Case Report

Anencephaly: Case report and literature review

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Abstract

Anencephaly is a lethal fetal neurological malformation. This malformation accounts for 40% of neural tube malformations. The diagnosis is based on the ultrasound of the 1st trimester between the 11th and the 14th weeks of amenorrhea by the discovery of an encephaly which results in the visualization of the ossification of the cranial box and therefore of the impossibility to measure the biparietal diameter. The objective of our work is to highlight the importance of an early ultrasonic diagnosis of anencephaly, which could help in a thorough evaluation and active management. Also, the main role of folic acid in the prevention in neural tube defects.

Introduction

Anencephaly is a congenital malformation of the central nervous system that results to the failure of closure of the cranial end of the embryologic neural tube, usually occurs between the 23rd to 26th days after conception. Anencephaly represents 40% of neural tube malformations, which is the second leading cause of nervous system abnormalities after spina bifida. The prevalence rate is 1/1,000. The diagnosis is made by the 1st trimester ultrasound between the 11th and 14th week. The causative factor is multifactorial (iatrogenic, toxic, metabolic, nutritional, and exceptionally chromosomal).

Case report

Mrs KD, 24 years old, rural geographical origin, the patient had no previous medical or surgical history, no notion of consanguinity, gravida 2, para 2. Her G1 was by vaginal delivery with episiotomy of a live born male of 3050g, G2 is the current pregnancy estimated at 36 weeks given by her last menstrual period. At 25 weeks of the pregnancy, she had gestational diabetes put on insulin therapy in the form of twice daily injections of insulin Glulisine and once daily injection of insulin Lispro was started and dietary advice given, without notion of folic acid in preconception or in the 1st trimester. Came to obstetric emergencies at the start of labor. There was no other significant past, obstetric, or surgical history. On general examination, the patient was clinically stable, height at 157cm, weight at 80kg, no edema of the lower limbs, blood pressure at 11/06 cmHg, 88bpm, 98% saturation and temperature at 36.7

Discussion

Anencephaly is a defect in the closure of the neural tube during fetal development. A baby born with anencephaly is usually blind and deaf. It is one of the most common types of neural tube defects, after spina bifida, affecting approximately 1 in 1,000 pregnancies. Diagnosis is made by 1st trimester ultrasound.
The prevalence of these malformations varies from 4 to 15% (2.1% in the general population). The increased risk of malformation appears for modest hyperglycemia values. In absolute value, this risk elevated because it increase from 2% for an HbA1c of 5.5%, to 6% for an HbA1c of 9% [7]. Fenugreek (Trigonellafoenum-graecum L.), in Arabic Helba, is one of the oldest medicinal and culinary plants, it is widely used in Morocco. It is an annual herb belonging to the Fabaceae family that is found all over the world, but it is of Mediterranean origin. In herbal medicine, the seeds of the plant are indicated in diabetics, for controlling glucose and cholesterol levels as well as for pregnant and lactating women [8,9].

In the Maghreb region, it is used in the treatment of wounds, diarrhea, acne, dehydration, anemia, bronchitis, rheumatism, stomachaches, constipation and arterial hypertension, either in the form of decoctions or of seeds reduced to flour and mixed with the honey [10]. The teratogenicity effects of fenugreek in humans and animals have been demonstrated in several prospective studies. Also, cases of pronounced birth defects such as hydrocephalus, anencephaly, cleft palate and spina bifida have been found in women who consumed fenugreek seeds during pregnancy. Various studies have shown that fenugreek is neuroprotective [11,12], although, the developing nervous system appears to be particularly sensitive to the toxicity of fenugreek, as previously reported in Moroccan studies showing that children are more likely to develop encephalopathy such as hydrocephalus, anencephaly and spina bifida. Antenatal diagnosis of anencephaly in the first trimester is most successful for fetal abnormalities. In the second trimester ultrasound, the typical appearance of anencephaly is a sign of “frog eyes”, due to the absence of visible brain tissue above the eye sockets. Hydramnios is defined as a pathological increase in the volume of amniotic fluid during pregnancy, the diagnosis is made by ultrasound. Hydramnios is associated with anencephaly in 30 to 50% of cases. The contributing factors include secretion of cerebrospinal fluid into the amniotic cavity, lack of normal swallowing, lack of absorption of amniotic fluid by the hypoplastic lungs and excessive urine production due to lack of antidiuretic hormone. Hydramnios is the most common presentation of anencephaly before childbirth. Anencephaly is a uniformly lethal anomaly. It appears to be of multifactorial origin, so they are advised to consume foods rich in folic acid at least 3 months before planning their pregnancy and to maintain an appropriate intake if they are of childbearing age or patients desirous of birth. Following studies carried out on primary and secondary prevention, Canadian, British and American organizations recommend that women of childbearing age consume 0.4mg to 0.8mg / day of folic acid to reduce cases of anencephaly. For women who already have an affected child, the recommended dose is between 0.8 and 4mg.

**Conclusion**

Anencephaly is a lethal malformation characterized by an absence of closure of the anterior of the neural tube with aplasia of the cortical architecture and absence of formation of the cranial box. It is the second neural tube defect after spina bifida. Its antenatal diagnosis is mainly based on obstetric ultrasound. The prognosis for anencephaly is grim. It is a uniformly lethal defect. Termination of pregnancy is the

most logical approach, but is not practiced in our context due to religious beliefs. Unfortunately, in the absence of curative treatment, prevention is therefore essential and creating awareness among the people about the preventable causes of nutritional deficiency. Therefore, Folic acid plays an important role in preconception or in the 1st trimester.

References


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