Prenatal diagnosis of left lung agenesis. MRI advantages on early diagnosis and prognosis

G. Pelizzo, G. d’Ottavio, F. Zennaro
Institute for Maternal and Child Health IRCCS “Burlo Garofolo” – Trieste, Italy

Purpose

Unilateral lung agenesis is an uncommon congenital anomaly, usually associated with other malformations. Prenatal diagnosis is based on differential diagnosis of diaphragmatic hernia, eventration, chest masses and lung malformations. Diagnostic advantages of MRI investigation over sonography in early diagnosis of lung agenesis have not yet been defined.

Material and methods

US examinations were performed by using GE Voluson 730

MRI was performed using Philips Panorama 0.6T, an open machine. The sequences were mostly SSH, each one lasting 8-12 sec.

Case report

Prenatal US of right diaphragmatic hernia (HLR index 0.5) was referred at 20 WG in a fetus with normal female karyotype. US evaluation showed left mediastinal shift, liver herniation into the right hemithorax, and poor lung volume bilaterally. Mild pericardial effusion, abdominal ascites, and hyperechogenic bowel, which are poor prognostic signs, were also found.

MRI imaging

As prognostic parameters were so unfavourable, a fetal MRI was performed in order to assess the feasibility of endotracheal plug insertion

Results

The MRI procedure clearly showed the absence of the left lung, left pulmonary vessels and bronchi. The right lung resulted to be hypertrophic mimicking the liver at the US examination. Lung growth was followed through MRI and data were compared with US lung volume data at the same week gestation. MRI right lung volume was 39 ml at 28 W and 64 ml at 32 W, thus showing compensatory right lung growth.

Postnatally, the diagnosis was confirmed by CT scan. The baby was born at term without respiratory and cardiopulmonary crisis.

Bibliography


Conclusions

Hypertrophic lung may mimick liver at US. Once the lung agenesis diagnosis made, fetal MRI could be useful to evaluate lung growth volume.