# Case Report

# Fetal Pleural Effusions with Spontaneous Resolution: A Case Report

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*A 42-year-old pregnant woman was referred with massive fetal bilateral pleural effusions. Observation with serial ultrasound was made. The documented spontaneous resolution of fetal pleural effusion was recorded. Neonatal examination revealed a completely healthy infant with normal respiration.*

*Fetal pleural effusion can cause fetal lung compression, abnormal neonatal respiration and finally, neonatal mortality. Regular ultrasounds are one of the supportive options due to spontaneous resolution that can occur in 9 to 22% of the cases.*

**Keywords:** *Fetal pleural effusion, Spontaneous resolution*

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Fetal pleural effusion is an accumulation of fluid in the pleural space[1]. It can be unilateral or bilateral. The estimated incidence is 1 per 15,000 pregnancies[2]. Slightly more males are affected than females[3,4]. Fetal pleural effusions are either primary or secondary. Primary effusions are usually chylous called fetal chylothorax. Secondary effusions are more often associated with overall fluid retention seen with non-immune fetal hydrops.

It is thought to be a high incidence of fetal morbidity and mortality associated with fetal pleural effusions because of the associated pulmonary hypoplasia and hydrops. Fetal therapy such as fetal thoracentesis and/or thoracoamniotic shunt should be considered when the hydrothorax is very large or increases over time accompanied by signs of clinical deterioration (*i.e.*, hydrops). However, approximately 9-22% of fetal chylothorax appear to be spontaneous resolution[3,5] with nearly 100% survival[4]. The following case describes a fetus with severe bilateral pleural effusions at 27 weeks' gestation, which then resolved spontaneously at 34 weeks with normal neonatal outcome. This paper was approved by Khon Kaen ethics committee, No. HE531351.

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**Case Report**

A 42-year-old woman, gravida 2, para 1, was referred to the Division of Fetal Diagnosis and Therapy, Department of Obstetrics and Gynecology, Faculty of Medicine, Khon Kaen University at her 27 weeks' gestation on August 28, 2009, because of massive bilateral fetal pleural effusions (Fig. 1, 2), polyhydramnios, and slightly fetal skin edema. The remaining structures of this male fetus were normal. All routine antenatal screenings were normal. Genetic cordocentesis was performed and subsequently showed a normal 46, XY karyotype with negative TORCH (toxoplasmosis, rubella, cytomegalovirus, and herpes simplex) titer. After counseling the couple, they chose to do serial thoracentesis, started from 29 weeks. Because of the history of membrane's leakage at the appointed date, thoracentesis was cancelled. The patient was admitted, 6 mg intramuscular dexamethazone was administered every 12 hours for four doses to enhance fetal pulmonary maturation. Ampicillin and erythromycin were given to prevent intrauterine infections. After admission for three days, fetal health assessment was normal, no more membrane leakage and thoracentesis was planned at 31 weeks.

The ultrasound examination performed at 31 weeks revealed the decreased fetal pleural effusions with more lung expansion, thoracentesis was again cancelled. Subsequent weekly ultrasonographic studies were done and failed to reveal evidence of

fetal pleural effusions at 34 weeks (Fig. 3). The pregnancy continued with normal fetal growth. At 39 weeks, the patient delivered by cesarean section of a male infant weighing 3,568 gm due to elderly gravida and suspected cephalopelvic disproportion. Neonatal examination revealed a completely healthy infant with normal respiration. Both mother and infant were discharged in good health on postpartum day eight. On the follow-up, six months later, the baby was healthy with no respiratory problem.

**Discussion**

Etiologies for fetal pleural effusions include fetal chromosomal abnormality, fetal arrhythmia, intrathoracic mass, intrauterine viral infection, hydrops fetalis and chylothorax. In many cases, the cause is unknown. Lien JM et al[6] reported a case of a fetus with a large left pleural effusion and a completely collapsed left lung. The cause of the case was unknown. Serial ultrasound documented spontaneous resolution of fetal pleural effusion at 35 weeks with normal neonatal outcome.

Weber AM et al[7] reported a case of fetal pleural effusion, diagnosed by ultrasound in the second trimester, underwent spontaneous resolution without adverse effect on lung development. Optimal management had not been defined. Because the natural history of fetal pleural effusion was unknown, observation with serial ultrasound was an alternative to in utero therapy.

Agrawal R et al[8] reported two cases of fetal pleural effusions. The first case was referred due to left sided fetal pleural effusion at 17 weeks of gestation with unknown origin. The repeat ultrasound at 20 week showed complete resolution of effusion. No recurrence was noted thereafter until delivery. The second case detected a significant fetal pleural effusion on the left side at 22 weeks. At 24 weeks, there was complete resolution and no recurrence of effusion occurred thereafter until delivery. Both cases delivered healthy female baby with normal Apgar scores. There was no malformation in the baby and postnatal course was uneventful.

Tarim E et al[9] reported a case with an isolated right-sided fetal pleural effusion in which spontaneous resolution occurred at 23 weeks of gestation. However, the effusion reappeared bilaterally at 34 weeks. The authors concluded that serial ultrasonographic evaluation of the fetus should be continued even if a spontaneous resolution of a preexisting pleural effusion had occurred.

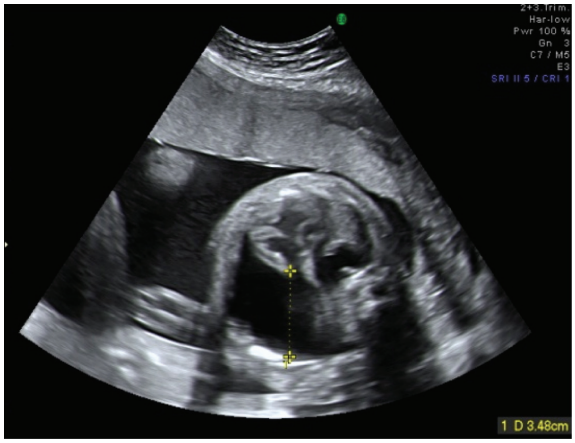


**Fig. 1** Transverse view, pleural effusion of left lung at 27 weeks' gestation

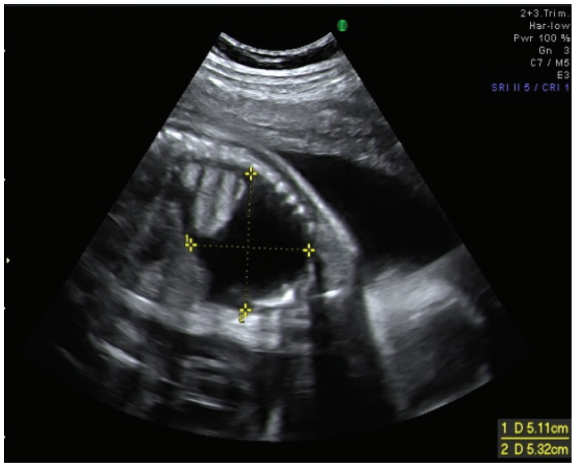


**Fig. 2** Longitudinal view, pleural effusion of left lung at 27 weeks' gestation

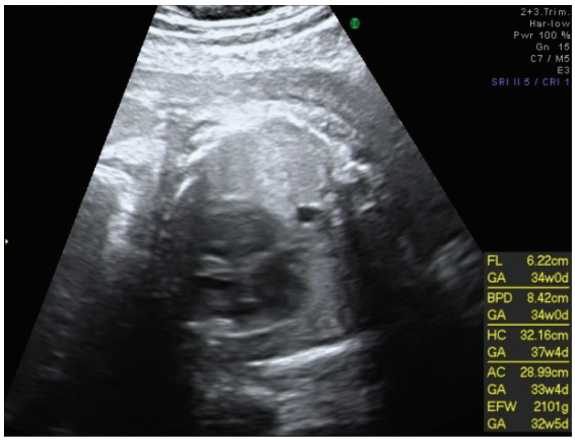


**Fig. 3** Transverse view, no pleural effusion at 34 weeks' gestation

In the presented case, the ultrasound examination revealed massive bilateral fetal pleural effusions. The cause may be undetected or unknown. Serial ultrasound examinations failed to reveal evidence of fetal pleural effusions at 34 weeks. Dexamethazone, given to enhance fetal pulmonary maturation, may cause fetal lung expansion and finally decreases fetal pleural effusions. Sherer DM et al[10] reported a case of a fetus with bilateral pleural effusions with unknown cause. The effusions resolved completely at 34 weeks after giving dexamethazone due to preterm labor.

The therapeutic approach adopted in the management of fetal pleural effusions can be either thoracentesis or thoracoamniotic shunt[4], which can reduce fetal lung compression and fetal mortality. However, such procedures can cause serious complications such as intraamniotic infection, preterm labor, preterm birth, or even fetal death. Besides, the authors cannot predict the result of thoracentesis because of rapid reaccumulation within a short time[4]. When isolated fetal pleural effusions were detected with unknown origin, the patient should be kept under follow-up with regular ultrasounds as spontaneous resolution can occur. Finally, there is a need to develop a study about the role of dexamethazone for reducing fetal pleural effusions.

**Conclusion**

The management of fetal pleural effusions can be either thoracentesis or thoracoamniotic shunt. However, these procedures can cause serious complications. Regular ultrasounds are one of the supportive options as spontaneous resolution can occur in 9 to 22% of the cases.

**Potential conflicts of interest**

None.

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## ภาวะน้ำในโพรงเยื่อหุ้มปอดของทารกในครรภ์ที่สามารถหายเองได้: รายงานผู้ป่วย 1 ราย

**ปิยะมาศ ศักดิ์ศิริวุฒโฒ, ถวัลย์วงค์ รัตนสิริ, รัตนา คำวิลัยศักดิ์**

*สตรีตั้งครรภ์ครั้งที่ 2 อายุ 42 ปี ตรวจพบว่า ทารกในครรภ์มีน้ำในโพรงเยื่อหุ้มปอดทั้งสองข้าง หลังจากติดตามโดยการตรวจคลื่นเสียงความถี่สูงพบว่า ปริมาณน้ำในโพรงเยื่อหุ้มปอดลดลงเรื่อย ๆ จนหมดไปก่อนคลอด การตรวจติดตามทารกหลังคลอด 6 สัปดาห์ พบว่าทารกมีการเจริญเติบโตเป็นปกติและไม่มีปัญหาด้านการหายใจ ภาวะน้ำในโพรงเยื่อหุ้มปอดของทารกในครรภ์ เป็นสาเหตุทำให้เนื้อปอดถูกกดเบียดมากจนเกิดปัญหาด้านการหายใจหลังคลอด รุนแรงถึงขั้นสูญเสียชีวิตได้ การตรวจคลื่นเสียงความถี่สูงเป็นระยะ เป็นทางเลือกหนึ่งในการดูแลภาวะดังกล่าว เนื่องจากพบว่า 9-22% ของภาวะน้ำในโพรงเยื่อหุ้มปอดของทารกในครรภ์สามารถหายเองได้*