

H' Shaped Bilobate Placental Partition: A Rare Placenta Variation

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ABSTRACT

Anomalies of placental growth with respect to its shape have been associated with adverse pregnancy outcomes. A very rare form of 'H' bilobate placental partition was observed in a 31-year-old woman presenting at 24 weeks of gestation. This observation was made during a routine obstetrics scan. Sonographic features showed that it was a non-fibroid partition. The placenta featured anterior and posterior portions separated by a large middle, vertical portion. The placenta was antero-posterior semi-circumferential in shape, measuring approximately 16.70 cm in length and 12.48 cm at shorter chorionic plate (minor axis). The middle, vertical part of the placenta partitioned the uterine cavity into two, creating the impression of two separate gestational sacs. The fetus was located in one of these. The patient was eventually delivered through caesarean section at gestational age (GA) of 36 weeks 6 days. The baby had a low birth weight of 1.70 kg. The early detection of this placental anomaly underlines the importance of ultrasonography in obstetrics.

Keywords: Anomaly, Obstetrics, Ultrasonography

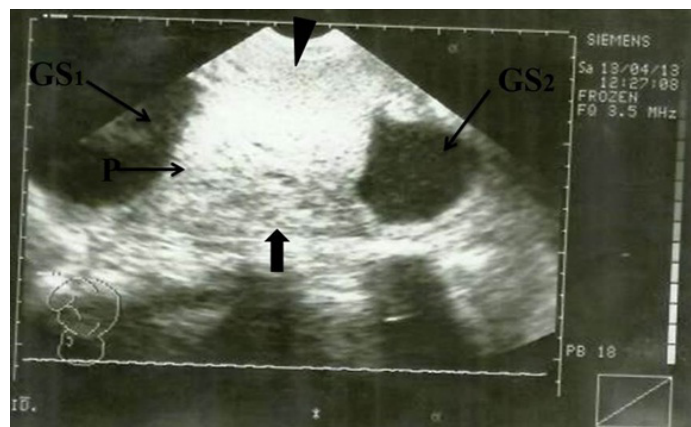
CASE REPORT

A 31-year-old pregnant woman came to the Ultrasound Unit of Crystal Specialist Hospital, Egbeda, Lagos, Nigeria for routine obstetrics scan. Siemens Ultrasound machine (Sonoline 450 SL, made in Germany) with a 3.5 MHz probe was used to perform complete obstetric scan. Transabdominal scan revealed a distinct H-shaped placenta in a singleton pregnancy with breech presentation. Sonographic features showed that it was a non-fibroid partition. The placenta featured an anterior and posterior portions separated by a large middle, vertical part [Table/Fig-1,2]. Cord insertion was eccentric at 3 O'clock position. The placenta had two umbilical arteries and one umbilical vein and a coil index of 1 to 5.87cm. The middle, vertical portion of the placenta partitioned the uterine cavity into two, creating the impression of two separate gestational sacs. The fetus was located in one of these [Table/Fig-1,2].

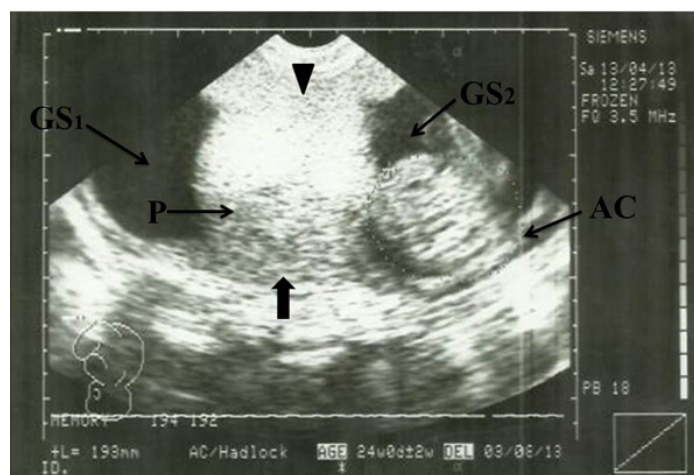
The placenta was antero-posterior semi-circumferential in shape, measuring approximately 16.70 cm in length and 12.48 cm at shorter chorionic plate (minor axis). The fetal abdominal circumference (AC) was 193 mm which corresponded to a GA of 24 weeks and the expected date of delivery (EDD) was 03/08/2013 [Table/Fig-1].

The patient had no history of diabetes mellitus, hypertension, anaemia or tuberculosis. There was no occurrence of bleeding or

diminished twin /'vanished twin' in the first trimester. The patient was eventually delivered through caesarean section at GA of 36 weeks 6 days. The baby weighed 1.70 kg at birth with no apparent congenital malformation. Following delivery the placental weight (untrimmed) was 601.82 gm with presence of two thrombi, seven cotyledons and three infarcts. Disc outline showed no evidence of placental membranacea, percreta, increta or acreta. Disc thickness was 2.87 cm thick having convex-shape, with normal umbilical cord coil index.



[Table/Fig-2]: Sonogram showing H-shaped placenta. P, Placenta (main); Arrow-head indicates anterior segment of placenta; Block arrow indicates posterior segment of placenta; GS1, Gestational sac 1; GS2, Gestational sac 2



[Table/Fig-1]: Sonogram showing H-Shaped Placenta. AC, Abdominal Circumference; P, Placenta (main); Arrowhead indicates anterior segment of placenta; Block Arrow indicates posterior segment of placenta. GS1, Gestational sac 1; GS2, Gestational sac 2

DISCUSSION

The placenta is derived from two separate individuals, the mother and the fetus [1]. The human placenta consists of a villous tree which is bathed in maternal blood. The villous tree connects the fetal and maternal surfaces of the placenta together, thereby facilitating the exchange of oxygen and nutrients between maternal and fetal blood [2]. An irregular maternal utero-placental environment affects macroscopic placental structure causing a change in its shape [3]. Studies have shown that irregular placental shapes are associated with deformation of the placental vascular network and diminished placental efficiency, with potential for negative perinatal outcomes [4].

Various kinds of placental shape abnormality have been reported in literature. They include bi-discoidal, lobed, placenta membranacea, placenta succenturiata, fenestrated placenta, circumvallate and circummarginate placentae [5].

We reported a rare case of 'H' bilobate placental partition in which the fetus suffered the risk of oligohydramnios and insufficient space due to the partitioning of the uterine cavity. This underlying stress necessitated the delivery of the fetus through caesarean section. At birth, it was found to be of low birth weight, weighing 1.70 kg. Fetal growth disturbances like intrauterine growth restriction (IUGR) and small gestational age (SGA) are perinatal complications associated with maternal conditions such as pre-gestational and gestational diabetes [6], anaemia or tuberculosis [7]. However, in this case study, the mother had no such history. However, there is proven association between placenta location and intrauterine growth restriction (IUGR). Lateral placentation has four times the number of IUGR pregnancies compared with anterior or posterior placentation [8]. Other studies have also linked placenta praevia with intra-uterine growth retardation [9,10].

The low birth weight associated with the H-shaped placenta in this case might be related to the abnormal placental structure altering uteroplacental and fetal-placental circulations, resulting in reduced maternal uteroplacental blood flow, caused by insufficient or incomplete trophoblastic invasion of the spiral arteries in the placental bed. This supports assertions that placental structure and function determine the growth and development of the fetus [4]. Improper development and functioning of the placenta affects the fetus, causing prematurity [11] and fetal growth and neuro developmental abnormalities [12].

The H-shaped placental partition described in this case has not been previously portrayed in literature; it is indeed a rare form of placenta. The mechanism of its formation remains a point of scientific interest. It could have been derived by the merging of a succenturiate lobe with a main implantation. It might have also been derived by the merging of the anterior and posterior segments of a bilobed placentation, in which case we might describe it as a rare form of bilobate placenta.

CONCLUSION

The early detection of this placental anomaly by ultrasonography (USG) underlines the importance of USG in obstetrics, especially in the environment in which this case was noted, where USG is

not considered as 'mandatory' due to ignorance and superstitious beliefs. It is important to note that incidents of 'structural-placental-incapability', structural deviation or underlying diseased conditions can affect post-natal development.

Literature is scanty on congenital placental anomalies and anatomic variation. Weight studies and their roles in the possible disruption of nutrient/oxygen transfer to the fetus in uterus may have parallels to small for gestational age (SGA) & IUGR. Post-natal histopathology of syncytiotrophoblast (syncytium) is recommended for future studies to provide a mirror into syndromes occurring in pregnancy. Four (4) dimensional i.e. (3D in real-time) USG reconstruction is also recommended for future encounter.

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FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: Jan 27, 2015
Date of Peer Review: Apr 14, 2015
Date of Acceptance: May 13, 2015
Date of Publishing: Aug 01, 2015