

3D Ultrasound-Aided Diagnosis of Fetal Intracranial Teratoma: A Case Report

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Background

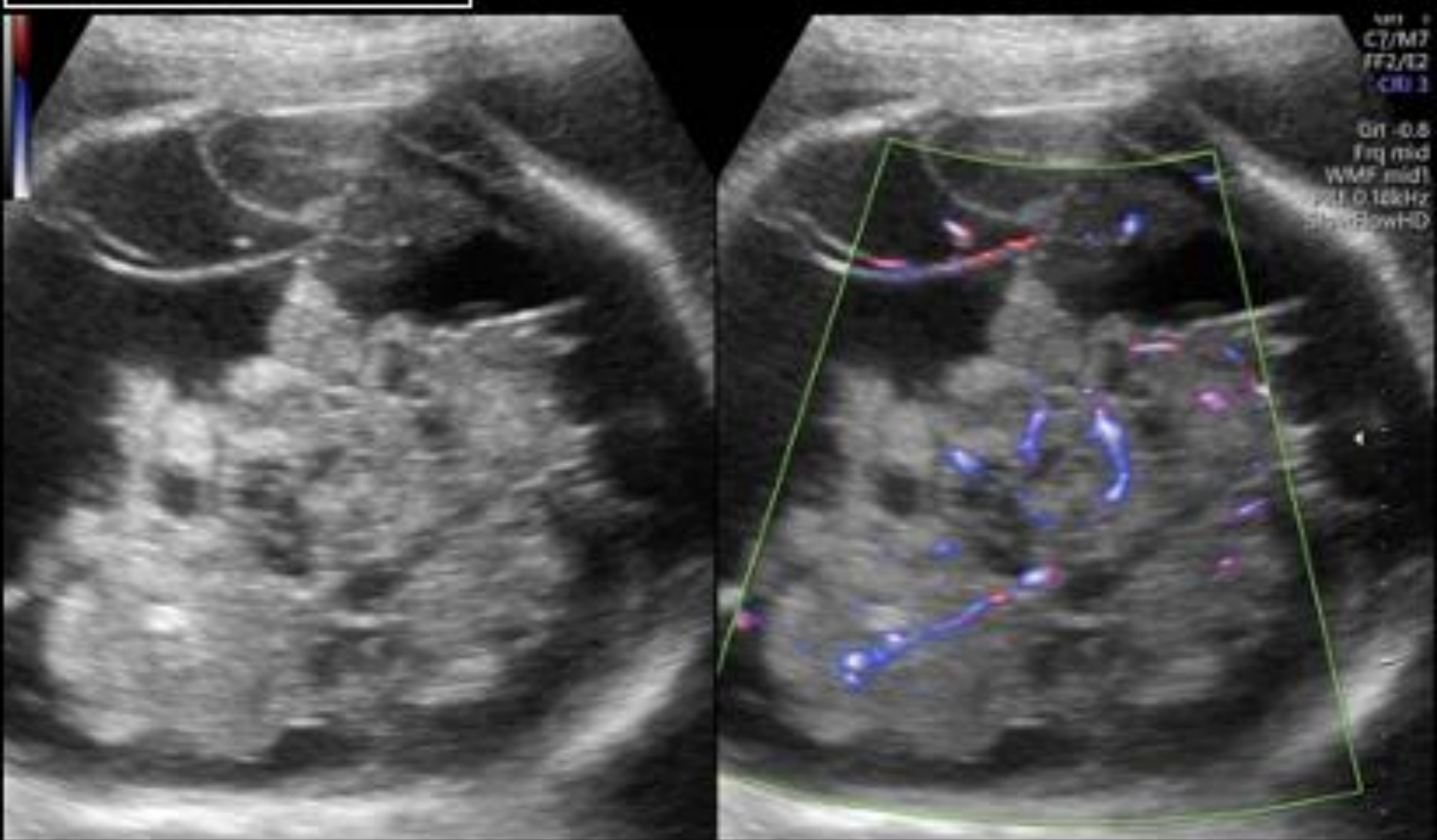
- Intracranial teratomas are rare and aggressive tumors from pluripotent stem cells, posing significant risks to fetal development.
- While prenatal ultrasound (US) effectively identifies intracranial abnormalities, three-dimensional (3D) US techniques can enhance diagnostics by delineating the anatomical relationships and extent of the lesion.

Case presentation

- A 28-year-old woman, G3P1011, with a previous child with Tetralogy of Fallot, polydactyly, and a 2q13 deletion.
- In the current pregnancy, a viability ultrasound at 13 weeks revealed a normal fetal cranium, and non-invasive prenatal testing was low risk (maternal serum alpha-fetoprotein testing not performed).
- Second-trimester obstetric ultrasound : enlarged head and abnormal brain anatomy.
- Fetal echocardiography showed normal intracardiac structure but a tortuous aortic arch.
- A detailed fetal anatomic survey at 22 weeks: marked macrocephaly and remaining biometry consistent with gestational age.
- The intracranial anatomy was replaced by disorganized tissue with abnormal vasculature, multiple septations, calcifications, and focal fluid collections. A multilobulated mass with a maximum diameter of 5.2 cm eroding through the face and orbital hypertelorism noted, while the rest of the facial anatomy was sub-optimally visualized. The remaining anatomic findings were unremarkable.
- The patient was counseled regarding the suspected diagnosis of a large intracranial teratoma and was referred for management of complicated termination of pregnancy.

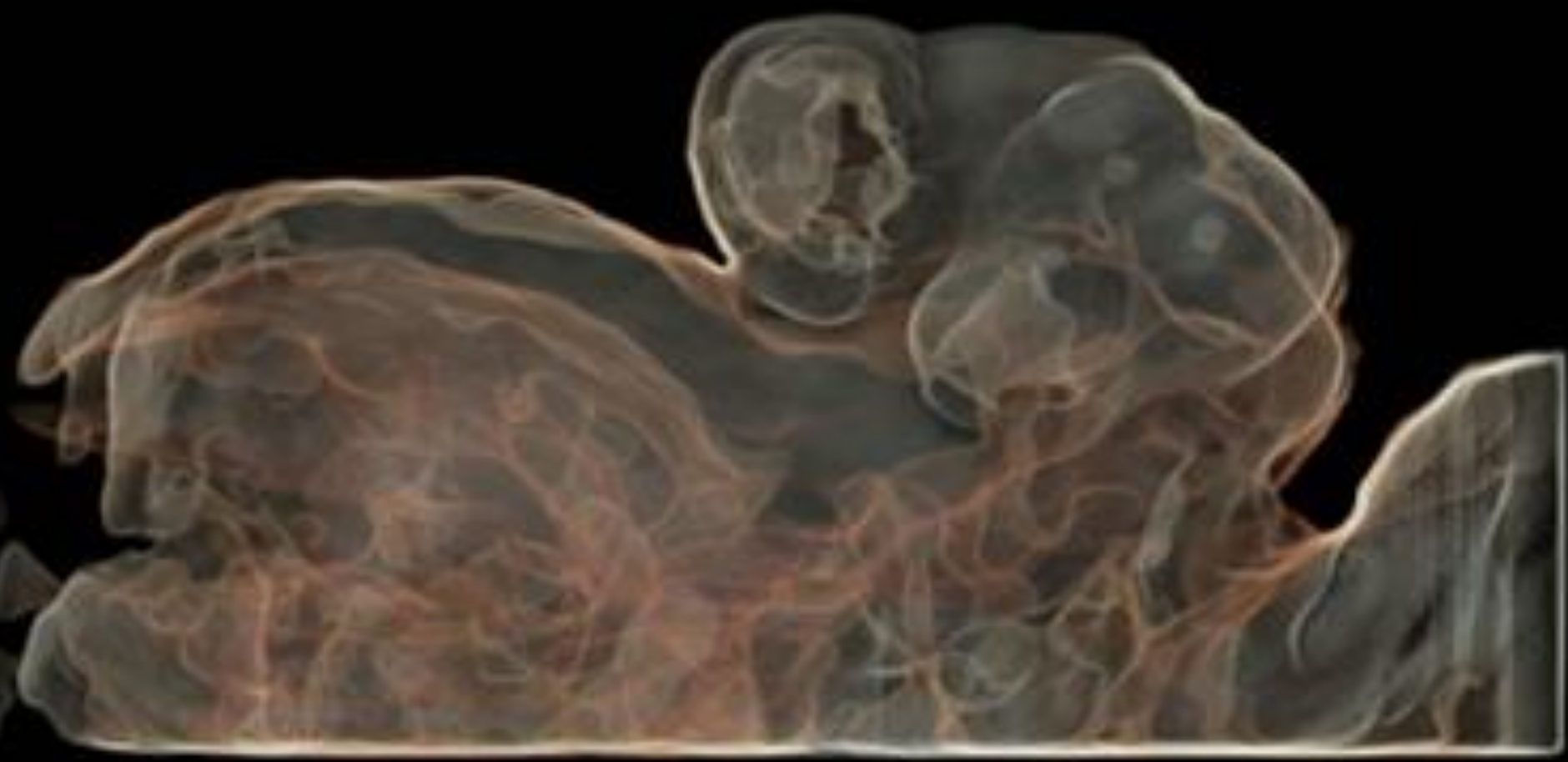
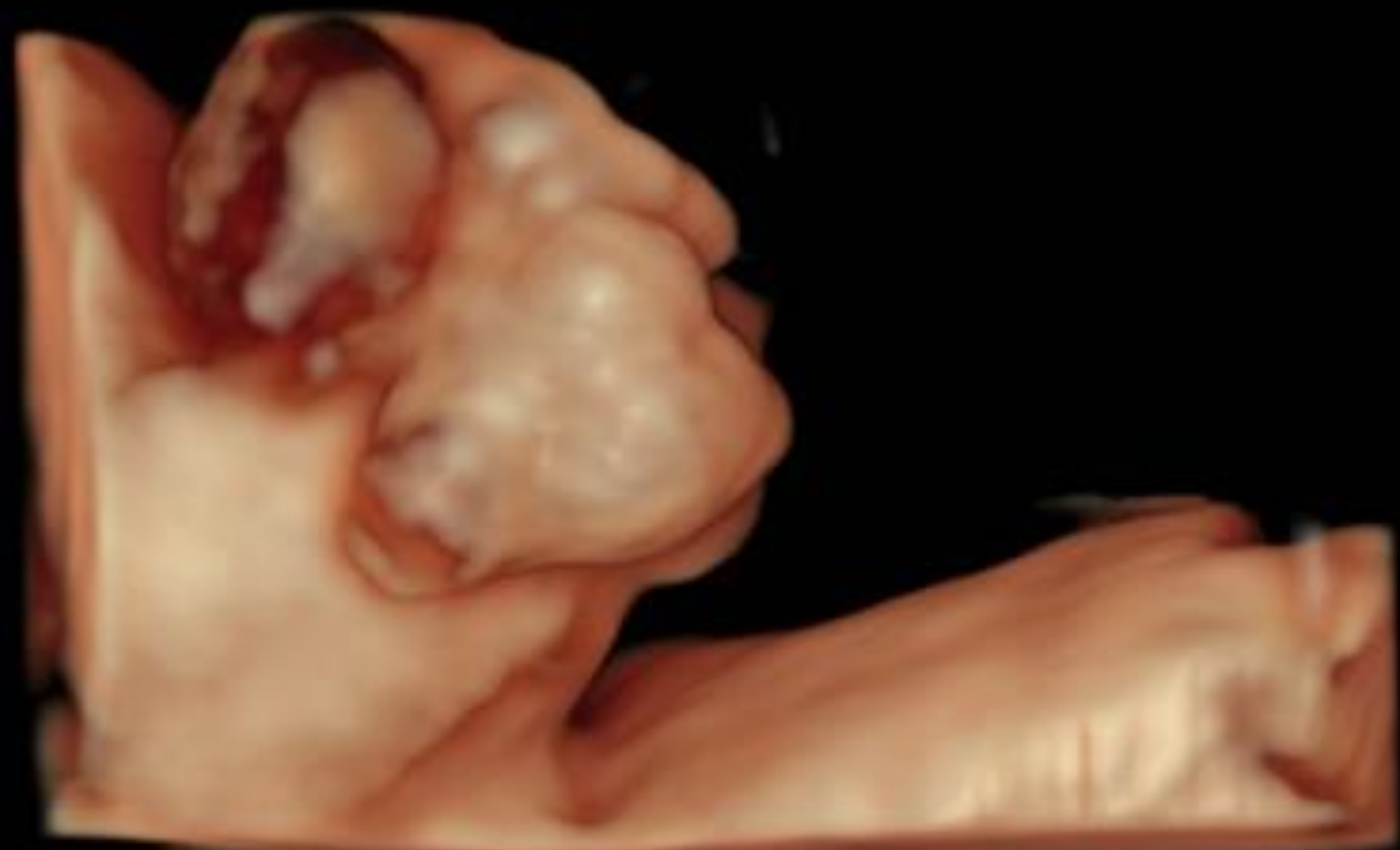
Our case highlights the critical role of advanced 3D-ultrasound in the detection and characterization of complex fetal anomalies

Figure 1



The hallmark features of the intracranial teratoma included: large, multilobulated, vascularized mass with internal heterogeneity, calcifications, and cystic components

Figure 2



3D ultrasound techniques can provide invaluable diagnostic information by delineating the precise anatomical relationships and extent of the lesion