ORIGINAL RESEARCH PAPER
Volume - 10 | Issue - 12 | December - 2021 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

# RARE CASE OF PULMONARY SEQUESTRATION DIAGNOSED ANTENATALLY.

**Radiology**

| | |
|---|---|
| **Dr. Veeresh U Purad** | MDRD, Senior Resident, GIMS Gadag. |
| **Dr. Rahul Shirol** | MDRD, Professor, Department of Radiology, GIMS Gadag. |
| **Dr. Adviath Shivpur** | Senior Resident, Department of Radiology, GIMS Gadag. |
| **Dr. Manjunath Abbigeri** | Assistant Professor, Department of Radiology, GIMS Gadag. |
| **Dr. Veeresh Hanchinal*** | Assistant Professor, Department of Radiology, GIMS Gadag. *Corresponding Author |
| **Dr. Shambhu Purad** | Assistant Professor, Department of Medicine, GIMS Gadag. |

## ABSTRACT

Iind trimester anomaly scans play a vital role in identifying the anatomical abnormalities in the fetus and thus help in planning and prognosis of pregnancy. Pulmonary sequestration is an not a common condition in which a separate lung tissue is formed, which is not a anatomical structures of the lung tissue, not its blood supply, neither perform any function also. A 26 years old mother, visited our department for routine anomaly scan. Transabdominal ultrasound examination revealed a well-defined echogenic mass seen just below the left hemidiaphragm which showed vascular supply directly from the aorta. This confirmed our diagnosis of pulmonary sequestration. We further evaluated with Fetal MRI which showed T2 high signal and T1 iso signal mass, suspicion of sequestration and esophageal duplication cyst was considered. The pregnancy was carefully followed by serial scans and a male baby delivered without any complications. Postnatally abdominal ultrasonography performed showed echogenic mass seen below the left diagram which showed feeding artery from the aorta.

## KEYWORDS

Pulmonary sequestration, fetal MRI.

**CASE REPORT:**

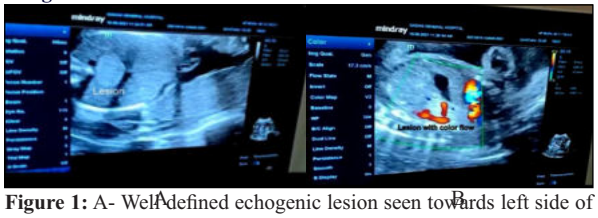
A 28 years old female with 22-23 weeks of gestation was referred to the department of radiodiagnosis, GIMS Gadag for II[nd] trimester scan. The pregnancy was unremarkable till date. Transabdominal ultrasound examination performed revealed a well-defined, echogenic mass seen just below the diaphragm towards left side measuring 21 x 18mm. The echogenic mass showed vascularity on color Doppler and vessel was seen arising from by aorta (figure 1). Rest of the fetal anatomy did not reveal any obvious abnormality. Lung parenchyma was normal. No mediastinal shift was seen. Possible extra lobar sequestration of lung was diagnosed. Congenital pulmonary airway malformation (CPAM) was kept as differential diagnosis.

Further the patient was advised for Fetal MRI, done in 1.5 T Philips MRI, which revealed, well defined T2 hyper intense and T1 iso intense lesion just below diaphragm on left side (Figure 2). Sequestrations of lung, CPAM were suspected and Esophageal duplication cyst was given as differential diagnosis as the lesion was adjacent to the esophagus.

The prognosis was discussed with the parents and the mother was followed closely during the remaining part of the pregnancy. 2.4 kg baby delivered without any complications.

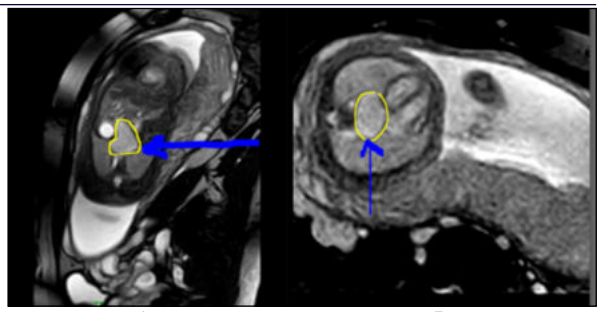
Post-natal ultrasound was performed on baby, revealed, well defined, echogenic mass seen just below the diaphragm seen extending to left side. The lesion showed vascular supply from aorta. No calcification / cystic changes seen, and diagnosed as sequestration of lung (figure 3). Neonate did not have fetal distress and any other significant complications. Patient was asked to consult pediatric surgeon for the further treatment.

**Images:**



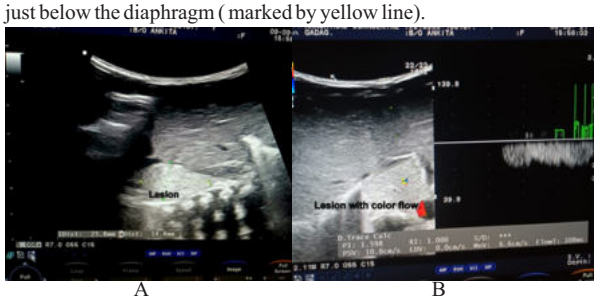

A B

**Figure 1:** A- Well defined echogenic lesion seen towards left side of abdomen. B- the lesion shows vascular supply arising from the aorta.



A B

**Figure 2:** Fetal MRI : A- Well defined T 2 Hyperintense lesion seen just below the diaphragm ( marked by yellow line).




A B

**Figure 3:** A- Post natal image of same patient revealing, well defined echogenic lesion seen just below the diaphragm towards left side of abdomen. B- the lesion shows vascular supply arising from the aorta.

**DISCUSSION:**

Pulmonary sequestration, also known as broncho pulmonary sequestration (BPS), is a cystic mass of non-functioning pulmonary tissue that does not communicate with the tracheobronchial tree. In addition, the blood supply is from direct branch of aorta, not from pulmonary artery. Two forms of pulmonary sequestration are typically seen: intralobar sequestration which exists within the normal lung parenchyma, and extra lobar sequestration (ELS) which has separate pleural layer and is thus completely separated from the normal lung parenchyma [(1)].

Sequestration is a common congenital abnormality of the lung tissue, which is only second to congenital pulmonary airway malformation (CPAM). It has been observed that among sequestration ELS accounts for around 50% [2]. ELS was observed to more commonly in the males than females [3]. ELS can be diagnosed in the prenatal period as a mass in the intrathoracic or abdominal mass, with typical appearance as solid echogenic well-defined mass on ultrasonography and shows vascular supply from aorta on color Doppler. The mass can cause compressive effect on the lung parenchyma and cause mediastinal shift / atelectasis of lung. Antenatally it can cause polyhydramnios. In many cases, BPS can resolve spontaneously, thus resulting in favorable prognosis [4]. It has been suggested that thrombosed feeding artery may be responsible for the spontaneous resolution.

In cases who have BPS mass below the diaphragm, it may be mistaken for a kidney mass. A feeding artery helps in the diagnosis.

One important differential diagnosis is that of CPAM. It may appear similar to sequestration on ultrasound examination; however, usually it presents as large cystic lesion and there will not be any feeding artery and helps to differentiate it. The ELS which is present below the diaphragm may be confused with a kidney mass like a blastoma or neuroblastoma. Presence of a feeding artery helps in differentiating. Moreover, sequestration may appear as a highly echogenic mass on ultrasound.

As many cases of sequestration resolve antenatally, thus many experts advise to wait and continue the pregnancy with serial follow up by ultra sound. Resection of the sequestration (lobectomy) in the fetus can be performed, but the risks involved and the expertise required to perform an intrauterine surgery makes it a rarely performed procedure [5]. The complications of neonates born with sequestration depend on the size of the mass and the location. When the mass is too large, it can compress on the main lung tissue and result in hypoplasia. In a few cases, some neonates may only show signs of distress, lung infection, failure to feed or circulatory failure. Some of the cases may not present with any of the complications.

## CONCLUSION:

Second trimester scan is an important component of antenatal care. We were able to detect this rare condition antenatally using advanced imaging modalities and continued the serial follow up scan. The baby did not have any complications and treated postnatally.

## REFERENCES:

1- Kaushik G, Shelar R, Bangde P. Antenatal Diagnosis of Pulmonary Sequestration: A Case Report. Asian J. Med. Radiol. Res. 2021;9(1):14-16.
2- Collin PP, Desjardins JG, Khan AH. Pulmonary sequestration. J Pediatr Surg. 987;22(8):750–753.
3- Conran RM, Stocker JT. Extralobar Sequestration with Frequently Associated Congenital Cystic Adenomatoid Malformation, Type 2: Report of 50 Cases. Pediatr Dev Pathol. 1999;2
4- Adzick NS, Harrison MR, Crombleholme TM, Flake AW, Howell LJ. Fetal lung lesions: Management and outcome. Am J Obstet Gynecol. 1998;179(4):884–889.
5- Adzick NS. Open fetal surgery for life-threatening fetal anomalies. Semin Fetal Neonatal Med. 2010;15(1):1–8.