Insufficiency of Antenatal Ultrasonographic Examination to Detect Major Congenital Abnormalities in the Presence of Severe Oligohydramnios: A Case Report

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Twenty years old patient was referred to our clinic from another state hospital with the diagnosis of oligohydramnios and intrauterin growth restriction (IUGR). After ultrasonographic examination the decision for abdominal delivery was made with the diagnosis of oligohydramnios plus IUGR and abnormal Doppler measurement. The patient was delivered a baby with multiple congenital abnormalities by cesarean section. These abnormalities were not detected by ultrasonography before the decision of delivery. Therefore we decided to present this case in order to emphasize the insufficiency of ultrasonographic examination to detect major congenital abnormalities in the presence of severe oligohydramnios.

Key Words: Congenital abnormalities, Oligohydramnios

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Introduction

Incidence of oligohdramnios in pregnancy is 1-3%.[1] Fifteen to twenty-five per cent of these cases are due to congenital abnormalities.[2] Obstetric ultrasonography has critical role both in diagnosis of oligohydramnios and congenital abnormalities. In this study, we try to emphasize difficulty of detecting congenital abnormalities with ultrasonography in the presence of severe oligohydramnios.

Case Report

20 years old, primigravid patient with 36 weeks five days of pregnancy, according to last menstrual period, was admitted to our clinic from another state hospital with the diagnosis of oligohydramnios and intrauterine growth restriction (IUGR). In ultrasonography fetal biometry was concordant to 33 weeks. Amniotic fluid was severely low and there were no amniotic pocket free of umbilical cord. Placenta was located on anterior wall and grade 3. Both of the fetal kidneys were larger, hyperechoic and multicystic (Figure 1) and also there was a very small bladder (Figure 2). But those were very difficult to see in the pictures because of the presence of severe oligohydramnios.

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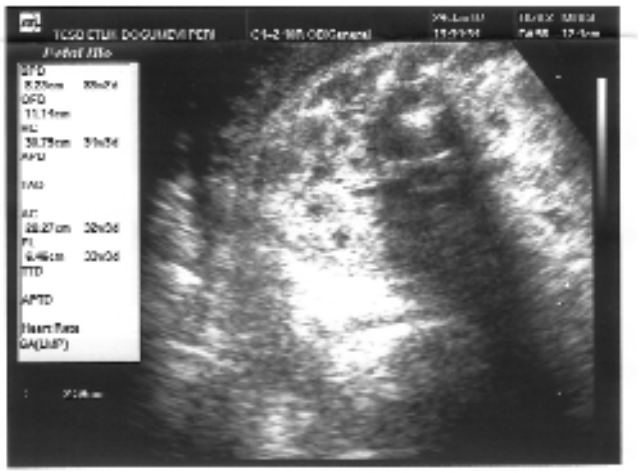

Figure 1: Multicystic and hyperechoic kidneys in ultrasonography

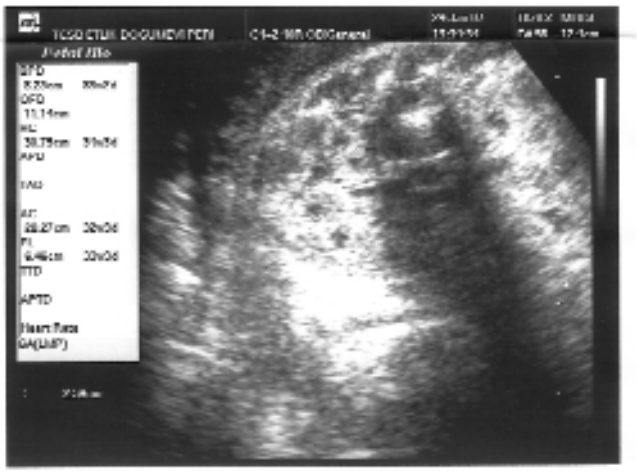

*Figure 2: Fetal bladder (18*24 mm) in ultrasonography between + and x calipers*

Umbilical artery Doppler measurements were abnormal with high peak systolic/end-diastolic ratio (S/D) and high resistive index (RI). According to ultrasonographic findings the diagnosis was oligohydramnios plus IUGR and abnormal Doppler measurements and the patient delivered by cesarean section. With delivery a baby with multiple congenital abnormalities was born. There were bone defects in skull and tissue defect of the skin overlying the bone defect , cleft palate and cleft lip, polydactily, omphalocele, extrophia vesica and epispadias in the baby. (Figure 3 and Figure 4). The newborn was immediately transferred to pediatric surgery but he died there. Therefore we could not do any genetic analysis.

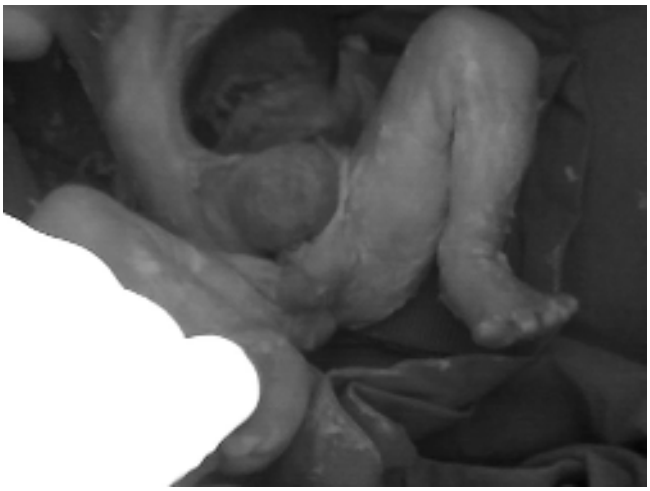

Figure 3: Omphalocele, extrophia vesica and epispadias in newborn

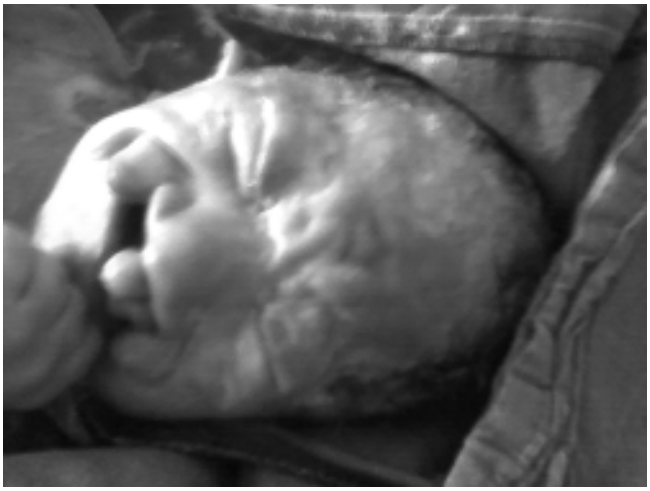

Figure 4: Bilateral cleft palate and lip in the newborn

Discussion

Ultrasonography is one of the primary tool in pregnancy follow up since 1950s when it has first began to be used in obstetrics. Obstetric ultrasonography helped physicians to get more information about the growing fetus. Today, ultrasonography is used for diagnosis of pregnancy, examination of development of the fetus, and detection of fetal malformations. Recently, it has primary importance in detecting fetal malformations since there is a need for a noninvasive and accurate method that can replace invasive techniques. In a review of 36 studies involving more than 900,000 fetuses, an overall sensitivity of 40.4% for detecting fetal abnormalities was noted, with a range of 13.3-82.4%.[3]

In United States it is estimated that more than 50% of pregnant women has ultrasonographic exam during pregnancy.[4] In Turkey obstetric ultrasonography is almost a part of routine pregnancy follow up, but in the case of fetal malformation screening, it must be performed at proper gestational age and in experienced hands.

Oligohydramnios is seen in 1-3% of pregnant women.[5] Oligohydramnios was associated with congenital abnormalities in 15-25% of the cases.[6] Stoll et. al. reported congenital abnormalities together with oligohydramnios in 224 of 225.669 of cases (0.99%). There were multiple congenital abnormalities in 59% of this 224 cases. The most common abnormalities were urinary system, musculuskeletal system, gastrointestinal system, and cardiovascular system abnormalities in this study.[7]

Garne studied 4366 cases in 17 european countries in 2005 and detected 11 severe fetal malformation. Prenatal detection rate was 64% .[8]

Although the detection rate of fetal abdominal wall anomalies by using antenatal ultrasonography was high, we could not detect the presence of omphalocele or extrofia vesica before delivery. Barisic and friends in 2001 studied the role of ultrasonography in screening of abdominal wall defects in different centers. Detection rate of ompholocele with ultrasound was 75% (25-100%), and detection rate of gastroschisis was 83% (18-100%). It was suggested that the difference between different centers were due to the policy of the centers, the equipments used, and experience of the physicians.[9]

In oligohydramnios the risk of congenital abnormalities are higher.[6,10] Also oligohydramnios effects the quality of obstetric ultrasonography which needs both good equipment and experience. Today ultrasonographic fetal anomaly screening still is not recommended for general population.[11]

In this study we tried to emphasize the difficulty of detecting congenital abnormalities in a patient that was complicated with severe oligohydramnios. It is obvious that the reason of this difficulty is the late gestational age at the time of the ultrasonographic examination and presence of severe oligohydramnios.

We could not do genetic analysis because of the immediate transfer of the newborn to pediatric surgery where he died.

But the findings of the newborn might be associated with Trisomy 18 .[12]

In the case of severe oligohydramnios amnioinfusion is an option to increase diagnostic accuracy in ultrasound. Pryde et.al showed that diagnostic amnioinfusion increases the rate of detection of fetal structures from 51% to 77%.[13] Fisk et.al in their study reported that amnioinfusion confirmed 27 case of suspicious congenital abnormalities in 30 patients and detected 5 additional cases that were not seen before.[14] In patients like in our case amnioinfusion in early gestational age may help detecting congenital abnormalities. By this way physician may give better information to the parents about the prognosis of pregnancy.

As a result we can say that in the presence of severe oligohydramnios it is very difficult to detect congenital abnormalities. In such cases, it must be kept in mind that oligohydramnios would develop secondary to congenital abnormalities.

Şiddetli Oligohidramnios Varlığında Antenatal Ultrasonografik İncelemenin Majör Fetal Anomalileri Tespit Etmedeki Yetersizliği: Bir Olgu Sunumu

Yirmi yaşında hasta, hastanemize başka bir devlet hastanesinden oligohidramnios ve intrauterin büyüme kısıtlılığı (IUBK) tanısıyla sevk edildi. Yapılan ultrason incelemesi sonucunda Oligohidramnios ve IUBK ve anormal Doppler ölçümü tanısıyla abdominal doğum kararı alındı. Hastaya sezaryen seksiyo ile multipl konjenital anomalili bir bebek doğurtuldu. Bu anomaliler doğum kararı verilmeden önce yapılan ultrasonografide saptanmamıştı. Bu nedenle, şiddetli oligohidramnios varlığında ultrasonografinin majör konjenital anomalileri saptamadaki yetersizliğini vurgulamak amacıyla bu olguyu sunmaya karar verdik.

Anahtar Kelimeler: Konjenital anomaliler, Oligohidroamnios

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