PRENATAL DIAGNOSIS AND POSTNATAL OUTCOME IN FOETUSES WITH CONGENITAL PULMONARY ADENOMATOID MALFORMATION

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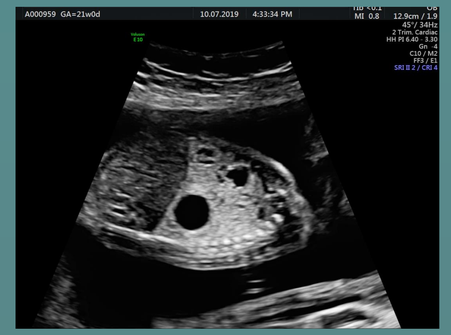
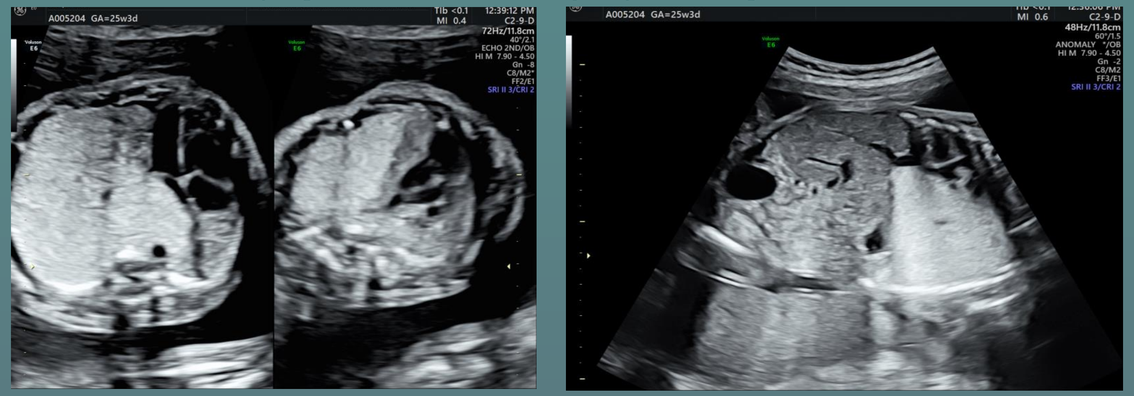


INTRODUCTION- INTRODUCTION- Prenatal diagnosis of echogenic lung lesions can be achieved using high resolution ultrasound during the second trimester. The most common cause of echogenic lung lesions are congenital pulmonary airway malformation (CPAM) and bronchopulmonary sequestration (BPS). Congenital pulmonary airway malformations (CPAM) are multicystic masses of segmental lung tissue with abnormal bronchial proliferation. CPAMs are considered part of the spectrum of bronchopulmonary foregut malformations. CPAM regress spontaneously in 90% of the cases and have favorable outcome. However, prognosis for those with hydrops and large lesions is worse.



Above image shows echogenic lung and mediastinal shift and how it looks w.r.t normal lung parenchyma

MATERIALS AND METHODS- A retrospective study was done at Aarohan Fetal Medicine Center, Indore (M.P.) for a period of over 10 years from 1st Jan 2011 to 30th June 2020. All the antenatal patients from 18 to 36 weeks of pregnancy were included in the study. These patients were registered under PCPNDT act and were scanned on GE healthcare Voluson E6 and E10. All the patients diagnosed with CPAM were followed up serially at an interval of 4 weeks. The patients were monitored using CPAM volume, CPAM volume ratio (CVR), mediastinal shift and evidence of hydrops. To calculate the CVR (CPAM volume ratio) which is a volumetric index of mass size that allows for comparison of fetuses at different gestational ages [1], the length, width and depth of the mass were multiplied by a 0.52 correction factor and divided by the head circumference.

AIM- To study the antenatal and postnatal outcome in fetuses with congenital pulmonary airway malformation (CPAM).

RESULTS- A total of 28 fetuses were diagnosed with CPAM. The mean gestational age of diagnosis was 22 weeks. The earliest gestation at which CPAM was diagnosed was 17+4 weeks of gestation. There were 5 (17.8%) cases who had CPAM I(macrocystic), 12 (42.8%) cases belonging to CPAM II (mixed) and 8 (28.5%) cases of
CPAM III(microcystic). 2 cases had bronchogenic cyst and 1 case had a hybrid lesion (miscellaneous). There was predominance of right sided lesions (53.57%)w.r.t left lesions (42.85%) and one had CPAM lesions in both the lungs (3.5%). 3 cases were found to have associated anomalies which included muscular VSD, unilateral mild ventriculomegaly and right multicystic dysplastic kidney, respectively. Mediastinal shift was seen in 22 (78.5%) fetuses; slight in 14 (50%) fetuses and severe in 8 (28.5%) cases and no mediastinal shift in 6(21.4%) cases. None of the fetuses developed hydrops. 15 (53.5%) of the fetuses had spontaneous regression of CPAM lesions in their follow up scans at 27-30 weeks. 4 cases showed complete regression of CPAM lesions at 32-34 weeks.16 (57.1%) babies had near normal outcomes after delivery. 8 (28.5%) patients were lost to follow up and 3 (10.7%) patients went for termination of pregnancy. There was 1 (3.5%) intrauterine fetal demise due to abruptio placentae.

CONCLUSIONS- In the absence of complications such as hydrops fetalis and mediastinal shift, the natural history, type of CPAM lesions, CVR and CPAM volume helps in prognosticating antenatally diagnosed CPAM lesion. Hence, it is important to delineate the natural history of CPAM and to create a consensus so as to guide the management and follow-up of these lesions. This study gave us confidence while managing cases with CPAM. Therefore, antenatal fetal surveillance for CPAM lesions is mandatory and planned delivery in a tertiary care center are bare minimal in this situation.

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