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The Importance Of Prenatal Care In The Early Diagnosis Of Fetal Malformations: A Case Of Cyclopia (A Congenital Malformation In A Fetus With Only One Eye) At The Mother And Child Health Center (CSME) In Zinder, Niger

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Resume :
La cyclopie est une malformation congénitale caractérisée par la présence d'un seul œil au milieu du visage. C'est un type d'holoprosencéphalie alobaire. Associée souvent à d'autres malformations, la cyclopie est une malformation incompatible avec la vie. L'échographie est l'examen clé du diagnostic d'où l'intérêt de cet examen au cours de suivi prénatal. Nous rapportons un cas de cyclopie diagnostiqué à l'échographie et prise en charge tôt par interruption médicale. L'objectif était de souligner l'intérêt de suivi prénatal.

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I. Introduction :

Cyclopia is a severe form of alobular holoprosencephaly, characterized by the fusion of the two eye sockets and the presence of a single eye in the middle of the forehead [1,2]. It is a rare congenital malformation with an incidence ranging from 1/13,000 to 1/20,000 births [3]. Cyclopia is the result of incomplete division of the forebrain into right and left hemispheres between the 18th and 28th day of embryonic life [4]. The origin of the anomaly remains unknown. However, the existence of environmental and genetic factors and chromosomal abnormalities are thought to be determining factors, making cyclopia a condition that includes a polymalformative syndrome [5]. Cyclopia can be diagnosed by ultrasound during pregnancy monitoring. We report a case of cyclopia in a fetus discovered by ultrasound during prenatal monitoring in our department at the CSME in Zinder. The objective was to report on the importance of prenatal monitoring in the diagnosis of fetal malformations.

II. Observation :

Ms. S.F., aged 27, third pregnancy and three births; mother of two living children, with no known gynecological or obstetric history. The interview revealed no consanguinity between the parents. There are no malformations in her two siblings. There is no history of malformations in the family, nor any history of diabetes or medication use during pregnancy. She received prenatal care at our department at the CSME in Zinder, Niger. On obstetric examination, the pregnant woman was in good hemodynamic and respiratory condition, the uterine height measured 20 cm, fetal heart sounds were present, and the rest of the examination was normal. The ultrasound requested as part of the prenatal care assessment (SPN) revealed a single fetus at 23 weeks of amenorrhea (SA) with a facial malformation: total absence of the nose and eye sockets and the presence of a round, heterogeneous structure that appeared to be the eyeball with an elongated median frontal structure (proboscis). Other cerebral ventricular, renal, and spina bifida malformations were also present. The prenatal hematological, biological, and biochemical tests (complete blood count, syphilis serology, HIV, blood sugar, HBS antigen) were normal. Her blood type is A positive. The diagnosis of cyclopia in a live fetus at 23 weeks of gestation was confirmed, with associated malformations of the kidneys and cerebral ventricles. We informed the couple about the condition of the pregnancy, in which the fetus had a cyclopia-type malformation,

and counseling was provided to improve the mental health of the couple, especially the mother, and to explain the procedure for terminating the pregnancy according to the recommended protocol. Another field assessment was requested (transaminases, uremia, creatinine, D-dimers). She was given the misoprostol protocol alone, with a first dose of 200 µg at 12 noon and a second dose of 200 µg at 6 p.m., and at 6 a.m. she delivered a stillborn male fetus weighing 610 g. On examination, the fetus presented with a facial malformation with a single eye, the presence of an appendage (proboscis) on the forehead, and an arhinia suggestive of a diagnosis of cyclopia. The rest of the examination from head to limbs revealed no clinically visible malformations. Examination of the placenta revealed no abnormalities.

Fig. 1 : Expulsion of a stillborn fetus with facial malformation, featuring a single eye in the middle of the forehead, a complete absence of the nose and eye sockets, and a protrusion on the forehead (proboscis).

III. Discussion :

Through this observation, we describe a case of cyclopia in a fetus at 23 weeks of gestation diagnosed during prenatal follow-up. There was no consanguinity between the parents, and no known medical or surgical history. No other malformations were reported by the family. Cyclopia is recognized as a rare congenital malformation of the alobular holoprosencephaly type, with an incidence ranging from 1/13,000 to 1/20,000 births [3-6]. In the series by Ndiaye et al [7] on six cases of holoprosencephaly, two cases of cyclopia were found. In Niger, few studies have been conducted on cyclopia, and no studies have been conducted in the Zinder region. Holoprosencephaly is a heterogeneous condition characterized by alterations in the cleavage of the forebrain and midline facial abnormalities, and its etiopathogenesis remains poorly understood [1]. It results from a failure of neuroectoderm induction by the prechordal plate during the third week of embryonic life, leading to an abnormality in the development of the prosencephalon consisting of a failure of prosencephalic invagination [8]. Our clinical case is similar to that reported by Uttara, with a cyclopean fetus diagnosed by ultrasound during a 25-week pregnancy check-up and expelled after medical termination of pregnancy with a weight of 600 g, presenting with cyclopia and a fetal horn [9]. The incompatibility of cyclopia with life is linked to various malformations, which requires early diagnosis by ultrasound, computed tomography (CT) or fetal magnetic resonance imaging (MRI) for possible therapeutic termination of pregnancy and management of the parents' mental health [9-10]. This case of cyclopia diagnosed during pregnancy monitoring at the CSME in Zinder highlights the importance of prenatal care, but also, above all, of prenatal ultrasound, an accessible diagnostic tool that can guide therapeutic decisions at a very early stage.

IV. Conclusion :

Cyclopia is a rare malformation. This first case reported to the CSME in Zinder demonstrates the importance of pregnancy monitoring and routine ultrasound scans, which remain the examination of choice for diagnosing this malformation.

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