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Dandy–Walker complex before 24 weeks: diagnostic uncertainty, counselling challenges, and favourable outcome — a case report

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Introduction

We present a case of Dandy–Walker complex diagnosed at 20 weeks’ gestation, highlighting the challenges of differentiating between Dandy–Walker malformation, Blake’s pouch cyst, and vermian hypoplasia, and the implications for prenatal counselling in settings where decisions regarding pregnancy continuation or termination must be made before 24 weeks’ gestation

Clinical case

Routine screening of a low-risk 32-year-old primigravida revealed a posterior fossa abnormality

- **20+0 w neurosonography** - a “keyhole” posterior fossa with open 4th ventricle; small vermis (anteroposterior diameter (AP) 4 mm, craniocaudal diameter (CC) 7 mm), brainstem–vermis (BV) angle 47°; the corpus callosum 13 mm. Findings consistent with vermian and corpus callosum hypoplasia.
- **21 w MRI** – the corpus callosum 17mm, small cranially rotated vermis (AP 4 mm, CC 7 mm); open 4th ventricle, increased tegmentovermian angle (42°), and vermian “tail sign”. Findings suggestive of vermian hypoplasia.
- **Genetic testing** - no abnormalities
- **23 w neurosonography** – the corpus callosum 22 mm; persistent vermian hypoplasia (AP 6 mm, CC 11 mm) with cranial rotation and an open 4th ventricle
- **30 weeks neurosonography** - persistent vermian hypoplasia; enlarged cisterna magna (15 mm) with “keyhole” appearance; mild ventriculomegaly (12 mm).
- **36 w MRI** – the corpus callosum 38 mm; small cranially rotated vermis (CC 12 mm, AP 10 mm); open 4th ventricle; BV angle 52°; vermian “tail sign”; enlarged posterior fossa; ventriculomegaly 11 mm.
- **Outcome** - normal cranial ultrasound – no structural, no neurological impairment at 4 months of age, consistent with age-appropriate development

Conclusion

This case highlights the diagnostic challenges of posterior fossa anomalies and suggests that favourable outcomes may reflect vermian malrotation rather than true hypoplasia, with important implications for prenatal prognostic counselling

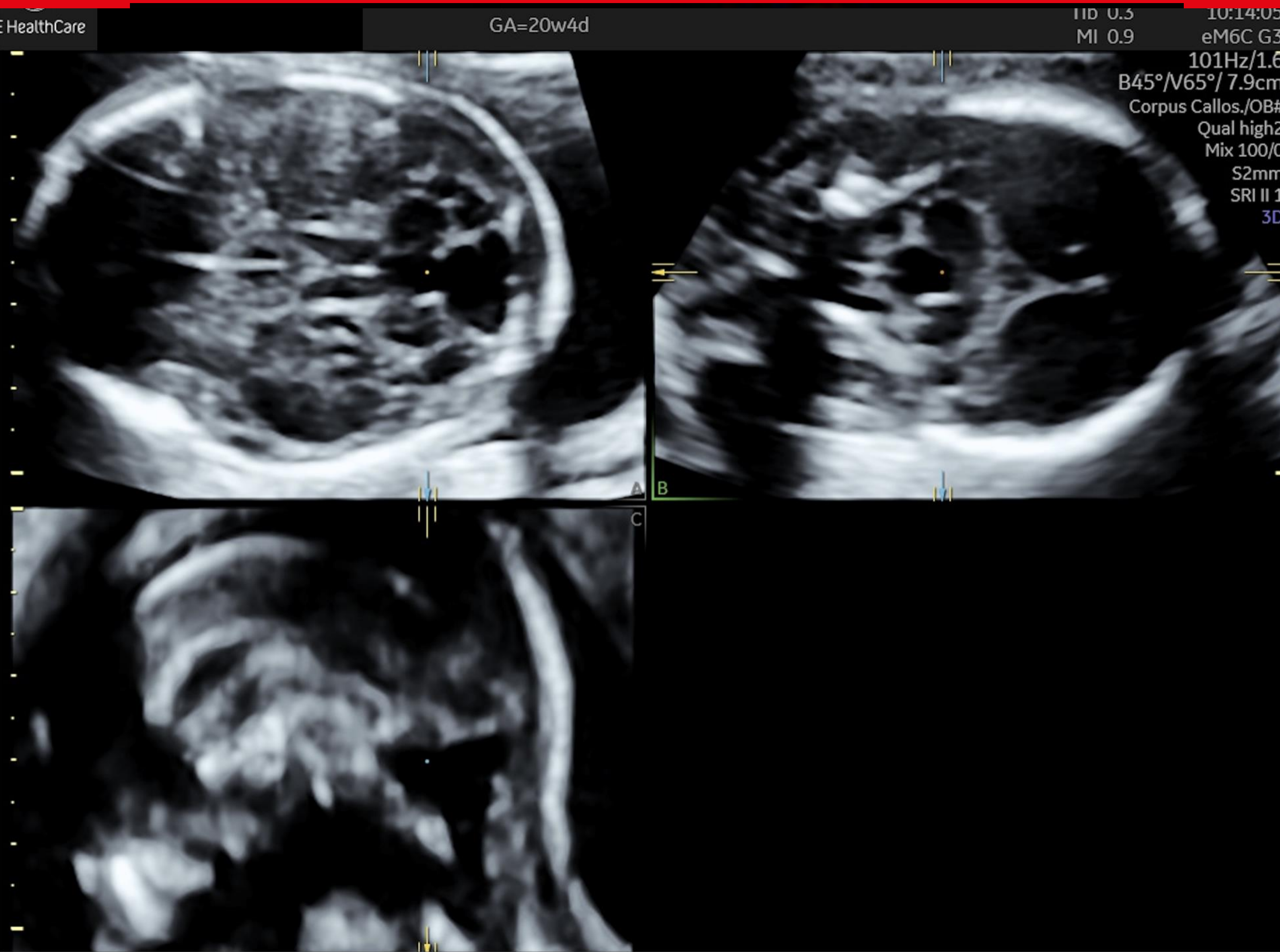


Figure 1. Multiplanar 3D ultrasound of the fetal posterior fossa at 20 weeks, showing the keyhole appearance and open fourth ventricle.



Figure 2. Midsagittal view of the posterior fossa at 23 weeks showing the small, cranially rotated vermis.