17th World Congress in Fetal Medicine

Prenatal assessment and the prognosis in the fetuses with congenital pulmonary airway malformation

Takamizu A, Yamamoto Y, Itakura A
Juntendo University, Bunkyo-ku, Japan

Objective

The prognosis of the babies with congenital pulmonary airway malformation (CPAM) has been evaluated with CPAM volume ratio (CVR). Some lesions diminish and it is difficult to measure at late gestation, but some cases need neonatal emergency surgery. In the latter case, it is better to deliver the baby at a tertiary center. We examined whether prenatal evaluation can predict the postnatal outcome.

Methods

Twenty-two CPAM cases from 2012 to 2017 were included. 5 cases underwent neonatal surgery (NS group), and 17 cases underwent elective surgery (ES group). Prenatal condition was evaluated longitudinally with mass volume/EFW and CVR. Postnatal CT volume and the duration of the surgery were also evaluated.

Results

The timing of diagnosis was not significantly different between the NS group (20. 43±2. 18) and the ES group (22. 32±2. 13). The volume/EFW at diagnosis was significantly higher in the NS group ($p=0.015$: NS group 4. 33±2. 82, ES group 1. 59±1. 39). Indeed the volume/EFW at diagnosis was significantly correlated with the postnatal mass volume by CT ($p<0.01$, $r=0.61$). The cut-off value of volume/EFW at diagnosis as a prediction for neonatal operation was 0. 0205 (AUC 0. 85, sensitivity 0. 833, specificity 0. 687). There was no significant difference between the groups in CVR at diagnosis, in volume/EFW or in CVR at late gestation. Although it was difficult to measure the mass accurately for 36% of the cases after 34 weeks, only 1 case diminished after birth completely, while only 2 cases did not require the surgery.

Conclusion

In fetal CPAM, the volume/EFW at diagnosis is a useful marker to predict neonatal surgery. Indeed, even if the mass diminishes at late gestation, most of the cases will require surgery at later life.