

Antenatal and postnatal management of congenital cystic adenomatoid lung malformation diagnosed by ultrasound and Magnetic Resonance Imaging (MRI)

Abstract:

Antenatal diagnosis of congenital cystic adenomatoid lung malformation (CCAM) is vital for disease surveillance and postnatal care. Ultrasonography (US) has been the imaging gold standard for antenatal CCAM assessment. However, one of the limitations of US is the “vanishing phenomenon” caused by isoechogenicity of CCAM tissue and adjacent normal lung parenchyma. Methods: Antenatal serial US were concurrently used with magnetic resonance imaging (MRI) to monitor macro- and microcystic lesions. Results: In both pregnant women, antenatal US and MRI confirmed the presence, in the fetus, of cystic lesions and predicted disease regression/progression as well as the need for postnatal surgical intervention. Several advantages were detected by using both—serial US and MRI (over serial US alone)—including improved signal intensity, exact volume size measurements, precise CCAM location in particular for patients with adverse ultrasound conditions. Both neonates underwent surgical resection and had an uneventful post-operative course. Conclusions: Antenatal use of MRI as well as serial US improved information regarding tissue resolution and delineation of CCAM. The information from two imaging modalities was complementary. Our literature review confirmed the emerging role of prenatal MRI for postnatal monitoring and management of CCAM.