

Picture of the Month

Nasal glioma

R. H. CHMAIT*, D. H. PRETORIUS† and A. D. HULL*

Departments of *Reproductive Medicine and †Radiology, University of California, San Diego, La Jolla, California, USA

The prenatal diagnosis of a paranasal facial mass is important because of the prognostic implications. The differential diagnosis includes frontal encephalocele, hemangioma, teratoma, retinoblastoma, dacrocystocele, and nasal glioma^{1,2}. Exact assignment of a prenatal diagnosis can be difficult because of the lack of distinguishing features using two-dimensional (2D) ultrasound³. However, characteristic location, Doppler findings, and associated anomalies may assist in diagnosis. A frontal encephalocele appears as a midline cystic or solid mass projecting over a calvarium defect, and other associated central nervous system anomalies are often present. A hemangioma is a heterogeneous mass that protrudes from and typically forms an obtuse angle to the skull⁴ and color flow Doppler may show significant blood flow within the tumor. Like hemangiomas, nasal teratomas are usually irregularly shaped and heterogeneous, but color flow Doppler usually demonstrates

only minimal flow. A retinoblastoma may also appear as a heterogeneous mass, but arises directly from the eye². Dacrocystoceles are benign, smooth-walled, hypoechoic cysts of the lacrimal duct which abut the orbits medially⁵ and may be bilateral. A nasal glioma, also known as nasal cerebral heterotopia, is a rare, benign, congenital tumor of neurogenic origin. This firm, nonpulsatile mass may arise intranasally, extranasally, or both, and may have an intracranial extension.

The fetus in this case was referred for evaluation at 31 weeks' gestation with an isolated left paraorbital hypoechoic mass. No other fetal anomalies were detected and amniotic fluid volume was normal. Two-dimensional ultrasound showed a cystic mass, 1.9 × 1.5 cm, inferior and medial to the left orbit, adjacent to the nose (Figure 1). Low level echoes were noted in the mass, and no Doppler flow was present. Three-dimensional (3D) ultrasound was performed using a Voluson 530D (Medison, Cypress, CA, USA). A surface rendered image of the fetal face is shown in Figure 2. A dacrocystocele



Figure 1 Two-dimensional image of the fetal face showing a cystic mass arising from the medial aspect of the left orbit.



Figure 2 Three-dimensional image of the fetal face clearly showing a cystic mass arising from the medial aspect of the left orbit.

Correspondence: Dr Andrew D. Hull, Department of Reproductive Medicine, UCSD Medical Center, 200 West Arbor Drive #8433, San Diego, CA 92103 (e-mail: adhull@ucsd.edu)

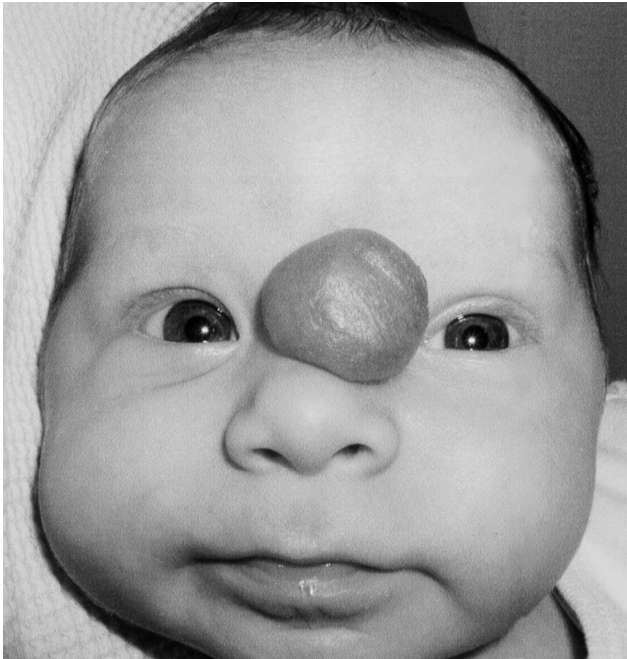


Figure 3 Appearance of infant shortly after birth.

was suspected, although the patient was informed of the differential diagnosis.

The infant was born vaginally at term without complication. A 2-cm diameter, noncompressible, purple mass was noted extranasally between the nasal bridge and the left eye (Figure 3). Even after birth, the precise diagnosis was uncertain. Magnetic resonance imaging showed a distinct mass with no intracranial extension (Figure 4). Excision with a forehead flap was successfully performed at 3 months of age. Pathology of the resected mass showed a nasal glioma.

Prenatal 2D ultrasound has been utilized to evaluate fetal facial masses³. Three-dimensional ultrasound is especially suited for evaluation of both the normal and the abnormal fetal face⁶. The complex curvature of the face may be visualized via surface rendered images, and the correlation of surface structures to the surrounding anatomy using multiplanar views may be easily performed. Although excellent visualization of the facial mass was obtained in this case using 3D

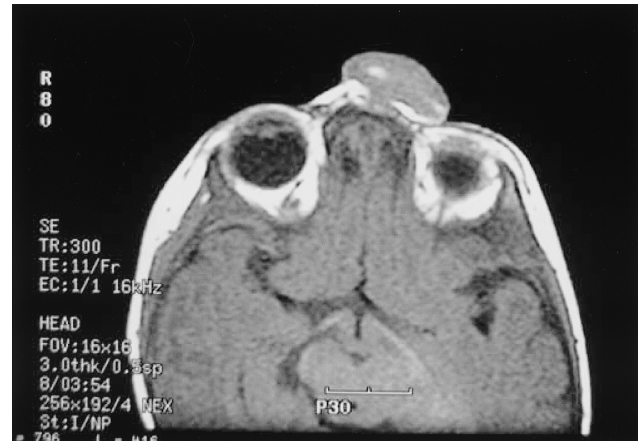


Figure 4 Magnetic resonance image obtained in newborn period showing a solid mass arising from the left side of the nose with no intracranial extension or bony abnormality.

ultrasound, the precise diagnosis remained uncertain until after delivery and further evaluation. This case demonstrates the value of 3D ultrasound in the evaluation of such masses, but underscores the difficulty in achieving a precise diagnosis prenatally. Patients should be counseled accordingly.

References

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The following can be found at: <http://www.blackwell-science.com/products/journals/suppmat/UOG/UOG811/UOG811sm.htm>

Figure S1 Multiplanar image of a mass arising from left orbit. The upper left panel shows the coronal plane, the lower left panel the axial plane and the upper right panel the sagittal plane.

Figure S2 Volume rendered image of the same orbital mass.