



CIRCUMVALLATE PLACENTA COEXISTING WITH A PLACENTA SUCCENTURATE LOBE SEPARATION - A RARE ANOMALY OF THE PLACENTA: A CASE REPORT

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Abstract

Defective placenta formation and its blood vessels underpins some pregnancy disorders such as pre-eclampsia, intrauterine fetal growth restriction, retained products of placenta, vasa previa, etc. Circumvallate placenta is a rare form of extrachorial placenta with a raised placental margin in an annular shape. Succenturiate lobes of the placenta is the presence of one or more accessory placenta lobes resulting from focal areas of non-involution of the chorionic laeve. The patient described in this case report is a 34year old female who presented with recurrent vaginal bleeding at 34 week gestational age. Upon evaluation, a diagnosis of circumvallate placenta with marginal placenta bleeding coexisting with asuccenturate placenta lobewas made. She had a successful abdominal delivery. This report revealed that despite these coexisting placenta anomalies, the outcome to both the mother and her baby were favorable. This report will contribute significantly to our understanding of the anomalies associated with placenta. Succenturiate placenta and circumvallate placenta, or a combination of both, should be suspected in women with persistent vaginal bleeding in any trimester. Therefore, a history of bleeding and/or retained placenta fragments in previous pregnancies with bleeding in index pregnancy should raise a very high index of suspicion of placenta abnormalities until proven otherwise. Early presentation, accurate ultrasonographic/clinical diagnosis and urgent intervention remain the cornerstone for control and prevention of unfavorable pregnancy outcomesregarding placenta anomalies.

Keywords: Circumvallate, Succenturate, Lobe, Separation, Placenta.

INTRODUCTION

The placenta is a materno-fetal organ which begins developing at implantation of the blastocyst. Physiologically, it serves as the organ for the exchange of nutrient and waste materials between mother and fetus, the secretion of pregnancy-regulating hormones, and the maintenance of immunologic barrier (Graham and Burton, 2020; Ahokas and McKinney, 2008). Defective formation of placenta and its blood vessels underpin some pregnancy disorders such as pre-eclampsia, intrauterine fetal growth restriction, retained products of placenta, vasa praevia, etc (Turco and Moffett, 2019; Suzuki, 2008; Kumari *et al.*, 2015). Circumvallate placenta is a rare form of disorder where the placenta has a raised margin and is annular in shape due to the smaller size of the chorionic plate relative to the basal plate. This mis-alignment makes it susceptible to bleeding in its margin. Thus, circumvallate placenta may be associated with recurrent vaginal bleeding during pregnancy, premature rupture of the membranes, preterm delivery, placental abruption and ultimately poor pregnancy outcomes (Suzuki, 2008). The placenta succenturiataor, succenturiate placenta is the presence of one or more small accessory placental lobe, which develops in the membranes at a distance from the periphery of the main placental disc usually having vascular connections of fetal origin which runs through the membranes connecting it to the main placenta. Its overall incidence is approximately 3 per 1000 pregnancies.5Antenatal diagnosis is difficult and may be quite confusing on ultrasound scans, thus is often detected by placental examination after delivery (Suzuki, 2008; Harris and Wells, 1997).

There are limited reports of co-occurrence of circumvallate placenta with a succenturiate placenta lobe. This report described a 34 year-old multipara, who presented with antepartum haemorrhage and was diagnosed with circumvallate placenta with coexisting succenturiate lobe separation.

CASE PRESENTATION

Mrs. E. L. was a booked 34 year-old G5P2 (2A) who presented to our emergency unit at 34 weeks gestational age with vaginal bleeding of 24 hours duration. She had the first bleed episode 24 hours earlier which resolved spontaneously, but recurredagain an hour before presentation. Bleeding was of sudden onset, mild, not associated with passage of blot clot or abdominal pains. She had satisfactory perception of fetal activities. She booked index pregnancy in our facility, with normal antenatal parameters. She has had two spontaneous vaginal deliveries, the first was complicated by postpartum hemorrhage due to retained fragments of placenta which was discovered a few days after delivery. General examination findings were normal, pulse rate was 92/min; blood pressure was122/80 mmHg, respiratory rate was 22c/min, SPO2 was 99%, and Temperature was 36.7°C. Uterus was 34-week size, soft and no tenderness. Fetus was inbreech presentation, with normal fetal heart sounds (132 to142 beats/min).Full blood count and urinalysis were essentially within normal limit. Ultrasound scan done at presentation revealed multiple small coexisting intramural and subserous fibroids, a singleton live intrauterine fetus with estimated fetal weight of 2469g, fundally sited circumvallate placenta, with anterior succenturiate lobe located about 10cm from the main placenta, reported to be apparently detached from the uterine wall but there were no retroplacental clots. The patient received

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prophylactic steroid, starting at the initial presentation, and had an Emergency caesarean section. Intra-op findings: clean pelvis, gravid uterus, four small size fundal intramural and subserous uterine fibroids largest 3x2cm, poorly formed lower uterine segment, clear liquor and a single live female baby of 2.3kg with good APGAR scores was extracted in extended breech presentation. Placenta was fundally sited with a succenturiate lobe but no identifiable retro placental clots or clear evidence of separation. Estimated blood loss was 750mls. The post-operative period was uneventful in terms condition of the mother and baby and they were discharged on the third day post-op day. Her post-op PCV was 29%.

Clinical laboratory parameter

Table 1. Clinical laboratory parameters of the patient

Test	Results	Normal Range
Electrolyte, urea and creatinine		
Sodium	138	(135-145mmol/L)
Potassium	3.7	(3.5 - 5.5mmol/L)
Chloride	98	(96 - 106mmol/L)
Bicarbonate	26	18 - 28mmol/L)
Urea	21	(15 - 39mg/dl)
Creatinine	0.8	(0.5 - 1.4mg/dl)
Malaria parasite	+	
Full blood count		
PCV	33%	(36 - 50)
Hemoglobin	10.9g/dl	(12.0 - 16.0)
WBC count	8,800/mm ³	(4000 - 10000)
Neutrophils	59%	(55 - 70)
Lymphocyte	30%	(25 - 40)
Platelets	133,000	(150,000 – 400,000)
Other parameter	Essentially normal	
Urinalysis	Amber, Clear, Blood 3 pluses, other parameters essentially normal	



Fig. 1 and Fig. 2. Ultrasound scan done which showed posterior circumvallate placenta, with an appearance of detachment at the anterior region about 10.2cm from the edge, nil retroplacental collection noted

DISCUSSION

Placental abnormalities are rare sonographic and obstetric findings. Succenturiate lobe of placenta is a very rare entity which is more likely to occur in elderly pregnant women aged more than thirty five years and also in primigravidas (Kumari *et al.*, 2015; Suzuki, 2008; Suzuki and Igarashi, 2008). These placenta anomalies are encountered mostly in high risk pregnancies which might result in antepartum hemorrhage and fetal death, (Seleye-Fubara and Akani, 2005) and are usually missed by trans-abdominal ultrasound. Circumvallate placenta has been recognized as a placenta disease in which the fetal membranes are double back on the fetal aspect along the edges of the placenta. Occasionally, the free edges of the circumvallate placenta may be mistaken as a fetal membrane such as amniotic bands, (Uygur *et al.*, 2014) which may however be excluded by a positive colour doppler interrogation (Chihara *et al.*, 2006). An Asian study conducted among 92 women with circumvallate placenta showed that it was associated with higher incidences of not only adverse maternal events, such as preterm delivery, placental abruption, increased need for emergency caesarean sections, but also adverse fetal events, such as intrauterine growth restriction and neonatal death (Hanako *et al.*, 2020). The main risk of these abnormal placentation is at the time of delivery, underscoring the importance of antenatal diagnosis. The vessels connecting the main placenta with succenturiate placenta may rupture during labour causing placenta abruption and fetal exsanguinations. There is also an increased risk of postpartum hemorrhage from retention of placental products (Nelson *et al.*, 1977; Amol Tilve *et al.*, 2008; Gloria and Philippe, 2002). Several decades ago, placenta anomaly was usually seen as a postnatal diagnosis but recent studies have shown that its antenatal recognition is important in prevention of fetal and maternal complications (Jeanty *et al.*, 1983; Hata *et al.*, 1988; Oyelese and Ananth, 2006; Faye Petersen *et al.*, 2006). Findings from this case showed that despite coexisting succenturiate placenta lobe and circumvallate placenta, fetomaternal outcome were satisfactory, and this could be attributed to the early presentation of the patient, appropriate ultrasound and clinical diagnosis, and prompt intervention via emergency cesarean section. This outcome was in contrast to that obtained in a case reported in Southern Nigeria where succenturiate placenta became complicated by hemorrhagic necrosis and thrombosis, and resulted in fetal death as demonstrated on examination of the placenta as well as fetal autopsy (Seleye-Fubara and Akani, 2005). A very high index of suspicion of succenturiate lobe placenta or circumvallate placenta, or a combination of both as seen in this study, should be assumed in women with history of retained products of placenta in previous deliveries now presenting with vaginal bleeding in index pregnancy.

Conclusion

Succenturiate lobe placenta and circumvallate placenta are usually separate and rare morphological abnormalities, but a combination of both is an even rarer form which poses far greater potential complications. Early presentation, accurate ultrasonographic/clinical diagnosis and urgent intervention are very important factors in the management and prevention of maternal and perinatal morbidity and mortality in these rare cases. A very high index of suspicion of succenturiate lobe placenta or circumvallate placenta, or a combination of both as seen in this study, should be among the differential diagnosis considered in women with history of retained products of

placenta in previous deliveries now presenting with vaginal bleeding in index pregnancy.

Limitation of study: A photograph of the placenta was not obtained. An ultrasound scan picture representation was included.

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