal views obtained during routine antenatal ultrasound in the first and second trimesters are crucial for screening for ACC. The detection of indirect markers, such as mild ventriculomegaly, should prompt referral to a specialized center for further evaluation, including fetal MRI. Comprehensive prenatal imaging enables accurate diagnosis and prognosis, facilitating informed parental counseling and management decisions.

RESULTS

The mean maternal age was 32 years, with an average gestational age at diagnosis of 23 weeks. The primary sonographic finding was mild ventriculomegaly (Figure 1). Additional intracranial anomalies were identified in four cases, including Dandy-Walker malformation, Arnold-Chiari type II malformation, agenesis of the interventricular septum, and polymalformative syndromes. Fetal MRI was performed in four out of six cases, confirming the diagnosis in all instances and providing better visualization of associated abnormalities. Pregnancy termination (TOP) was carried out in five cases due to severe associated abnormalities and poor prognosis. One patient chose to continue the pregnancy, resulting in the birth of an infant with isolated ACC. At birth, the neonate exhibited normal neurological findings, confirmed by postnatal MRI. However, the child later developed severe epilepsy and significant psychomotor delay during infancy.

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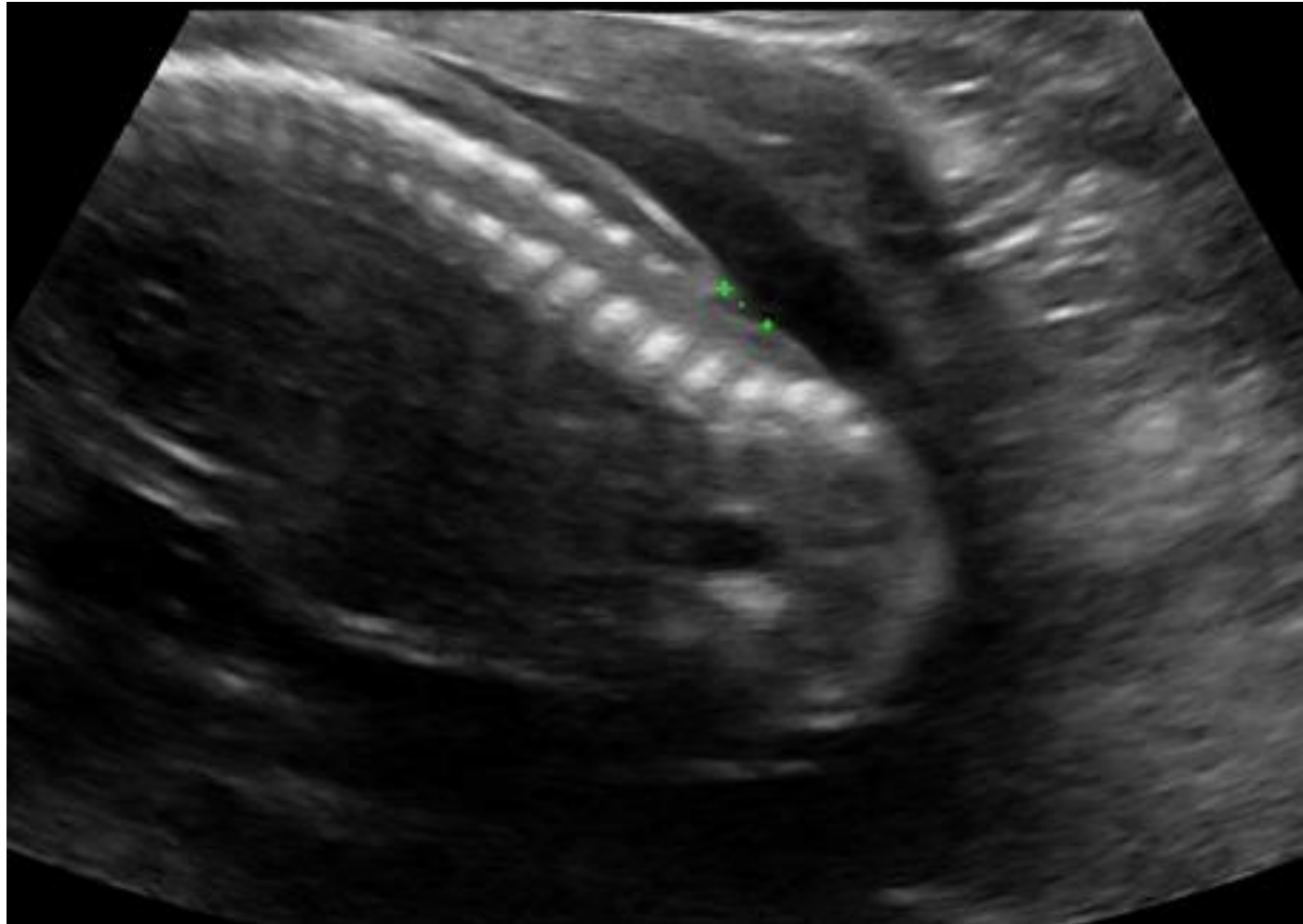


Figure 3: Spina Bifida included into a polymalformative syndrome



Figure 1: dilated ventrives revealing CCA.

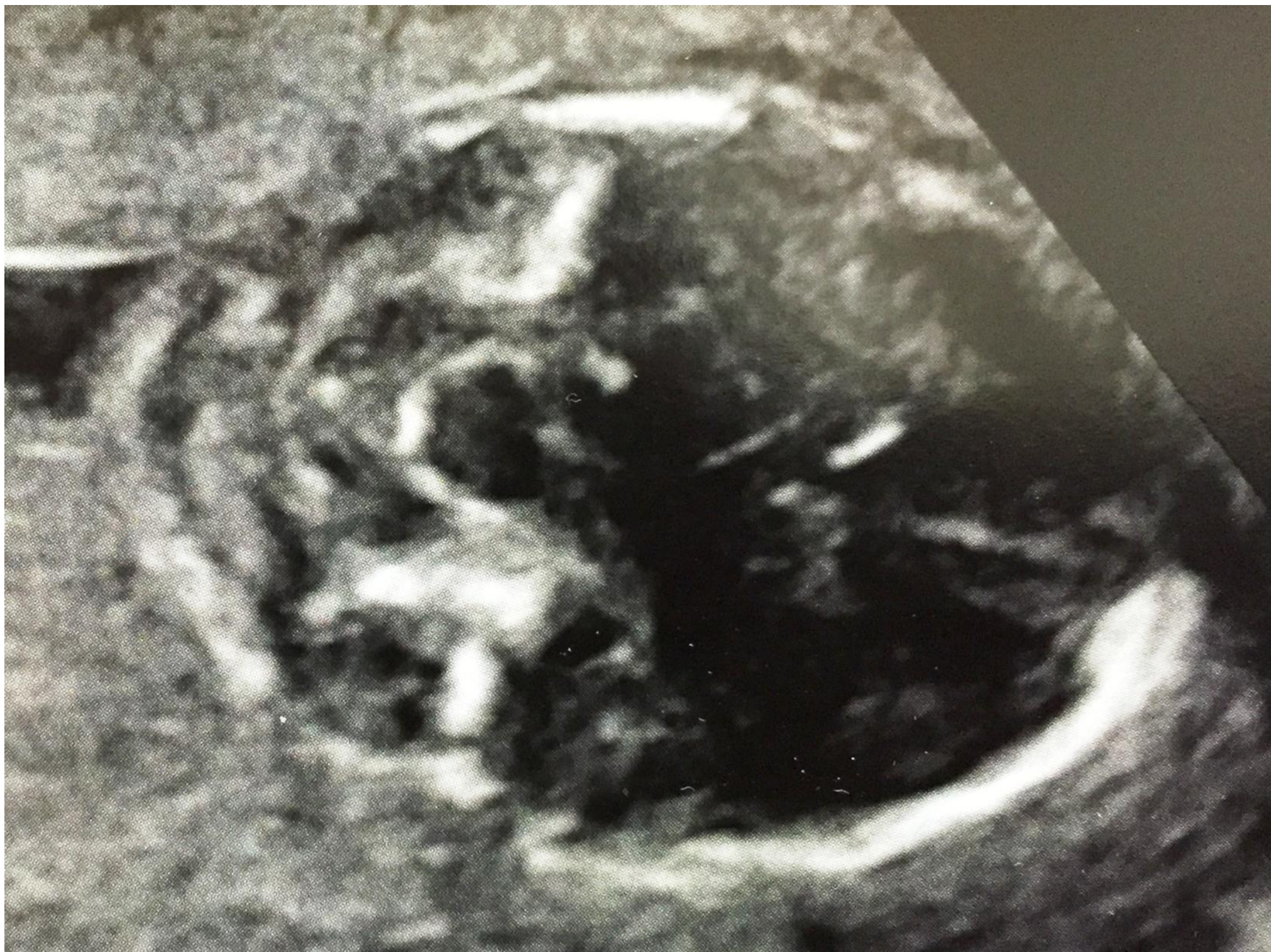


Figure 2: Dandy Walker syndrome