

■ Case Report

Pre-term Placental Calcification in a Patient with Major Placenta Praevia and Lactation with Successful Foetal Outcome: A Case Report

Bamidele Jimoh Folarin, Theresa Azonima Irinyenikan, Felix Femi Akindeju.

1. Department of Obstetrics and Gynaecology, University of Medical Sciences Teaching Hospital Complex, Akure, Ondo State, Nigeria.
2. Department of Obstetrics and Gynaecology, Faculty of Clinical Sciences, University of Medical Sciences, Ondo-City, Ondo State, Nigeria.
3. Department of Radiology, University of Medical Sciences Teaching Hospital Complex, Akure, Ondo State, Nigeria

ABSTRACT

Placental calcification is a physiological ageing process in term pregnancy and a common pathological change in preterm pregnancy. When it occurs before 36 weeks of pregnancy it could serve as a clue for poor fetal outcome. We report a 34-year-old G₄P₀⁺³ admitted at a gestational age of 30weeks and 5days with antepartum haemorrhage secondary to major placenta praevia and preterm placenta calcification who started lactating at the gestational age of 34weeks and subsequently had an elective caesarean section at 35 weeks. She was delivered of a female neonate with a birth weight of 1.95Kg and an APGAR score of 7 at one minute and 8 at five minutes of life. Baby was observed at the neonatal intensive care unit but later developed neonatal jaundice on the third day of life which was managed successfully with phototherapy and was discharged home on the 10th day of life with a birth weight of 2.0Kg.

Keywords: Preterm Placental Calcification, Lactation, Successful Fetal Outcome.

INTRODUCTION

Placental calcification (Grade III) is a physiological ageing process in term pregnancy¹ and a common pathological change of the placenta during pregnancy². It's link with adverse fetomaternal outcomes seems controversial¹. It is known as preterm placental calcification (PPC) when identified before 36 weeks of gestation¹.

with higher incidence of detrimental outcomes and may serve as a diagnostic marker³ or a clue for poor fetal outcome¹. Some studies reported incidence of fetal growth restriction, low birth weight babies and poor APGAR scores^{4,5}, while others disagree with this association¹. Placenta calcifications which are calcium deposits within the placenta, have intrigued investigators for decades⁶. Spirit et; al examined the presence of calcifications using prenatal ultrasound and reported calcifications in over 75% of pregnancies beyond 33weeks of gestation¹. Early preterm placental calcification is associated with a higher incidence of detrimental

Correspondence

Theresa Azonima Irinyenikan,
Department of Obstetrics and Gynaecology,
Faculty of Clinical Sciences,
University of Medical Sciences,
Ondo/University of Medical Sciences Teaching Hospital
Complex, Akure, Ondo State, Nigeria.
Email: irinyenikan2017@gmail.com

outcomes, thus may serve as a diagnostic marker³. In another study, exclusive calcifications were identified in nearly 40% of parturients at term⁴.

Tindall and Scott evaluated over 300 singleton pregnancies and identified placental calcifications in over 75% of postpartum placentae⁸. The human placenta is known to calcify with advancing gestational age and placenta changes identified on ultrasound have been correlated with fetal maturity⁶. Therefore, one may choose to ignore or not to ignore placenta calcifications⁶. In this case, we chose not to ignore it because there was associated history of lactation which occurred at the same time the placental calcifications were picked on ultrasound and had persisted. This could be a sign of pregnancy failure with a sign of imminent fetal loss in the absence of a timely intervention^{9,10}.

CASE REPORT

This was a case of a 34-year-old booked G₄P₀⁺³ whose last menstrual period was 18th of November 2021 with expected date of delivery 25th of August 2022. She registered for antenatal care on the 17th of January 2022 at a gestational age of 8weeks. She had regular antenatal clinic visits which were uneventful until 30weeks + 5days when she presented with painless vaginal bleeding. On examination her general condition was satisfactory. She was not pale; her pulse rate was 90bpm and her blood pressure was 100/70 mmHg. On abdominal examination, her symphysio- fundal height was 31cm, non-tender, fetal heart was heard and regular. She was not a known diabetic, hypertensive nor sickle cell disease patient. There was no history of cigarette smoking nor features suggestive of thrombotic features.

Vaginal examination revealed a perineal pad that was slightly soaked with blood. She was admitted into the antenatal ward and an assessment of antepartum haemorrhage secondary to placenta praevia was made. Investigations ordered for included ultrasound for biophysical profile; full blood count with platelets which showed normal parameters; prothrombin time & partial thromboplastin time which was within normal range; urinalysis which was negative for glucose and protein; electrolyte, urea & creatinine which were within normal range; HIV, HBsAg, HCV & VDRL which were all non-reactive. Her

genotype was AA and her packed cell volume was 35%. 3pints of blood were grouped and cross matched for her. She had intramuscular dexamethasone 6mg 12hourly for 48hours to accelerate lung maturity.

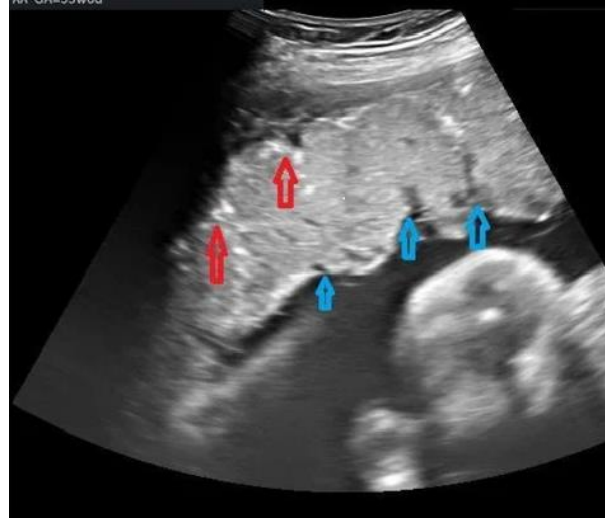


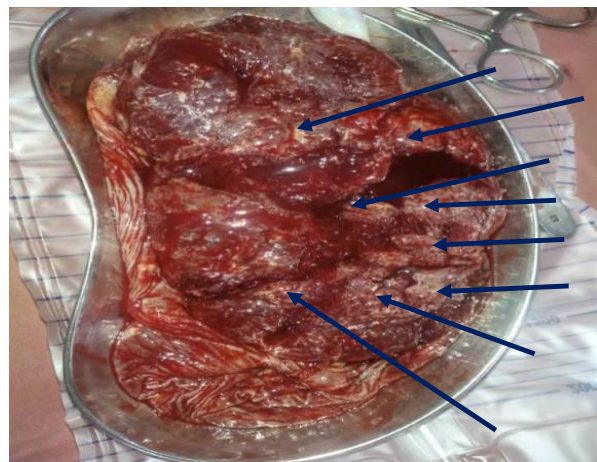
Fig.1 Ultrasound showing calcifications on the placenta at a gestational age of 34weeks: the red arrows showing the areas of the calcifications and the blue arrows showing the cotyledons.

She was compliant with her routine antenatal drugs and was monitored closely on the ward. The ultrasound scan done revealed a viable fetus at 30weeks in transverse lie with major placenta praevia and an estimated fetal weight of 1.38kg. She was monitored by doing a serial antenatal fetal surveillance using a fetal kick chart and ultrasound scan for biophysical profile (BPP) which were satisfactory.

She however complained of copious milky discharge (lactation) from both breasts at a gestational age of 34weeks which were expressible bilaterally. A repeat ultrasound scan at this gestational age revealed a viable singleton fetus at 33weeks in oblique lie with major placenta praevia and multiple cotyledons formation with rim calcification and areas of infarction (Grade III Placenta Praevia Calcification) but the biophysical profile was still satisfactory.

The milky discharge however persisted, and this necessitated planning her for an elective caesarean section which she consented to. Three pints of blood were grouped and cross- matched. She was delivered of a live female neonate who

weighed 1.95Kg with APGAR score of 7 at one minute and 8 at 5 minutes of life. Other intra-operative findings included tortuous looking vessels in the lower uterine segment, major placental praevia covering the entire cervical os with multiple calcifications as depicted in the diagram below which had earlier been picked on ultrasound.



Diagrams showing placenta calcifications after the caesarean section: the blue arrows show the placenta calcifications

Baby was admitted for observation at the neonatal intensive care unit (NICU) but later developed neonatal jaundice on the 3rd day of life and was placed on phototherapy based on the serum bilirubin level. She was managed for 10days and discharged with a birth weight of 2.0Kg. Mother was discharged from the postnatal ward on the 3rd day post operatively but had to remain in the hospital for the care of the baby.

DISCUSSION

We presented a booked 34-year-old G₄P₀⁺³ woman who was managed for antepartum haemorrhage secondary to major placenta praevia who started

lactating at a gestational age of 34weeks and the ultrasound scan performed at this gestational age showed preterm placental calcifications (PPC), the lactation continued which necessitated delivery via an elective caesarean section at 35weeks with a successful foetal outcome.

Some studies have reported an association between preterm placental calcification with the occurrence of poor foetal outcome in the face of lactation during pregnancy^{4,5} while others have reported no relationship^{11,12} this could have been due to variations in the resolution of the ultrasound machines used. With the use of high-resolution ultrasound machines available now, association between preterm placental calcification and fetal outcome should not be taken lightly especially in the face of lactation as seen in this patient because this could further be a pointer to placental dysfunction as a result of hormonal imbalance.

An ageing placenta could be deleterious to the fetus due to the fact that oxygen and nutrients may not adequately reach the fetus and the development, and the life of the fetus could be compromised. Antepartum monitoring of women who start lactating during pregnancy in the face of preterm placental calcifications need close fetal surveillance and prompt intervention in order to reduce fetal loss. The decision to deliver this baby at a gestational age of 35weeks which was close to term was timely and had contributed to the successful fetal outcome reported in this baby.

IMPLICATION FOR CLINICAL PRACTICE

This case of lactation during pregnancy with preterm placental calcification is presented with the aim of creating awareness among obstetricians about this condition as there is need for a high index of suspicion and close monitoring in parturients to prevent perinatal morbidity and mortality.

ACKNOWLEDGEMENT: We are grateful to this patient and her husband who gave us their consent to report this case.

REFERENCES

1. Sudarshan D, Banya D, Soumya RP, Monalisa R, Pramila J, Abheepsa M, Sudhanshu KR. Perinatal Outcomes in Premature Placental Calcification and the Association of a Color Doppler Study: Report from a Tertiary Care Hospital in Eastern India. *Clin. Pract.* 2021; 11: 841–849. <https://doi.org/10.3390/clinpract11040099>.
2. Yanan G, Dechun ZH, He LU, Shuang L, Xuecheng S. Association between calcifying nanoparticles and placental calcification. *International Journal of Nanomedicine* 2012; 7: 1679–1686.
3. Chen KH, Chen LR, Lee YH. Exploring the relationships between preterm placental calcification and adverse maternal and fetal outcome. *Ultrasound obstet Gynecol.* 2011; 37:328-334.
4. McKenna D, Tharmaratnam S, Mahsud S, Dornan J. Ultrasonic evidence of placental calcification at 36 weeks' gestation: Maternal and fetal outcomes. *Acta obstet. Gynecol. Scand.* 2005; 84: 7-10. [Cross Ref] [PubMed]
5. Jamal A, Moshfeghi M, Moshfeghi S, Mohammadi N, Zarean E, Jahangiri N. Is preterm placental calcification related to adverse maternal and foetal outcome? *J. Obstet. Gynacoel.* 2017; 37: 605-609. [Cross Ref] [Pub Med]
6. Fadi MB, Labib MG, Maha M, Anwar HN, Hani MT, Dima J. To ignore or not to ignore placental calcifications on prenatal ultrasound: A systematic Review and Meta-analysis. *The journal of maternal-fetal & neonatal medicine: the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania Perinatal Societies, the International Society of Perinatal Obstetricians* 31 (6):1-21. DOI:10.1080/14767058.2017.1295443.
7. Spirit BA, Cohen WN, Weinstein HM. The incidence of placental calcification in normal pregnancies. *Radiology* 1982; 142:702-73.
8. Tindall VR, Scott JS. Placental calcification a study of 3025 singleton and multiple pregnancies. *J Obstet Gynaecol Br Commonw.* 1965; 72:356-73.
9. Mary FP, Pregnancy and lactation: Physiological Adjustments, Nutritional Requirements and Role of Dietary Supplements. *The Journal of Nutrition*, 2003; 133(6): 19975 - 20025.
10. Williams F. In *Ganong Review of Medical Physiology*. 2003 edition and published by The McGraw Hill Companies Pg. 455-456.
11. Zhang LY, Yu YH, Hu ML. The relationship between placental aging, Doppler indices of umbilical artery and fetal prognosis. *J. Pract. Obstet. Gynecol.* 2005, 5, 315–318. [Google Scholar]
12. Vosmar MB, Jongsma HW, Dongen PW. The value of ultrasonic placental grading: No correlation with intra-uterine growth retardation or with maternal smoking. *J. Périnat. Med.* 1989, 17, 137–143. [Google Scholar] [CrossRef][Green Version]