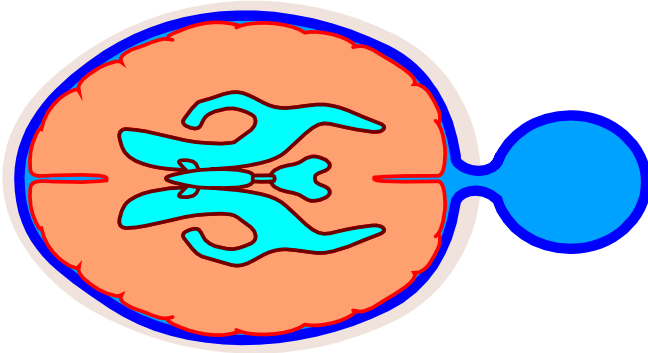
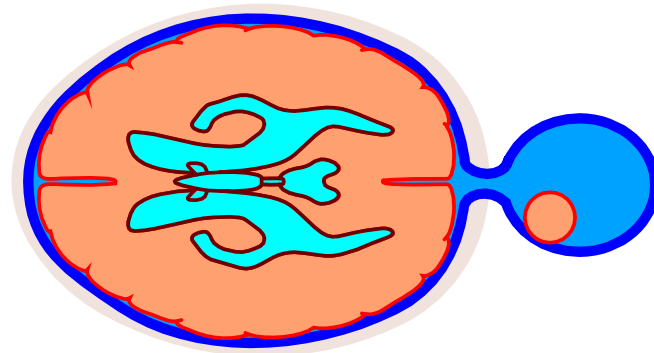


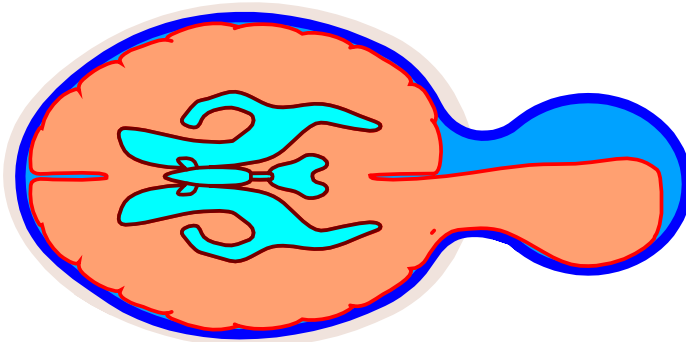
Types of cephaloceles: contents



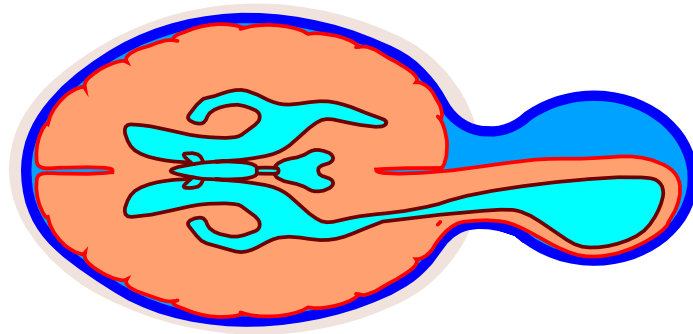
Meningocele



Encephalocele

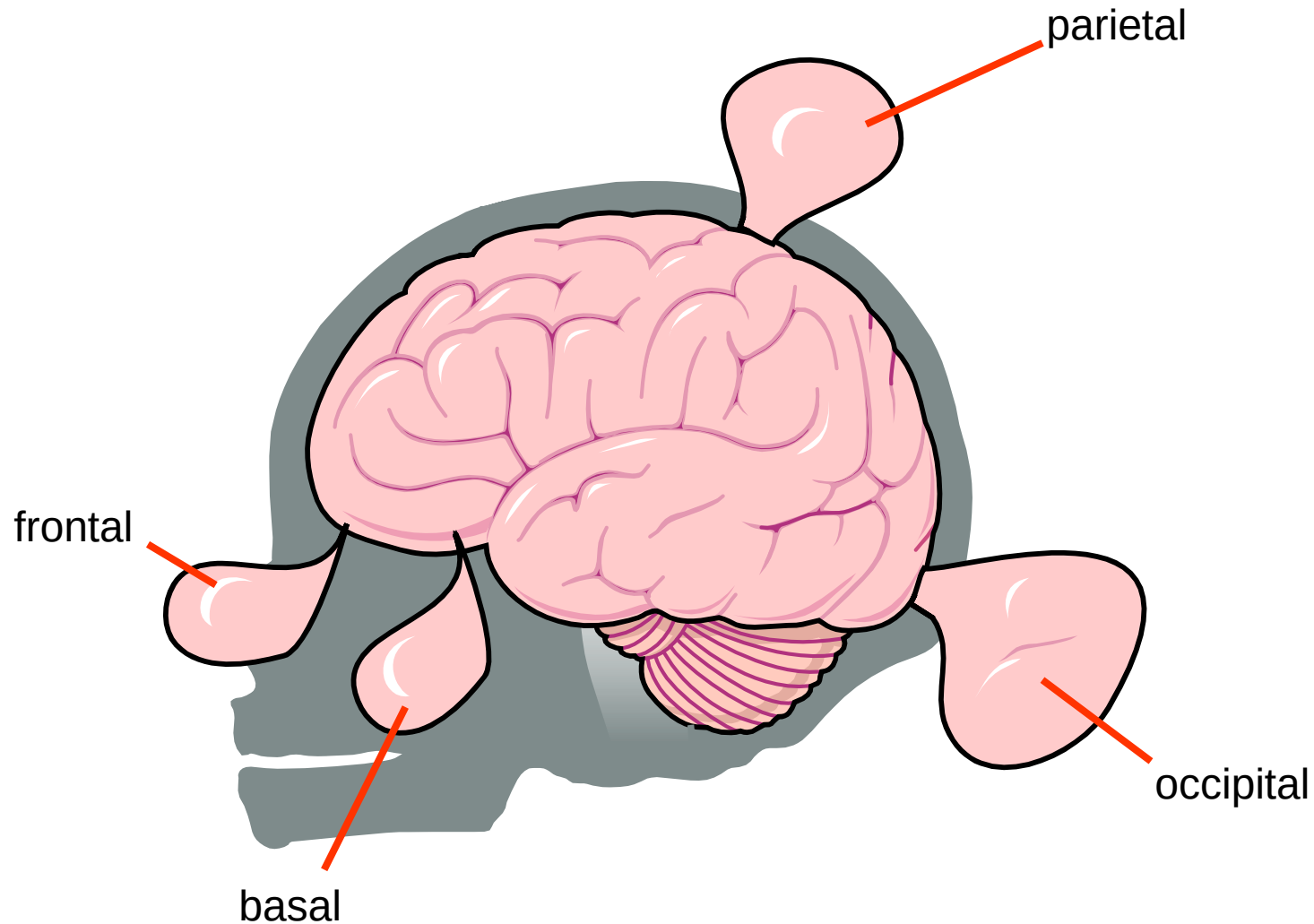


Encephalo-
meningocele

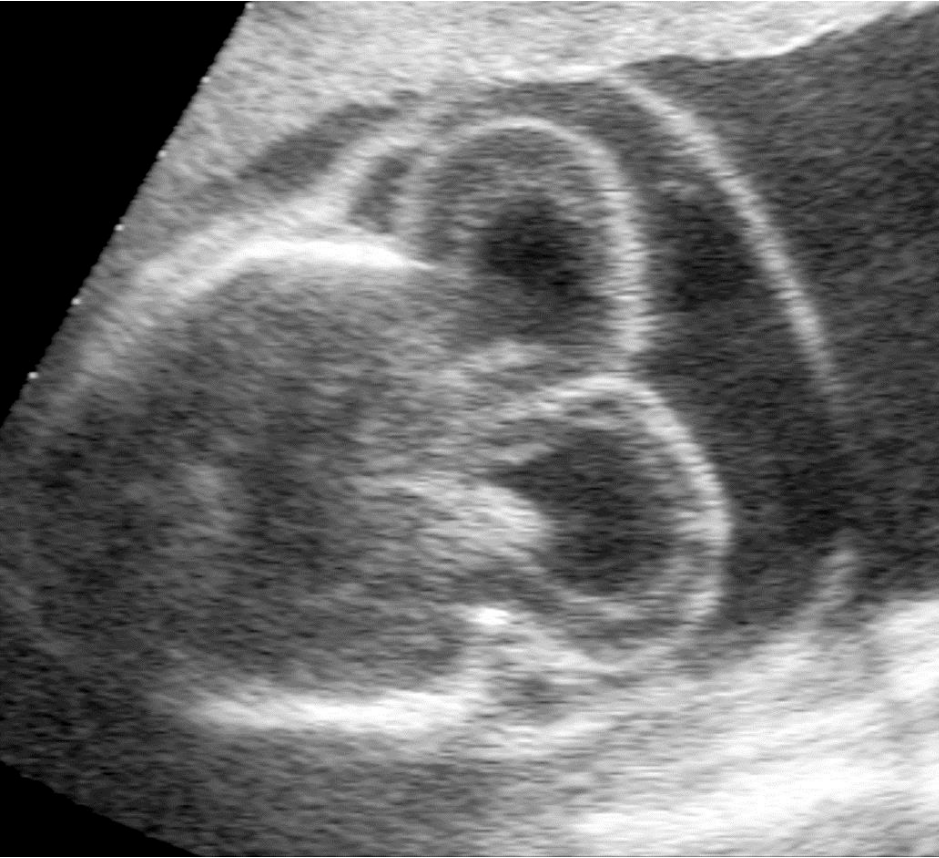


Encephalo-
meningocystocele

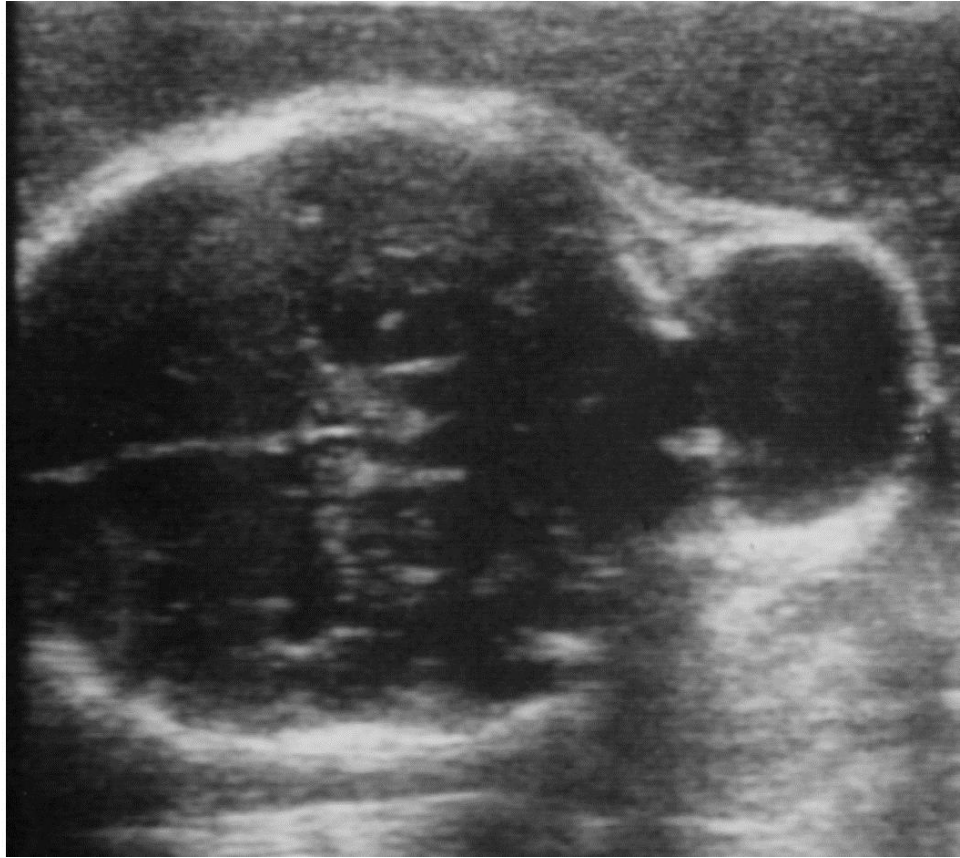
Types of cephaloceles: location



Occipital cephaloceles

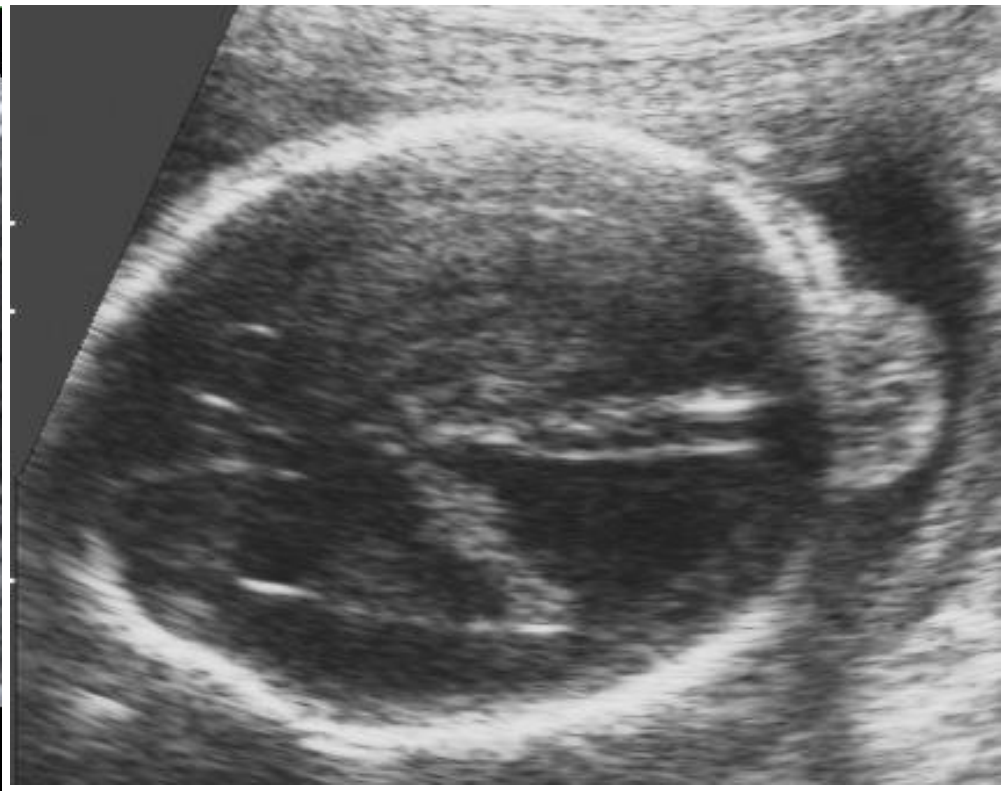
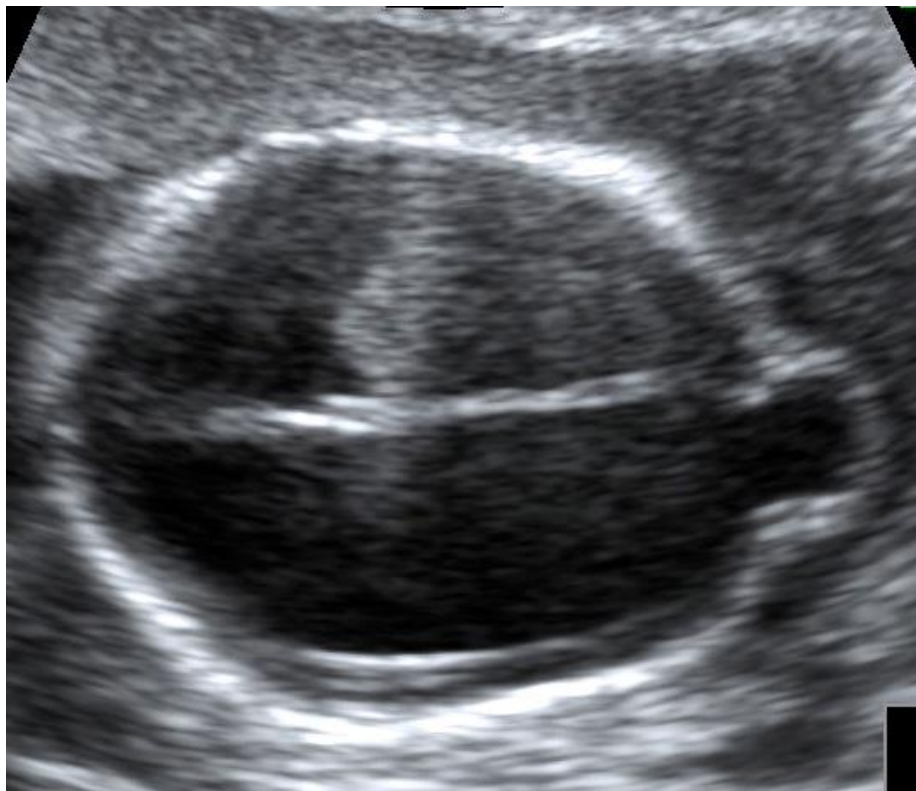


Encephalocele

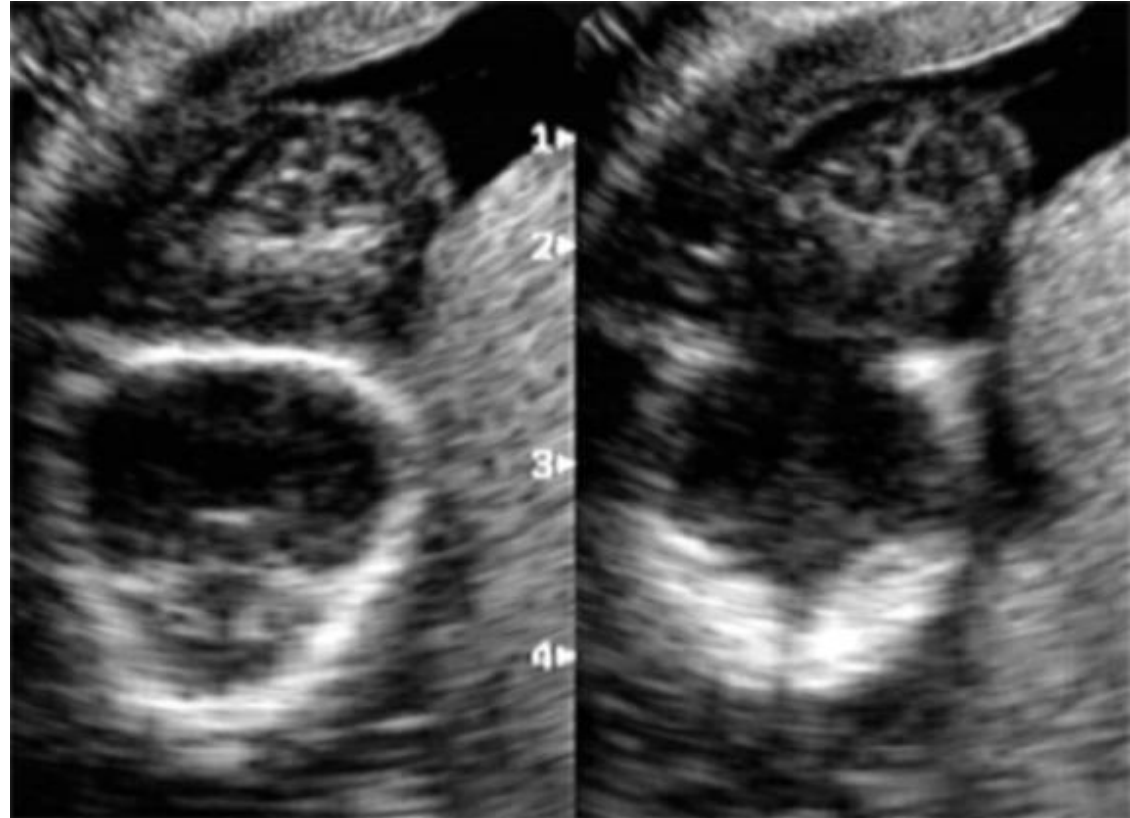


Cranial meningocele

Occipital encephaloceles

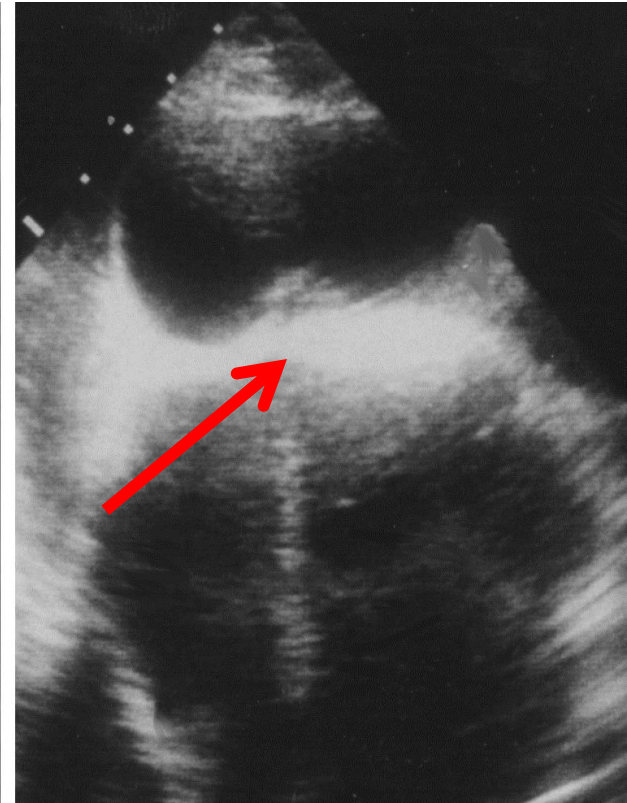
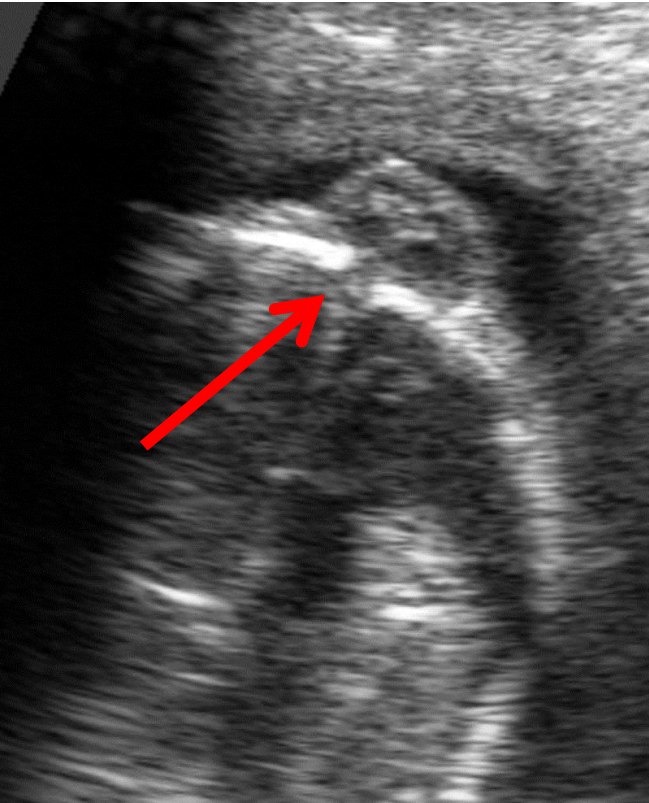


Large encephalocele at 15 weeks



Large encephaloceles may be recognized at the onset of the second trimester; for unknown reasons, the herniated brain develops sulcations much earlier than usual, and this facilitates a specific diagnosis

Bone defects in cephaloceles



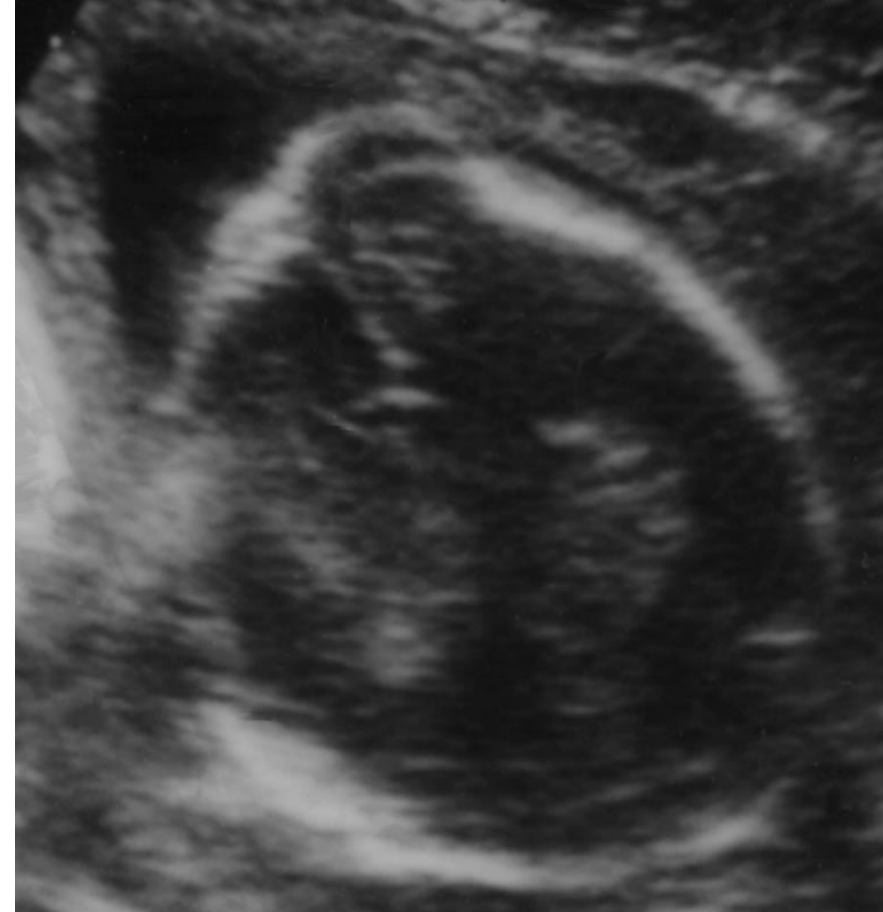
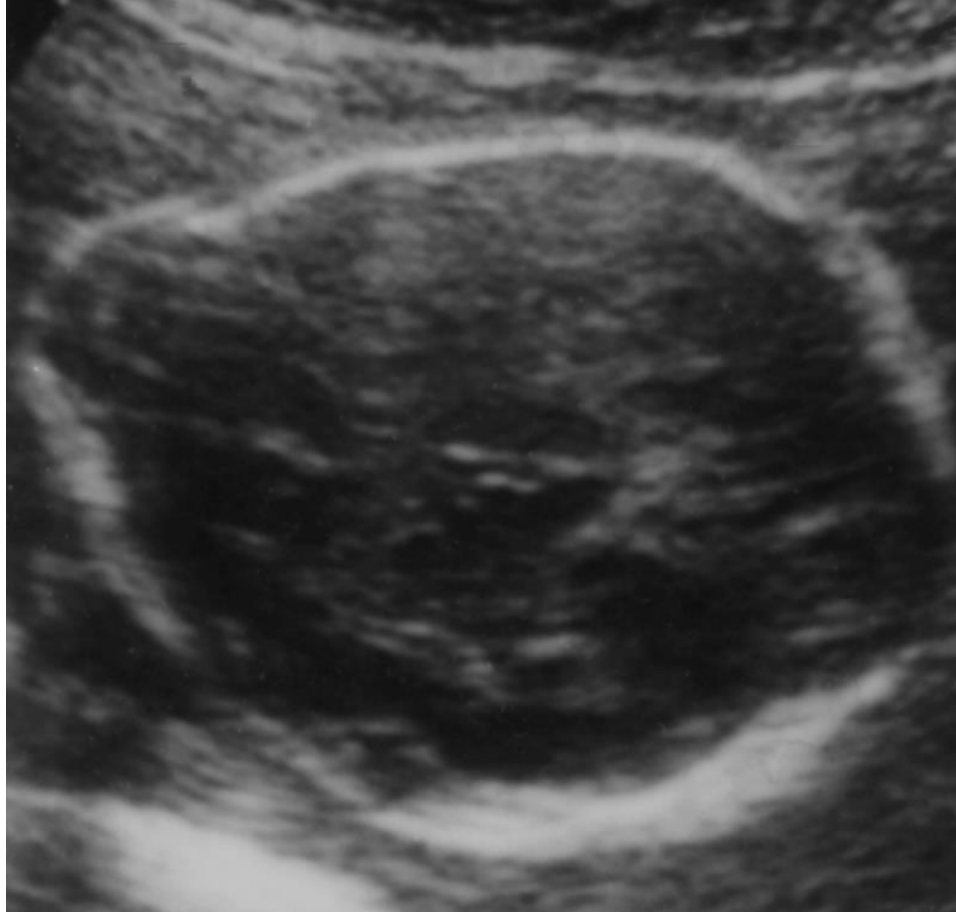
Meticulous scanning may be required to demonstrate the bone defect associated with cephaloceles; the defect is frequently very small, particularly with cranial meningoceles

Parietal encephalocele



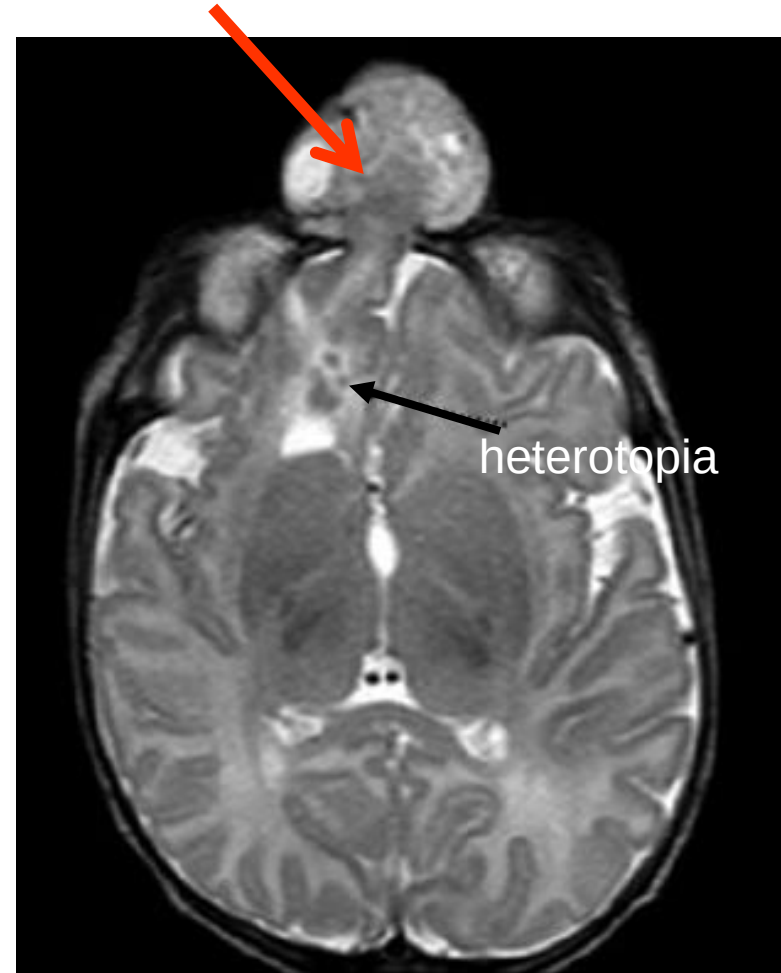
Non-occipital cephaloceles may at times be difficult to recognize; in this case abnormal intracranial anatomy was noted first; multiplanar sonography was necessary to demonstrate a large calvarial defect with brain protrusion in the area of the anterior fontanelle

Frontal cephalocele



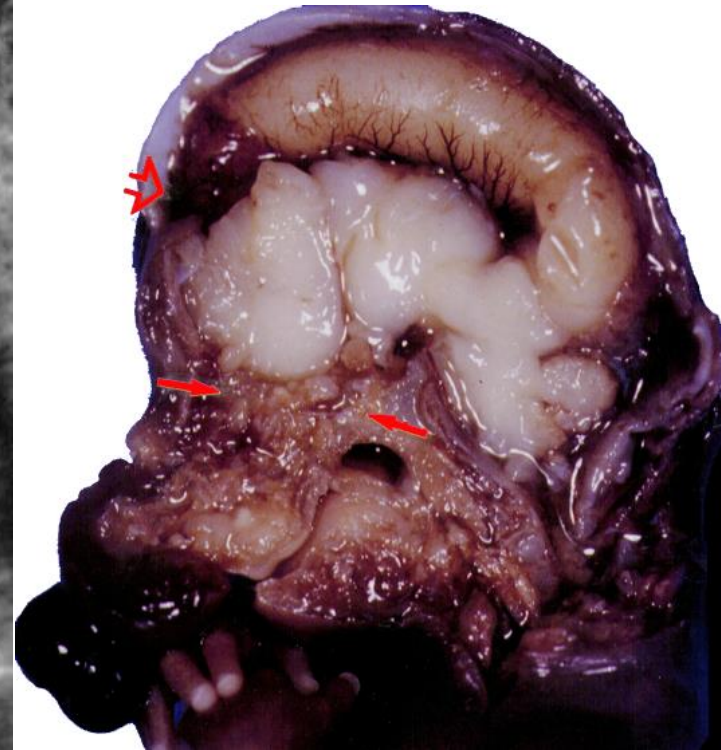
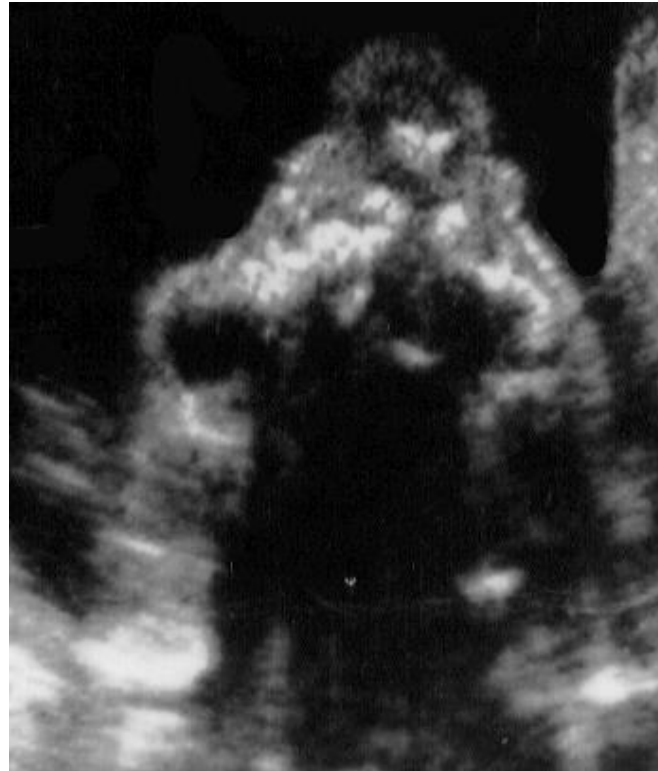
In this case as well the diagnosis non not obvious; an abnormal shape of the head was noted first and multiplanar sonography was required to demonstrate the bony defect in the frontal area with brain protrusion

MR of frontal cephalocele



Reproduced from: Dhouib et al: Correlation between pre- and postnatal cerebral magnetic resonance imaging. *Ultrasound Obstet Gynecol* 2011; 38: 170–178

Basal cephaloceles



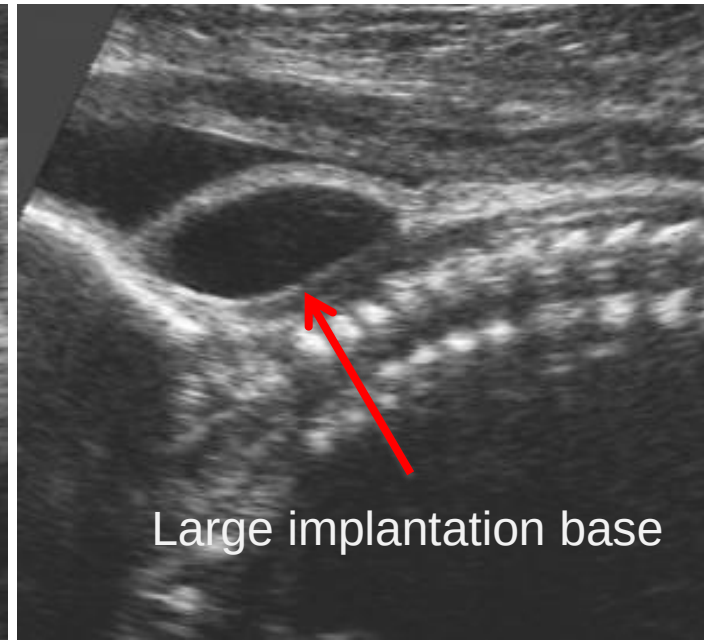
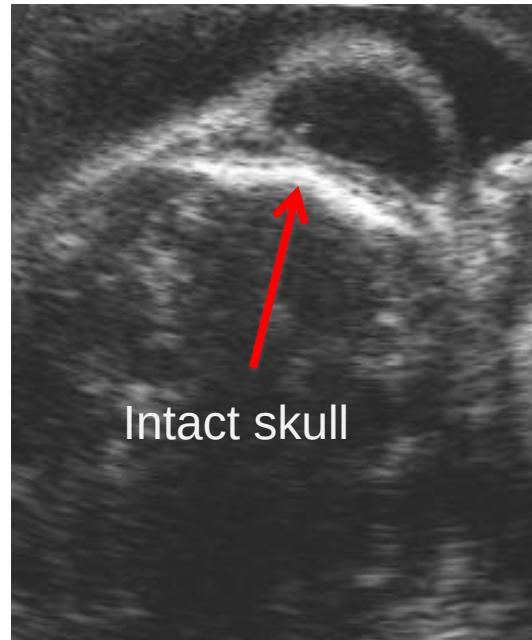
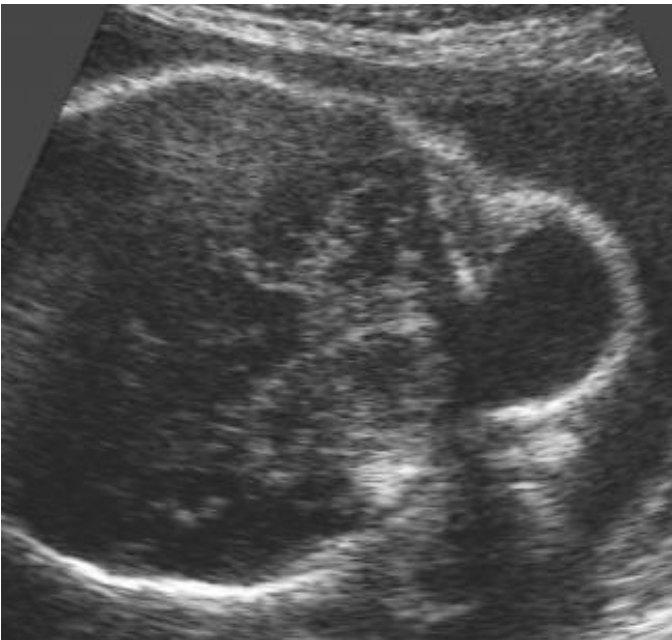
Basal cephaloceles develop inside the pharynx and they may be difficult to identify; in this fetus a mass was seen protruding from the mouth; the differential diagnosis included epignathus but a basal cephalocele was favoured because of the impression of a cleft in the bones of base of the skull and abnormal brain architecture

Differential diagnosis of cephaloceles: cystic hygroma of the neck



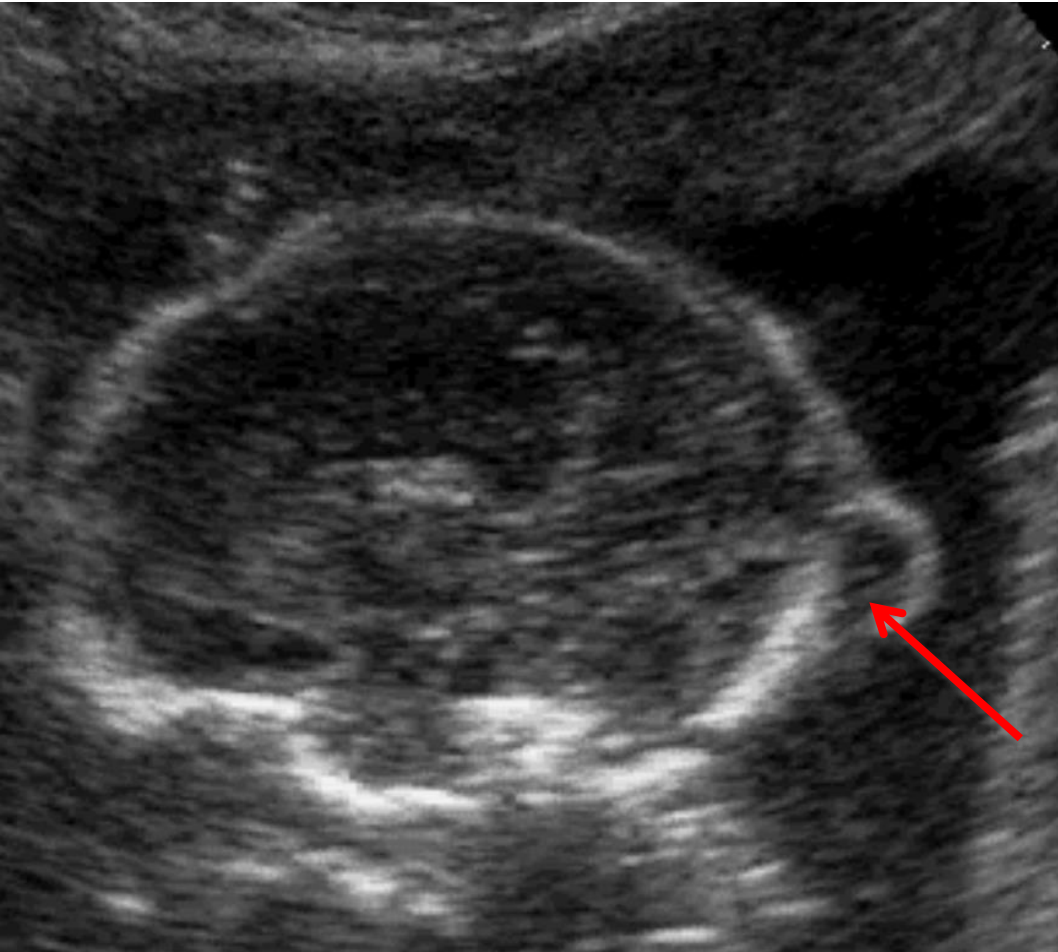
Distinguishing occipital cephaloceles from cystic hygromas is usually easy: hygromas have usually internal septations and a large implantation base, intracranial anatomy and skull are intact, and other signs of hydops may be present

Differential diagnosis of cephaloceles: localized unilocular cystic hygroma



Localized unilocular cystic hygroma may be difficult to differentiate from cranial meningoceles, particularly when they arise from the occipital area. The most important clues include normal intracranial anatomy, seemingly intact skull and a large implantation base

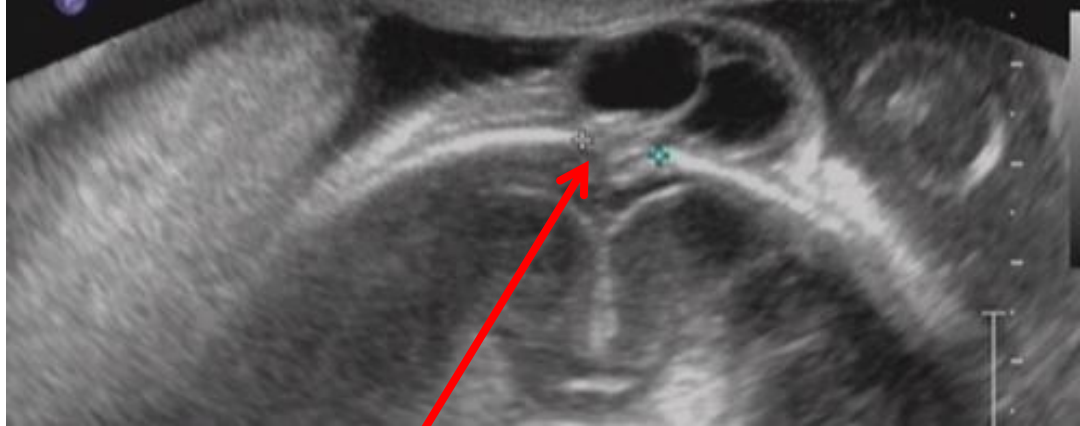
Differential diagnosis: scalp cyst



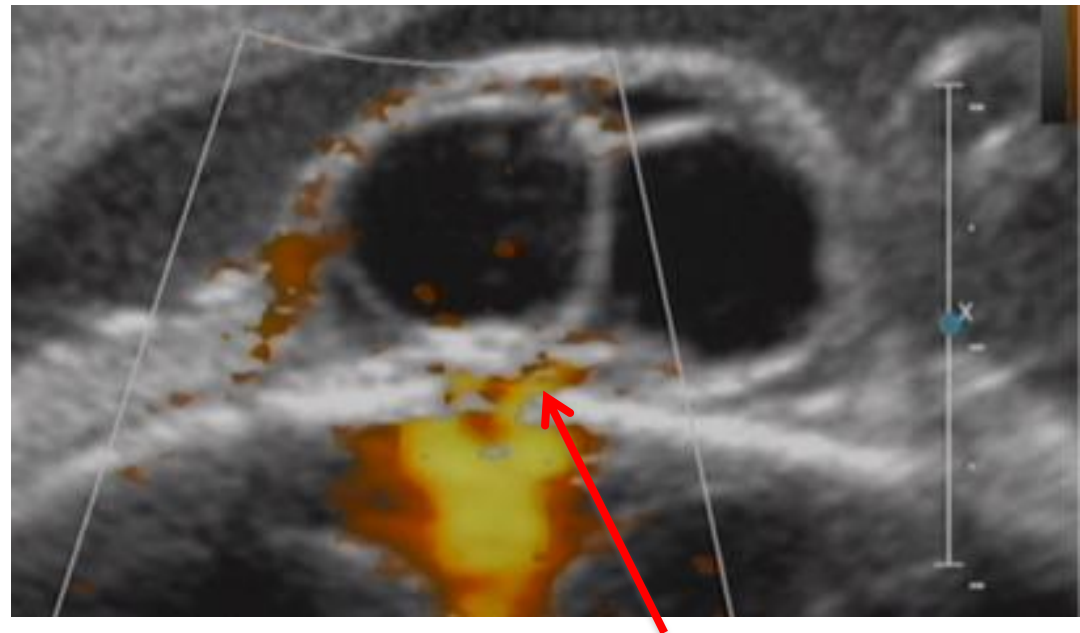
Scalp cysts are benign lesions that sometimes are difficult to differentiate from a cranial meningocele; in this case the diagnosis was favored by the integrity of the cranial vault and of the brain architecture



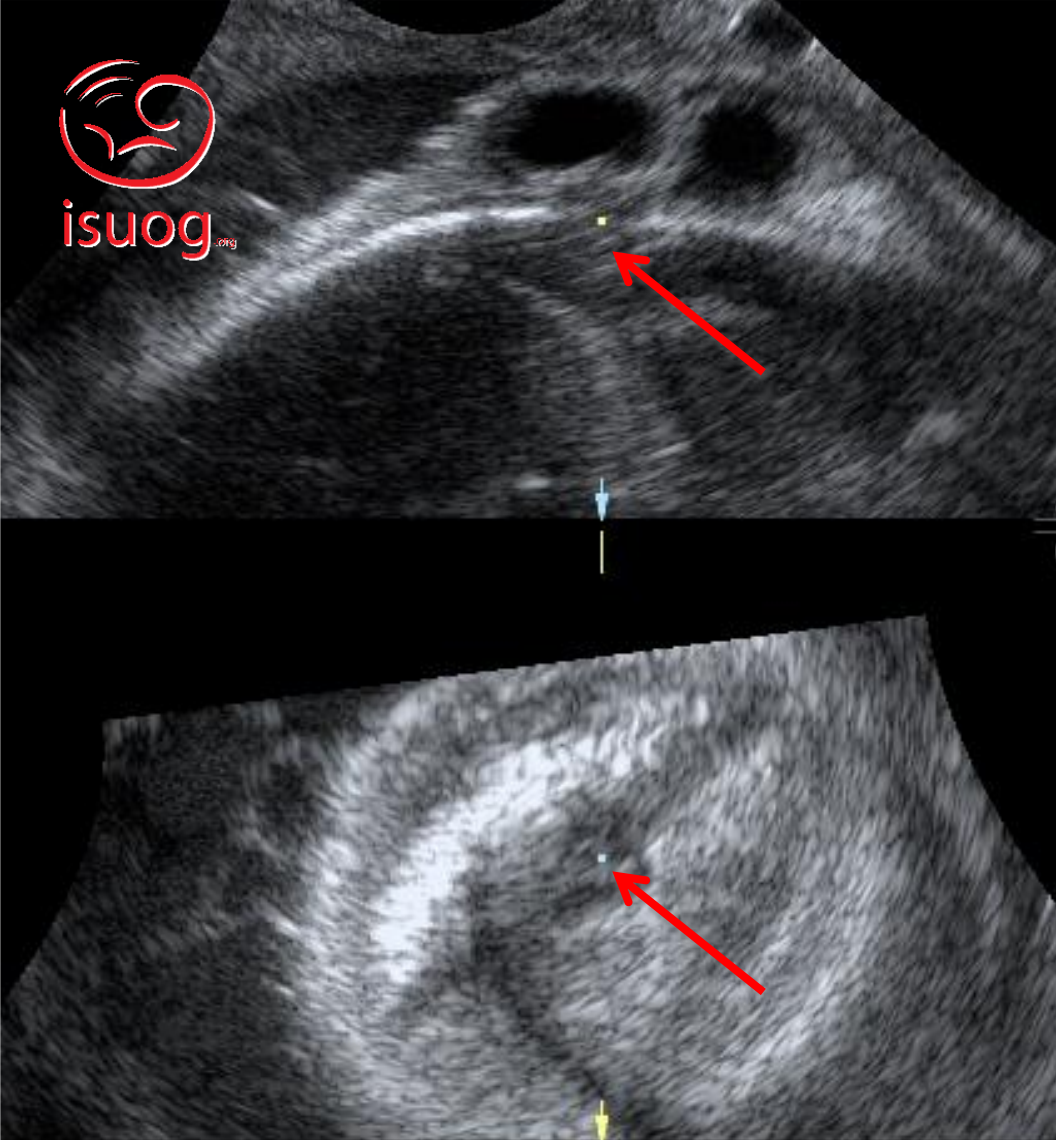
Cephalocele or
scalp cyst?



Multiplanar high resolution ultrasound
excludes encephalocele

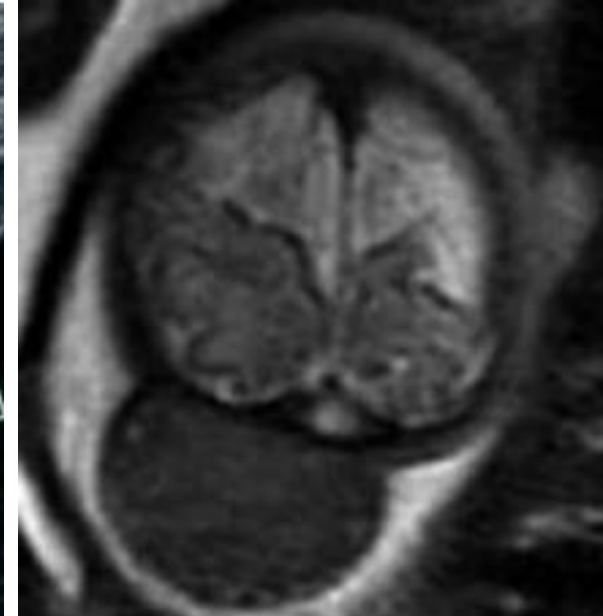
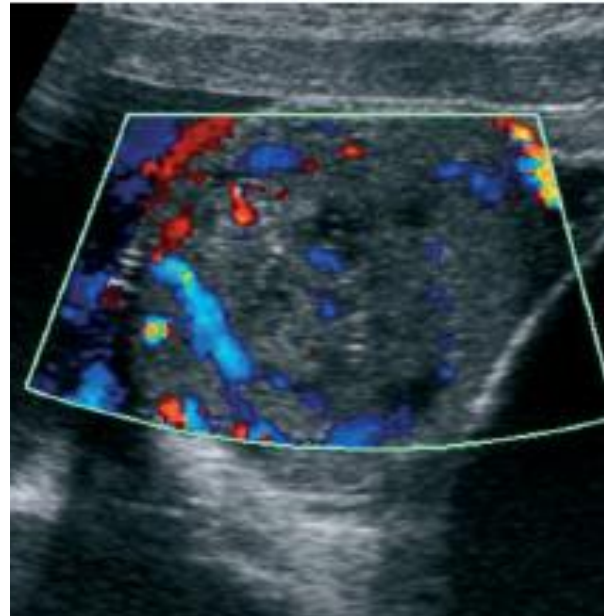
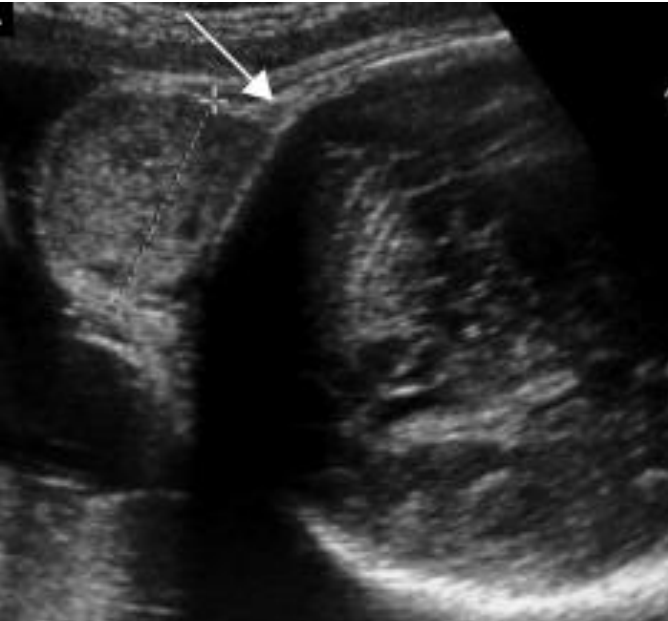


Power Doppler demonstrates a vessel crossing
from the intracranial cavity to the cyst favoring
the diagnosis of cranial meningocele



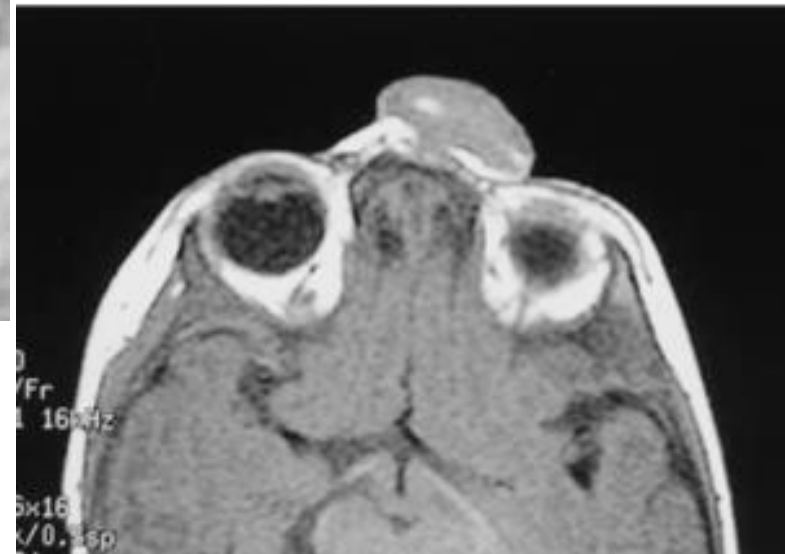
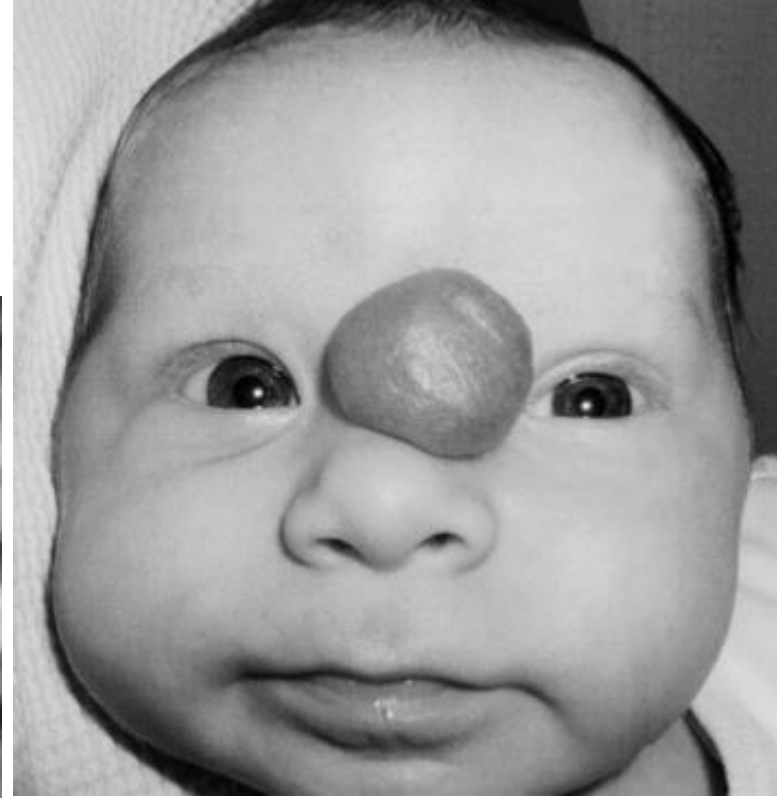
Same case of the previous slide: 3D ultrasound suggests a small (7 mm) defect of the cranial vault, supporting the diagnosis of meningocele; this si confirmed by surgery

Differential diagnosis: skull hemangioma



Congenital hemangioma appear sonographically as solid tumors with internal vascularization at Doppler examination; on MR they appear homogeneous and slightly hypointense; the arrow points to an echogenic line that was interpreted as the periosteum. Both on ultrasound and MR the occipital bone was found to be intact, although slightly depressed in the area of the lesion.

Differential diagnosis: nasal glioma



Nasal gliomas are benign lesions: the main criterium to distinguish them from anterior cephalocles in the integrity of the brain and skull

Differential diagnosis: dacryocystocele

Dacryocystocele appear as small sonolucent areas in the medial corner of the eye: they may be unilateral or bilateral

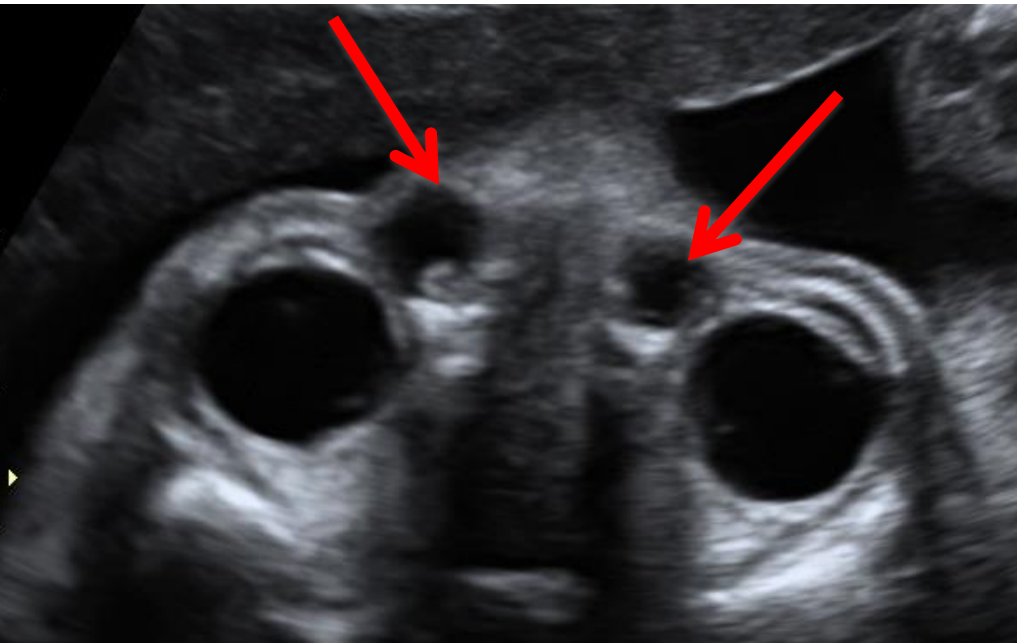


Image by Gianluigi Pilu



From Sharony et al: *Ultrasound Obstet Gynecol* 1999;14:71–73