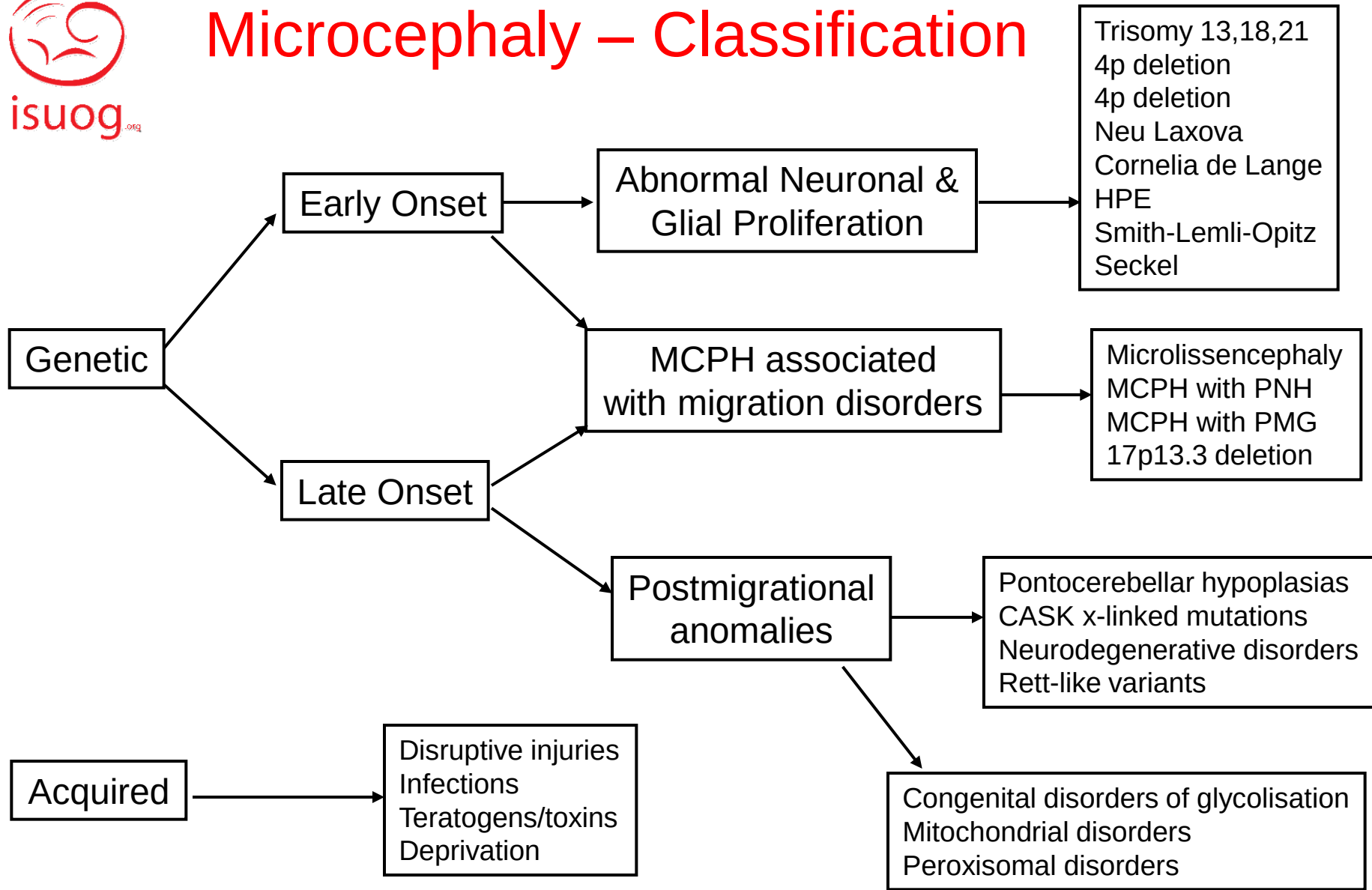
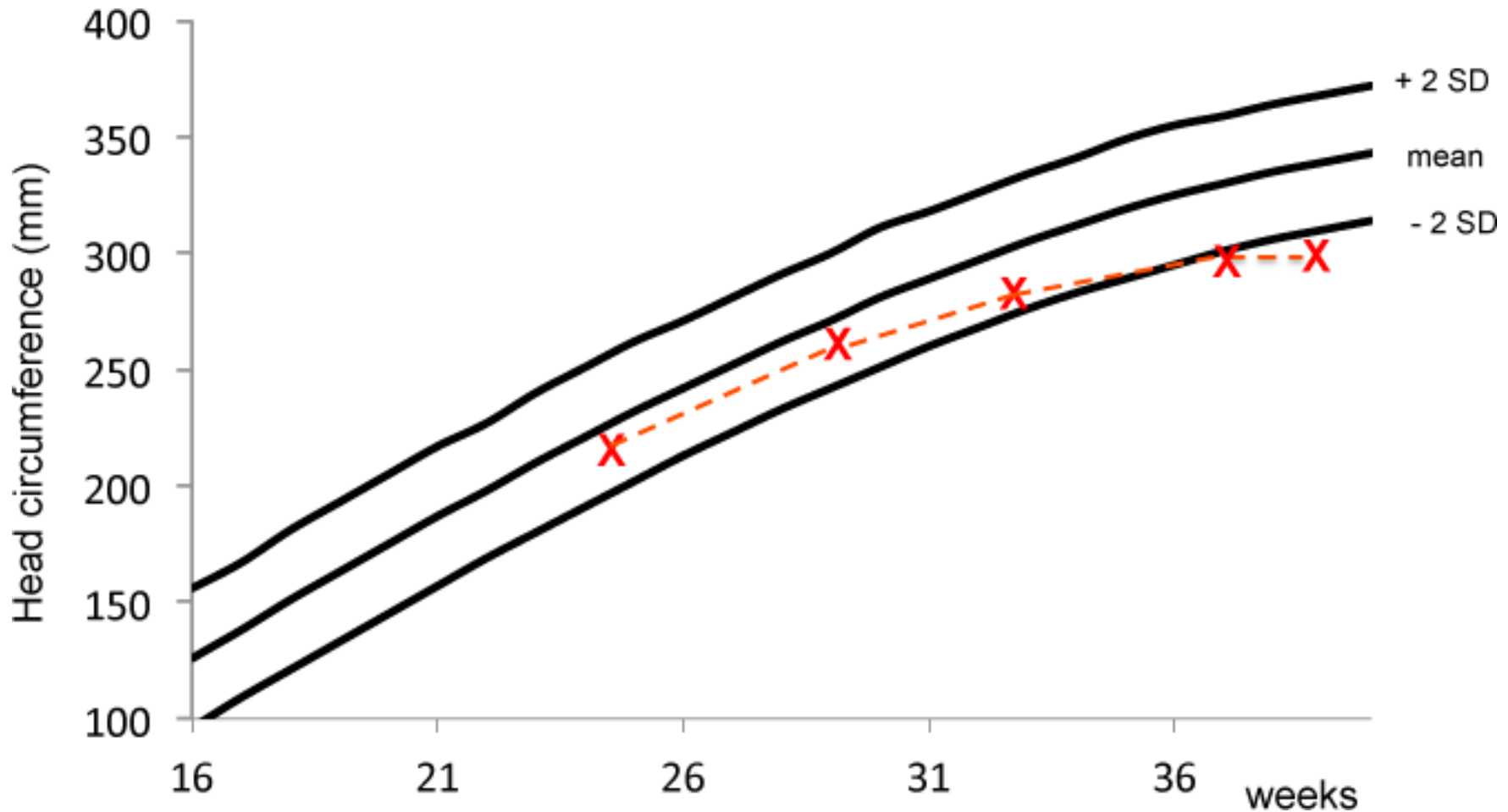


# Microcephaly – Classification

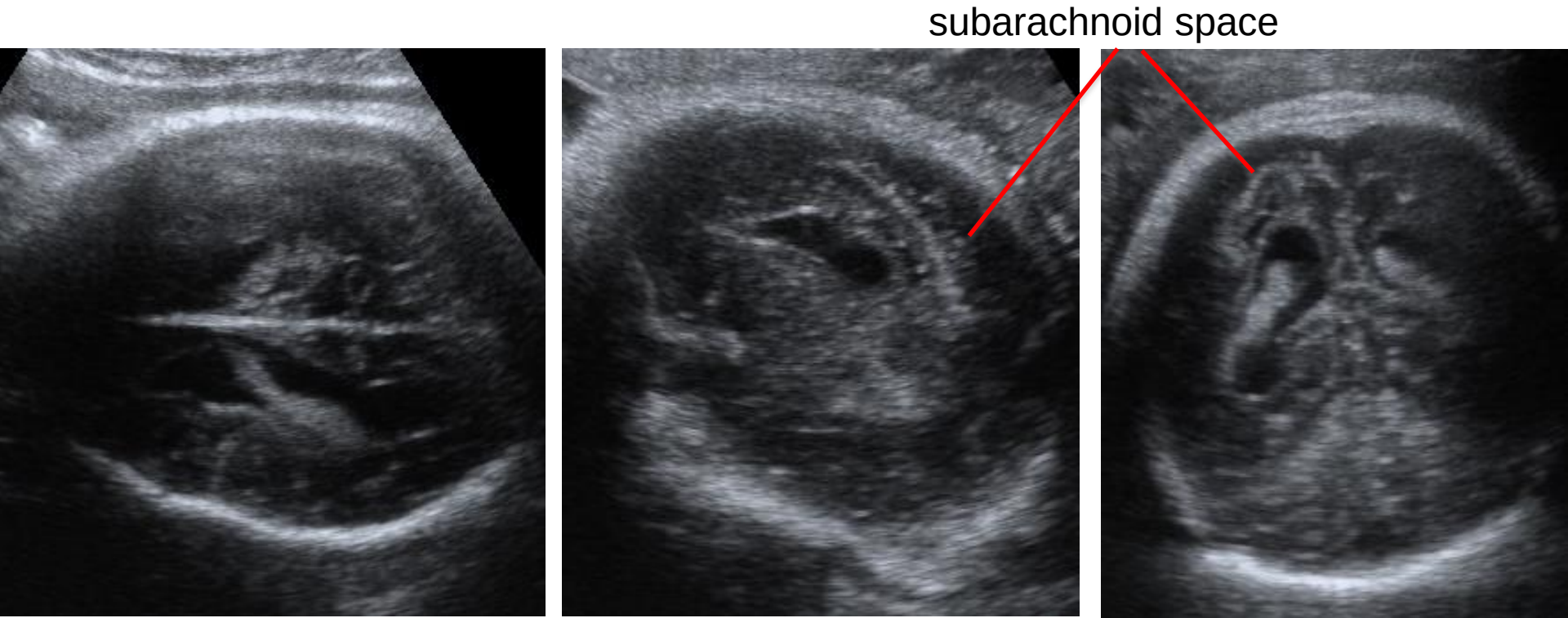


# Intrauterine development of microcephaly



Autosomal recessive microcephaly with normal US and MR examinations.  
The head circumference at 37 weeks is close to -2SD but failed to grow after delivery

# Microcephaly: sonographic diagnosis



This fetus had an unremarkable second trimester sonogram; at 33 weeks the HC was 2.3 SDs from the mean; multiplanar sonography demonstrated abnormal cerebral anatomy including an irregular shape of the lateral ventricles and increased subarachnoid space; HC at birth was  $< -3$  SD and the infant had severe microcephaly and neurologic impairment

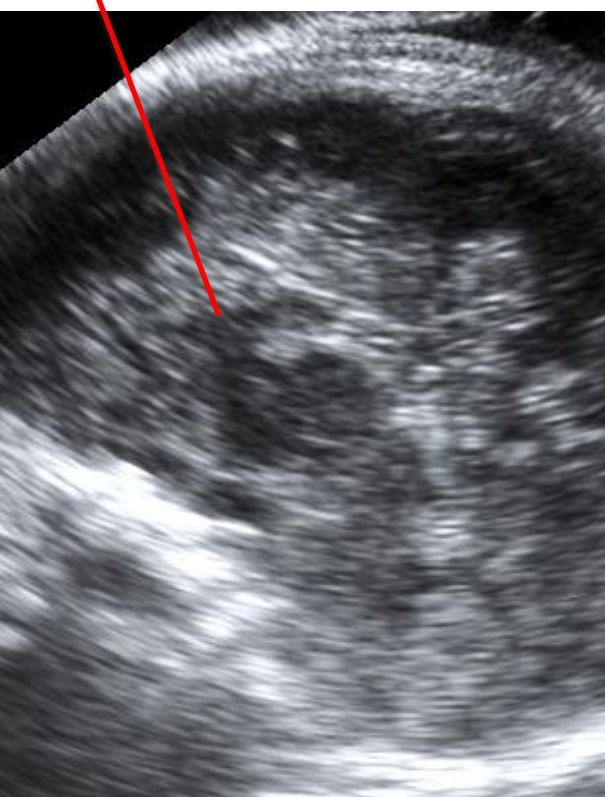
# Microcephaly and intracranial anomalies



The combination of a small head with intracranial anomalies (agenesis of corpus callosum, abnormal simplified convoluted pattern, large subarachnoid spaces) is suggestive of a severe form of microcephaly

# Multiplanar sonography in fetal microcephaly

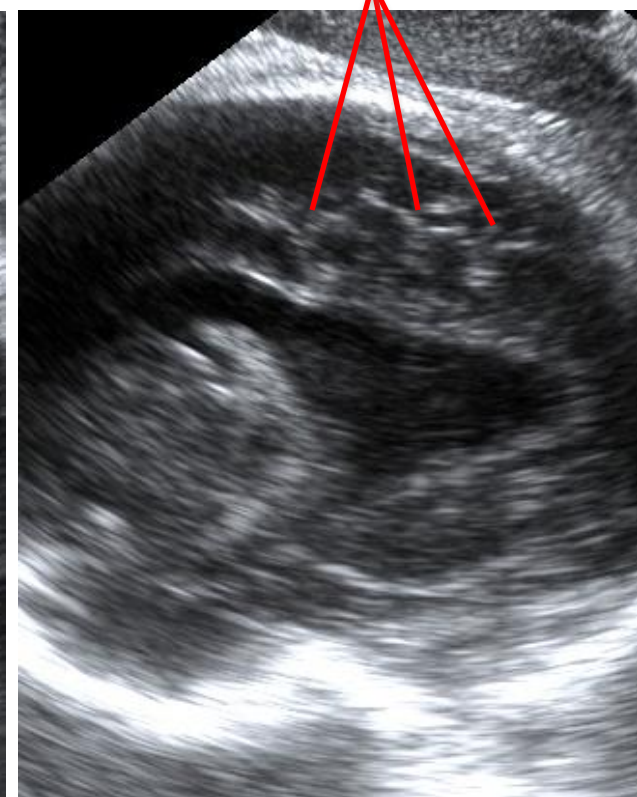
corpus callosum



subarachnoid space

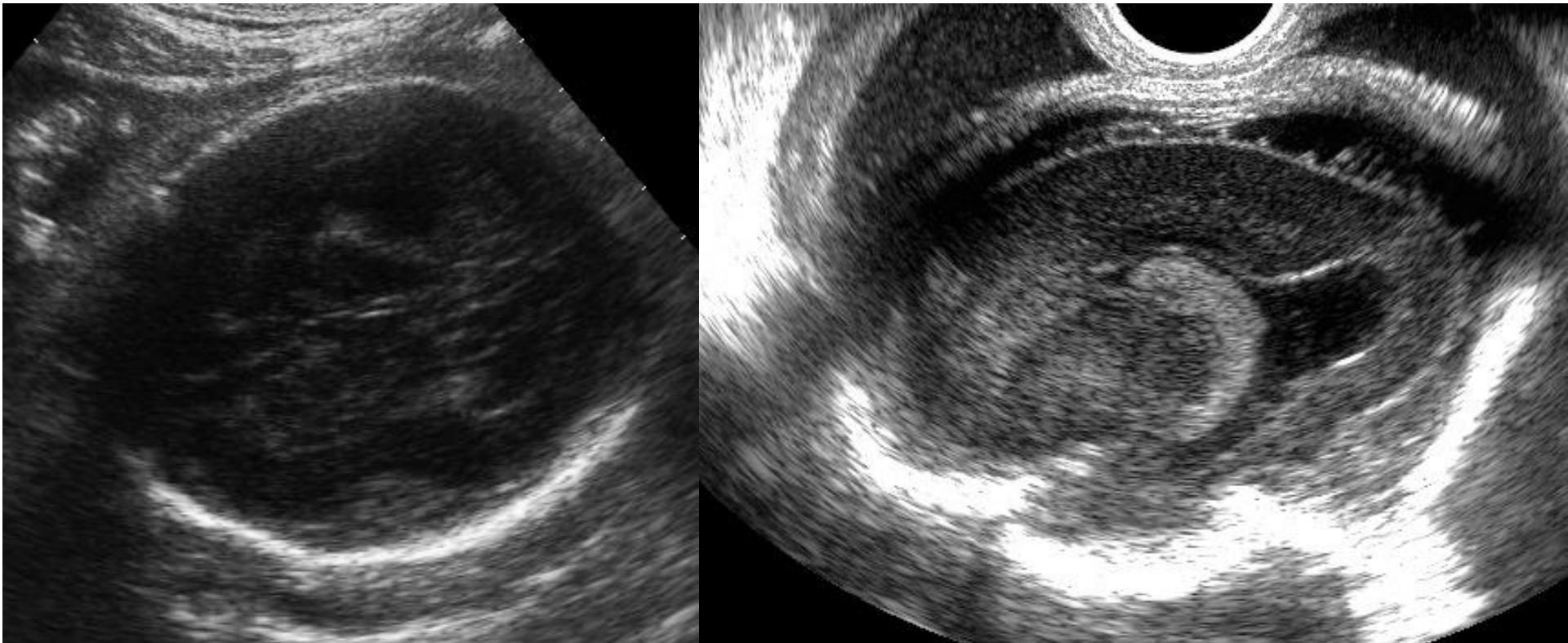


sulci



In this third trimester fetus with a small head, multiplanar sonography reveals multiple abnormal findings typical of fetal microcephaly: small dysmorphic corpus callosum, large subarachnoid space, thin cortical mantle, irregular sulcal pattern

# Microcephaly: sonographic diagnosis



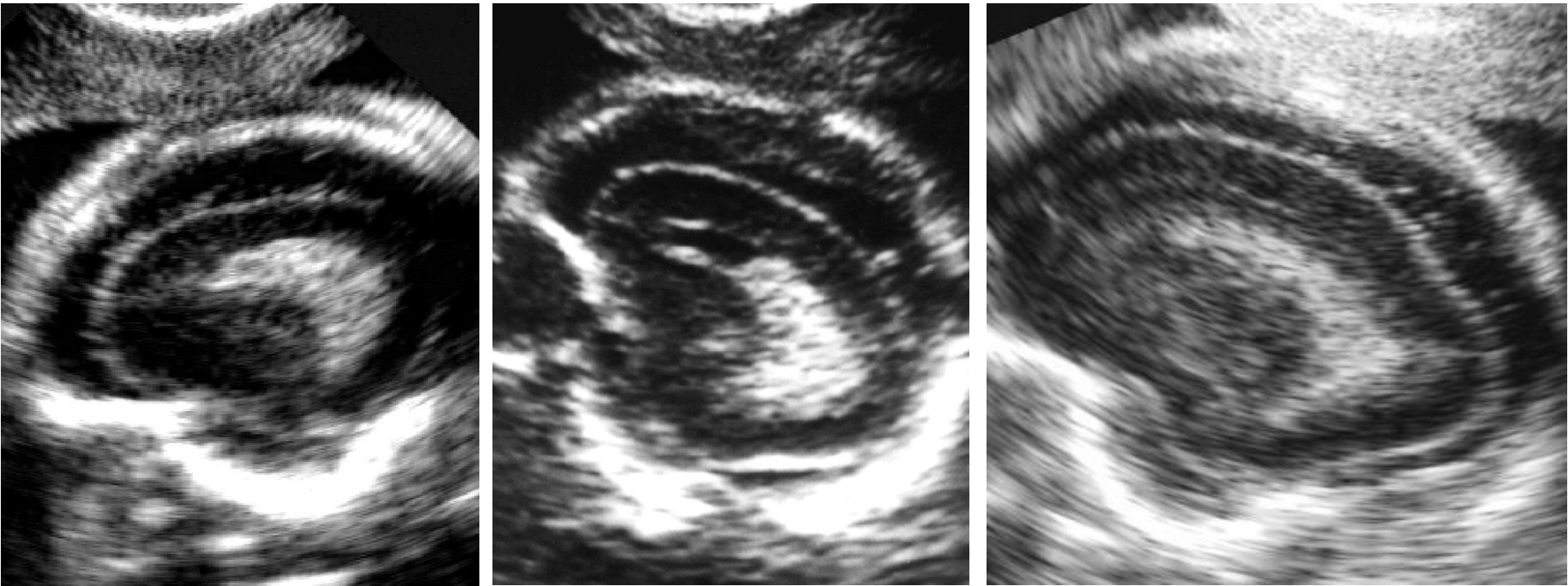
Although the findings are more subtle than in the previous cases, in this fetus with a small head the smooth contour of the cerebral hemisphere at 32 weeks suggests a simplified gyral pattern and indicates a high level of suspicion for abnormal cerebral development. Severe microcephaly with mental retardation was confirmed after birth

# Microcephaly: sonographic diagnosis



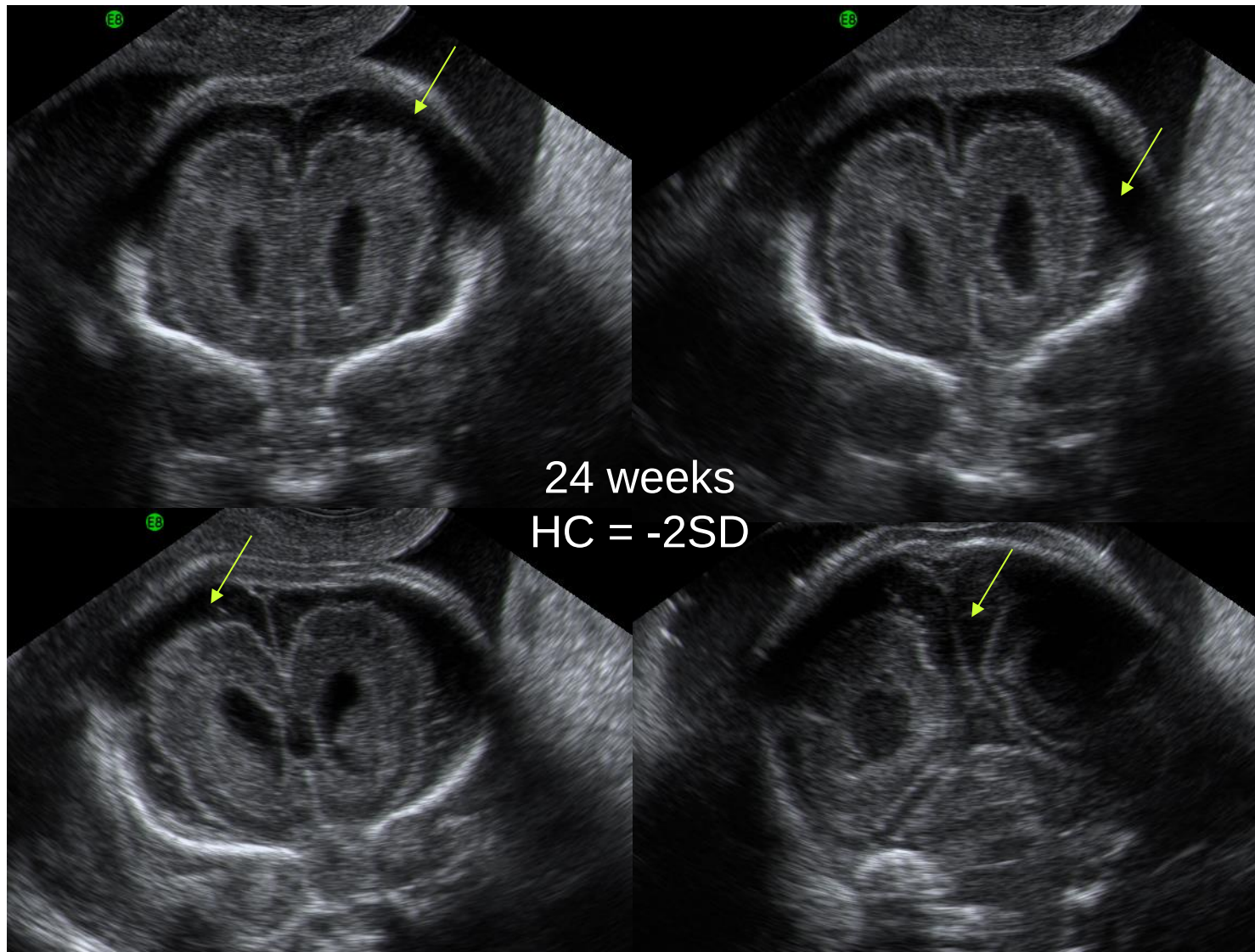
In this fetus at 22 weeks' gestation the HC is – 2.1 SDs from the mean; multiplanar sonography reveals that the subarachnoid space is enlarged, suggesting a very small brain size; microcephaly was confirmed after termination of pregnancy

# The subarachnoid space with fetal microcephaly



Three fetuses with severe microcephaly diagnosed in the second trimester demonstrate similar findings: in combination with a small head, the identification of enlarged subarachnoid spaces much increases the index of suspicion for an abnormality; also note the simplified shape of the hemispheres and lateral ventricles

# Acquired microcephaly - Congenital CMV



Large subarachnoid spaces as an expression of brain atrophy

# Fetal microcephaly: the sloping forehead



In a profile view of the face, the fetal forehead is normally convex: a sloping forehead in association with a small head size greatly increases the index of suspicion for microcephaly