

Very Echogenic Amniotic Fluid and Its Clinical Significance: A Case Report

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Received 2016 May 02; Accepted 2016 May 18.

Abstract

Introduction: The incidence of very echogenic amniotic fluid on ultrasonographic examination at term pregnancy is very low and its causes and significance in outcome of pregnancy are not well-understood. In previous studies, meconium was considered to be an important cause of very echogenic amniotic fluid and follow-up with amniocentesis and fetal well-being tests were recommended; however, in recent studies vernix caseosa has been identified to be an important cause. As a result, termination of pregnancy should not be performed due to discovery of ultrasonographic echogenic amniotic fluid because it is not associated with adverse pregnancy outcomes.

Case Presentation: We report a single term pregnancy with very echogenic amniotic fluid diagnosed by ultrasonography that was terminated by cesarean section.

Conclusions: There were no adverse outcomes for the mother or neonate and the amniotic fluid was clear at the time of delivery.

Keywords: Very Echogenic Amniotic Fluid, Term Pregnancy, Pregnancy Outcome

1. Introduction

Amniotic fluid in ultrasonography has been shown to be anechoic and echogenic; however, the significance of echogenic amniotic fluid is not obvious (1). Very echogenic amniotic fluid has been attributed to meconium, blood or vernix caseosa (2). Diagnosing meconium in amniotic fluid is a problem and there is a concern about fetal well-being, fetus tolerance for labor and intrauterine fetal death (3).

In primary reports where echogenic amniotic fluid had been diagnosed by ultrasonography, amniocentesis or amnioscopy, fetal well-being tests (non-stress test and biophysical profile) were recommended to rule out meconium (3). However, the results of recent studies have indicated that echogenic amniotic fluid at term pregnancy is not associated with meconium and adverse pregnancy outcomes; therefore, prenatal management of these pregnancies should not be changed (4). In this report, we explain a term gestation with very echogenic amniotic fluid that was associated with neither meconium nor adverse pregnancy outcomes.

2. Case Presentation

A 28-year-old woman, gravid 2, para 1, 38 weeks, with previous cesarean delivery, was followed at Jame Zanan

hospital, Tehran, for routine antenatal management. The cause of her previous cesarean was fetal distress. Very echogenic amniotic fluid was discovered inadvertently during a prenatal ultrasonographic examination. The amniotic fluid index was 15 cm. Fetal growth and umbilical artery Doppler were normal. The results of non-stress test and biophysical profile were also reassuring. There was no complaint of deceleration of fetal movement.

Cesarean delivery was performed at 39 weeks and a male fetus was delivered with an Apgar score of 9 at 1 minute and 10 at 5 minutes. Neonate weight was 3300g with cord PH of 7.35 and base excess of 3.5. Amniotic fluid was completely clear and neither mother nor baby had any problems. They were discharged in good condition two days postoperatively.

3. Discussion

Amniotic fluid is a composite of urine, saliva, lung fluid, vernix, meconium, blood and skin blisters (5). Vernix caseosa is opaque to the ultrasound probe, but is most obvious after fetal movement and then is sitting in dependent portion of the uterus (5).

In 1989, Sepulveda et al. reported that meconium should be ruled out by amniocentesis, amnioscopy or fetal well-being tests (non-stress test and biophysical profile) where echogenic amniotic fluid was present (3).



Figure 1. Very Echogenic Amniotic Fluid



Figure 2. Very Echogenic Amniotic Fluid and the Cross-Section Cord in Amniotic Fluid

However, in recent studies it has been stated that the common cause of third trimester echogenic amniotic fluid is vernix caseosa (95%) while meconium is found in only 5% of the cases (5). Also, in a report by Petrikovsky et al. in 1997, 19 twin pregnancies with anechoic amniotic fluid in 1 sac and echoic amniotic fluid in another sac were studied and clear fluid was found in 32%, vernix in 63% and meconium in 5% of the cases. It was concluded that echogenic amniotic fluid found by ultrasonography was not predictive of meconium (1).

While newer investigation has been focused on correlation between echogenic amniotic fluid particle size in late trimester and fetal lung maturity (6, 7), the present article investigates the causes of hyperechogenicity of amniotic

fluid.

Our report also substantiates that vernix is the main cause of very echogenic amniotic fluid in sonographic examination rather than meconium and that when the non-stress test and biophysical profiles are reassuring, early termination of pregnancy should not be performed.

The present study is in agreement with studies that have shown that the most common cause of very echogenic amniotic fluid in the third trimester is vernix caseosa (meconium being uncommon) and recommends that routine prenatal management of pregnancy should not be altered. On the basis of this finding, induction of labor and cesarean delivery should not be performed.

Footnote

Conflict of Interest: The authors declare that there is no conflict of interest in this study.

References

- Petrikovsky B, Schneider EP, Gross B. Clinical significance of echogenic amniotic fluid. *J Clin Ultrasound*. 1998;**26**(4):191-3. [PubMed: 9572381].
- Tam G, Al-Dughhaishi T. Case Report and Literature Review of Very Echogenic Amniotic Fluid at Term and Its Clinical Significance. *Oman Med J*. 2013;**28**(6).
- Sepulveda WH, Quiroz VH. Sonographic detection of echogenic amniotic fluid and its clinical significance. *J Perinat Med*. 1989;**17**(5):333-5. [PubMed: 2696778].
- Mungen E, Tutuncu L, Muhcu M. Pregnancy outcome in women with echogenic amniotic fluid at term gestation. *Int J Gynaecol Obstet*. 2005;**88**(3):314-5. doi: 10.1016/j.ijgo.2004.11.021. [PubMed: 15733888].
- Benacerraf BR, Gatter MA, Ginsburgh F. Ultrasound diagnosis of meconium-stained amniotic fluid. *Am J Obstet Gynecol*. 1984;**149**(5):570-2. [PubMed: 6742027].
- Ram SHS, Ram S. Role of echogenic amniotic fluid particles and optical density in prediction of respiratory distress syndrome and labor. *Int J Med*. 2010;**5**(1):3-11.
- Ram HS, Ram S. Image j analysis of amniotic fluid echogenicity and labor. *Int J Gynecol Obstet*. 2013;**17**(3):1-7.