PP-09 Alobar holoprosencephaly with cebocephaly a rare case report

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Objective: In the embryological period, the neural tube consists of three structures: forebrain, midbrain and hindbrain.[1] Holoprosencephaly is a term that refers to a wide variety of cranial malformations characterized by a problem in dividing the forebrain into two separate hemispheres. Depending on the location and severity of the pathology, it can be classically in three types as alobar, semilobar, and lobar, and additionally, it may be the middle interhemispheric variant of holoprosencephaly, which has been described recently.[2] The division problem in alobar, semilobar and lobar holoprosencephaly is in the basal forebrain. The middle interhemispheric variant, on the other hand, occurs from the fusion of the hemispheres in the parietal and posterior frontal lobes .[3,4] Approximately 80% of affected fetuses progress with craniofacial anomalies. These fetuses may present with cebocephaly, cyclopia, proboscis, microcephaly, ocular hypotelorism, single nostril, cleft palate and lip, or various combinations of these.[2,5] While the frequency of holoprosencephaly is 1 in 250 in abortion materials, its frequency in live births is expressed as 0.6-1 in 10000.[5] Our aim with this case report was to present a case of cebocephaly and alobar holoprosencephaly, which was detected in a patient who applied to our clinic for control in the second trimester of pregnancy, together with its clinical management and findings.

Methods: Computer-based and ultrasonography records of a case with cebocephaly and holoprosencephaly who applied to the Prof. Dr. Cemil Taşçıoğlu City Hospital Perinatology outpatient clinic at the 20th week of pregnancy were scanned retrospectively from the hospital system and the history of the ultrasonography device. Fetal ultrasonography examination was performed using Mindray Resona 7 device and its 1.2-6 MHz convex abdominal probe. Ultrasonography findings and patient history were noted.

Case: An 18-year-old primagravid patient who was pregnant at 20 weeks and 1 day according to her last menstrual period without follow-up applied to us for control. In her anamnesis, she had no additional features other than being cousins with her husband. He hadn't done the screening tests. In the ultrasonography performed on the patient, fetal biometry was compatible with 20 weeks, normal according to the amniotic fluid week, and the placenta had a natural appearance in the posterior region. Both lateral ventricles merged in a crescent shape and were observed in a monoventricular appearance (Figure 1). Fusion was detected in thalamic nuclei. Cranial examination was evaluated as alobar holoprosencephaly. Fetal facial examination revealed a single nostril in the nose and was evaluated as cebocephaly (Figure 2). Interocular distance was 9.6 mm and binocular distance was measured as 23.3 mm. In addition to these, echogenic bowel and double-bubble appearance were observed. There was polydactyly in the hands. The patient and her husband were informed about the existing anomalies and possible prognosis, and amniocentesis was recommended. The family accepted the amniocentesis procedure. No numerical or gross structural chromosomal abnormality was observed as a result of the amniocentesis procedure of the patient. The family decided to terminate. In the histopathological examination performed after termination, abnormal findings in the 524 gram male phenotype fetus were; had six fingers on each hand and a single nostril. The patient, who had no bleeding or additional complaints on the 1st day after termination, was discharged with recommendations.

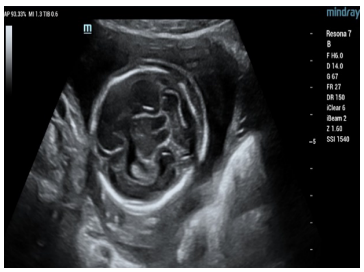

Fig 1. Monoventricular view and fused thalamus

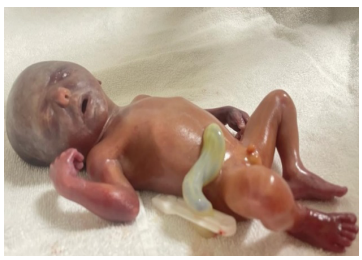

Fig 2. Image of cebocephaly

Results: Holoprosencephaly is a serious malformation that can present with a wide variety of congenital brain anomalies and facial deformities. The overall prognosis for holoprosencephaly depends on the severity of the craniofacial malformation and whether it is accompanied by chromosomal abnormalities or other syndromes. Although long-term survival with alobar holoprosencephaly has been demonstrated previously, it is considered a fatal malformation.[1]

Conclusion: First trimester or early second trimester evaluation is vital for detailing the craniofacial examination and detecting possible cases of holoprosencephaly. The case we have presented once again demonstrates the importance of fetal ultrasonography and detailed cranial examination.

Keywords: Cebocephaly, holoprosencephaly, polydactyly, fetal anomaly.

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PP-10 Phenotypic manifestations of copy number variation in chromosome 11p11.2-p11.12

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Objective: Advanced maternal age pregnancies are an increasing incidence, especially in developed countries. As the age of conception increases, the risk of chromosomal anomalies and genetic diseases also increases. Detection of chromosomal anomalies such as deletion, microdeletion or duplication-microcopying has become possible with developing technology and increasing clinical applications such as new generation sequencing analysis and chromosomal microarray analysis.[1] Chromosome 11 encompasses approximately 135 million DNA building blocks and contains approximately 1300-1400 protein-coding genes.[2] These proteins perform various functions in the body. Changes in the structure or copy number of the 11th chromosome lead to different clinical pictures. The common features of previous cases in this extremely rare chromosomal anomaly are autism, mental and motor retardation, growth retardation, polyhydramnios, dysmorphic findings, hypotonia, and macrosomia.[1,3]

Methods: The computer-based and ultrasonography records of the case, who applied to the Perinatology outpatient clinic of Prof. Dr. Cemil Taşçıoğlu City Hospital at the 13th week of pregnancy, had NIPT due to advanced maternal age and the result was reported as multiple chromosomal anomaly, were analyzed retrospectively from the hospital system and the history of the ultrasonography device. Fetal ultrasonography examination was performed using Mindray Resona 7 device and its 1.2-6 MHz convex abdominal probe. Ultrasonography findings and patient history were noted.

Case: 41-year-old patient with gravida 2, parity 1 applied to our clinic for the first trimester screening test. In the anamnesis taken from the patient, it was learned that she had a history of cranial hemorrhage due to methyl alcohol poisoning 6 years ago, that she had vision loss at a rate of 60%, and that she continued to use alcohol regularly throughout her pregnancy. Non-invasive prenatal testing (NIPT) was recommended to the patient due to advanced maternal age, and a cystic lesion of approximately 5 cm in the left ovary was observed in the left ovary, which was compatible with endometrioma. Amniocentesis was recommended to the patient after NIPT revealed multiple chromosomal anomaly. Amniocentesis was performed on the patient at the 20th week of her pregnancy. In the ultrasonography performed at the 20th gestational week, the fetus was measured as compatible with 22 weeks. Macrosomia, macrocephaly and polyhydramnios were present. TORCH and OGTT test results were normal. Genetic analysis was requested from the parents after the fetus with a normal karyotype result was found to have a 2.65 Mb (303 probe) copy number variation (CNV) increase in the 11p11.2-p11.12 region of 11p11.2p11.12(47814450_50468342)x3 case in array CGH.

After the parents' genetic tests were reported as normal, de-novo mutation was considered and genetic counseling was given to the patient. During this period, all fetal biometric measurements continued as >97th percentile. Fetocyte and termination procedure was performed at the 32nd week of pregnancy with the decision of the pregnant woman and her husband, after the findings of macrosomia, macrocephaly and polyhydramnios were accompanied by ultrasound, regular alcohol use throughout the pregnancy and the presence of 2.65 Mb CNV in the 11th chromosome. On the 1st day after termination, the patient was discharged without any complaints.

Results: In patients with advanced maternal age risk factors, first trimester combined screening test and antenatal screening tests, especially NIPT, are of great importance in determining the risk of fetal chromosomal anomalies. Multidisciplinary management of rare chromosomal anomalies such as the case we have presented, together with Medical Genetics, provides detailed information to families. The increasing complexity of genetic counseling as a result of advanced genetic studies can be overcome by joint studies between branches.

Keywords: Microarray, chromosomal anomaly, NIPT, fetal anomaly, prenatal screening tests.

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