



## Prenatal diagnosis of holoprosencephaly associated and proboscis in a fetus with de novo deletion 18p

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### Objective

Holoprosencephaly (HPE) is the most common forebrain developmental anomaly in humans with prevalence of 1/ 16, 000 in live borns that results from a failure of prosencephalon cleavage. In most of the cases, due to defective primordial mesenchyme, facial anomalies are observed like cyclopia, proboscis, median or bilateral cleft lip/palate in severe forms, ocular hypotelorism or solitary median maxillary central incisor in minor forms. The etiology of HPE is heterogeneous and complex, it can result from environmental factors, chromosomal aberrations such as trisomy 13, 18, 21, triploidy or other genetic defects. Chromosomal aberrations are responsible for 25-40% of all HPE cases. The most distal segments of 18p contains the critical region of HPE and 18p11. 3 region includes TGIF1(HPE4) gene that is associated with HPE phenotypes. 10% of patients carrying a 18p deletion present HPE. In this report, we present severe HPE phenotype with deletion 18p11. 2.

### Methods

A 26 year-old woman at 18th gestational week was referred for prenatal diagnosis because of fetal holoprosencephaly associated with proboscis and intrauterine growth retardation. Amniocentesis were performed for fetal karyotyping. 20 cell were analyzed with GTG banding.

### Results

Fetal karyotype was showed 46, XY, del(18)(p11. 2) in all cell. Parents elected to terminate the pregnancy. Postmortem examination of fetus revealed microphthalmia, hypotelorism, micrognathia and proboscis. Maternal and paternal karyotyping were reported as normal karyotype.

### Conclusion

It is known that the distal 18p deletion is associated with holoprosencephaly but hemizigosity of candidate gene TGIF1 in this region does not confer the phenotype of HPE and only %10-15 of deletion cases have features of HPE phenotype. However mutations in TGIF1 gene generally results with HPE minor forms and were shown only 1% patients of HPE. We reported a severe phenotype of HPE in 18p deletion, confirming that multiple genetic and environmental factors intervene in HPE phenotypes.