Pregnancy outcome in a bipartite placenta with battledoor cord insertion: A case report:

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Abstract:

Bipartite placenta is a placenta with two roughly equal-sized lobed separated by a membrane. The umbilical cord may insert in either lobe, in velamentous fashion or in between the lobe. The pathogenesis of bipartite placenta is unclear but advanced maternal age, history of infertility may include the risk factors. Here we presented a case of a primi gravid patient who successfully delivered a healthy baby having a "bipartite placenta with battledoor cord insertion" without having any obstetrical complication. She was neither elderly primi nor suffered from subfertility.

Key words: Bipartite placenta, Battledoor cord insertion, Velamentous cord insertion

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Introduction:

A bipartite placenta, is a variation in placental morphology and refers to a placenta separated into two almost equal-sized lobes. The estimated incidence is approximately 4% of all pregnancies.[1] The cause may be poor decidualization or lack of vascularity of a part of the uterus (dynamic placentation theory) and ultrasound may reveals two separate placental discs of nearly equal size.[2,3] The cord is usually inserted to a thin connecting membrabe of chorionic tissue which bridges the two lobes. Less commonly, the cord may insert into one of the lobes. In such a situation, the cord insertion site is too close to the placental margin (usually defined as < 2 cm, although some references define it as < 1 cm). A marginal cord insertion, also known as a battledore placenta, may also increased in the risk of placental abruption, placenta praevia, preterm labor, fetal distress and intrauterine growth restriction, as well as postpartum hemorrhage due to retained bids of placenta.[2–4] A bilobed placenta with abnormal cord insertion is even less common.

This condition may be detected as early as in the first trimester, especially during standard first-trimester screening. Antenatal ultrasound is considered to have variable sensitivity (approx. 69–100%) but a high specificity (even up to 99–100%) to reveal abnormal placental cord insertion sites. The technique is extremely important and Color Doppler is known as a great aid in the identification. As the condition is associated with an increased incidence of various severe obstetric complications, a cesarean section is often considered to avoid the risk.[2,3]

Case report

Mrs. Merry Akhter, 26 years old, Primi gravid patient reported at her 12 weeks of gestation with high grade fever. At that time she was diagnosed as a case of pregnancy with typhoid fever with moderate anaemia which was managed by medical management. Following that event she was under regular antenatal check up. During her antenatal check up at 13 weeks her ultrasonogram report says that placenta is forming anteriorly. Her all other antenatal investigations was normal. Placenta was described two in number, one was anterior and another one was posterior in position reflecting as possibly succenturiate placenta(?) during 19+weeks scan. No other definitive fetal anomaly was found at that time. As the pregnancy advances her antenatal period was uneventful and fetal well being and placental location was monitored closely to prevent antenatal fetal hypoxia as well as intrapartum and postpartum haemorrhage. During 25+ weeks scan placenta was found to be developed anterolateral position. Same finding was found during 29+ weeks scan also. Fetal growth was corresponding to the gestational age without any features of hypoxia or IUGR. At 35+ weeks of pregnancy ultrasound d scan clearly says that the she is having a bilobed placenta in anteroposterior and right lateral position but internal os of the cervix was free of placental tissue (Fig:1). Her pregnancy was running uneventful till 37 weeks of gestation. Suddenly she developed less fetal movement but ultrasound biophysical profile was 8/8 with turbid appearance of amniotic fluid. On 23.08.23 at 10 pm she

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admitted in this hospital with labour pain. Her labour progesses satisfactorily and she delivered out a healthy male baby of 3.1 kg with apgar score: 7/10 in 1st min and 9/10 in 5th minute. Placenta, cord and membrane was delivered out by controlled cord traction carefully. After the delivery of the placenta it was checked and we found two completely equal sized placental lobe connected by thin membrane (Fig:2). Umbilical cord was inserted at the thin placental membrane which exactly describes the bipartite placenta with battledoor insersion of umbilical cord (Fig: 3).

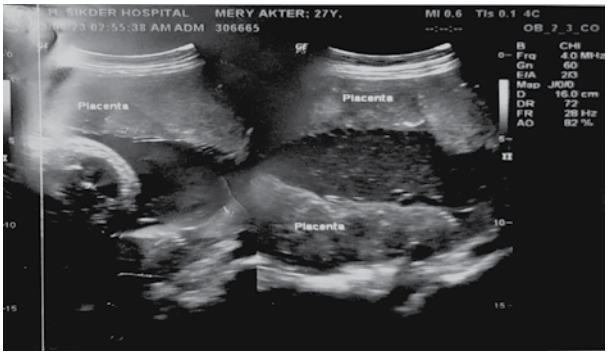

Fig. No. 1: placenta is in both anterior and posterior uterine wall and internal os of cervix was free of placental tissue.

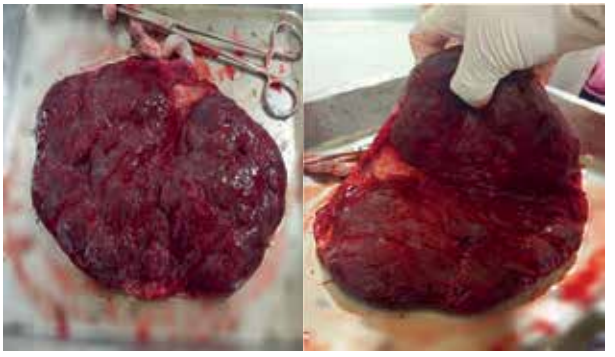

Figure No. 2(a), 2(b): Bipartite Placenta of the presented case following delivery where two equally sized placental lobes are seen and umbilical cord is inserted into the membrane.

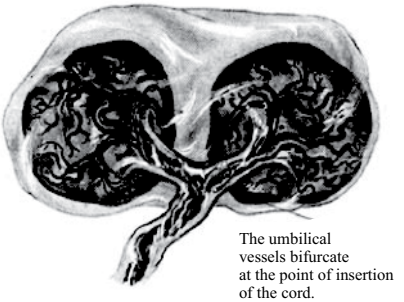

Figure No. 3: Schematic diagram of Bipartite Placenta showing division of umbilical vessels through the cord insertion

Discussion

Placenta is the sole interface between the mother and developing fetus. Placenta ensures the proper growth of embryo. Umbilical cord is the source of contact between fetus and placenta. Any pathological event may hamper the normal function of the placenta and may cause severe abnormalities which may lead to adverse fetal outcome. Some structural changes of placenta may cause poor fetal outcome.[5] The location of umbilical cord attachment to the fetus and placenta is also important. Placental attachments can be in the center, off center, on the edge, or in the membranes.[6,7]

The placenta plays a crucial role in the maternal-fetal environment throughout the pregnancy. The prevalence of velamentous and marginal insertions of the umbilical cord was associated with an increased risk of adverse perinatal outcomes.[8] Furthermore, marginal cord insertion <0.5 cm from the placental margin may leads to the development of velamentous cord insertion later in pregnancy.[3]

There are many factors that can affect fetal wellbeing during labor and delivery, such as good functioning of placenta and good supply of nutrients and oxygen from the maternal blood circulation. Inadequacy in maternal supply or placental function puts the fetus at risk of asphyxia that may be indicated by abnormal heart rate pattern. As fetal distress was the most common complication, it suggests there may be some form of uteroplacental insufficiency in pregnancies with battledore placenta which manifests itself during the stress of labor in the form of abnormal fetal heart rate patterns. Marginal cord insertion could contribute to non-reassuring tracing that requires emergency delivery.[5]

Intrauterine growth restriction (IUGR) represents lower birth weight from the average one. Fetal growth depends on the nutritional supply through the placenta to the fetus. Marginal cord insertion may reduce the nutritional supply to the fetus due to lack of placental transport capacity for battledore insertion of cord. Velamentous placental cord insertion is associated with increased rate of low birth weight.[9]

Studies revealed that birth weight of baby and placental weight are reduced in battledore insertion of cord. Velamentous placental cord insertion is associated with increased rate of low birth weight.[9]

Studies have shown an association between preterm labor and marginal insertion of cord.5 Our presented case has also had the history of preterm labour (36 weeks) as she delivered before 37 weeks of gestation.

Conclusion

Bipartite placenta is not associated with an increased risk of fetal abnormalities.10,11 However it is associated with increased risk of 1st trimester bleeding, polyhydramnios, placental abruption, retained placenta or type II vasa

previa.[10-12] So, sonographic monitoring of placental development from the very beginning of pregnancy can prevent the incidence of fetal hypoxia by early recognition of placental abnormalities and can reduce the incidence of unexpected post partum haemorrhage.

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