

# Nkwabong's Prognostic Classification of Placenta Abruption

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## Abstract

Placenta abruption (PA) is associated with poor maternal and perinatal outcome. Central PA carries poorer perinatal outcome than marginal or eccentric PA. It is also known that perinatal outcome worsens with increasing PA surface, but no recent study has put basis for a prognostic classification of PA. In this article, the author proposes a prognostic classification that is based on the percentage of PA abruption.

**Keywords:** Placenta abruption surface; Perinatal outcome

## Letter to Editor

Placenta abruption (PA) is a poor condition for the mother and especially the fetus. PA affects about 1% of pregnancies and contributes for 7% of perinatal mortality.<sup>[1]</sup> PA can be chronic, but it is usually acute near term or during delivery with the placenta separating and continuing to do so. Perinatal morbidity and mortality correlates positively with PA surface. PA surface can increase rapidly within a short time, particularly in central PA, jeopardizing fetal wellbeing. This explains why central PA is associated with poorer perinatal outcome than eccentric PA.<sup>[2]</sup>

PA presents as antepartum hemorrhage associated with continuous pain. PA should be differentiated from other causes of hemorrhage, such as placenta praevia which is often painless or associated with intermittent pain if there are also uterine contractions. PA surface can be diagnosed using 3-D or color Doppler ultrasound scan.<sup>[3]</sup>

Since PA carries adverse fetal outcome, a prognostic classification should be adopted. Sher classified PA in three grades, based on clinical presentation. This classification not only dates back to 1978, but also it does not really guide management.<sup>[4]</sup>

In order to reduce perinatal mortality due to PA, practitioners need a classification system that takes into consideration two factors: which management is appropriate and the time frame within which this management should be done. That is, whether cesarean section (CS) has to be conducted immediately or vaginal delivery can be attempted. Given the improved diagnostic accuracy of ultrasound scan, a new prognostic classification is needed. Hence, this one that is based on a study conducted in our unit. This prospective study, carried out between February 1<sup>st</sup> and September 30<sup>th</sup>, 2014, established the relationship between PA surface (calculated at delivery) and perinatal outcome.<sup>[5]</sup>

According to this study, when the PA surface at delivery was <25%, there was no perinatal adverse outcome. From 25 to 44%, there were various degrees of neonatal asphyxia. At 45% and above, there was always still birth. Knowing the exact percentage of PA at a particular moment of labor, according to this study, helps the obstetrician in making valuable decisions.

In order to help physicians in making decisions in PA, in reducing perinatal mortality without carrying out unnecessary cesarean sections (CS), we proposed the following simplified classification of acute PA occurring on uncomplicated singleton pregnancies [Table 1].

- In mild degree PA, if labor is advanced (cervical dilatation  $\geq 7$  cm with fetal head engaged), vaginal delivery can be attempted under close fetal surveillance, as some studies showed that at a cervical dilatation of 6 cm and above, labor evolution was so rapid that delivery could occur at any moment.<sup>[6,7]</sup> If the cervical dilatation <6 to <7 cm, the obstetrician should judge the necessity of CS, especially for central PA, given that rapid placental detachment has been described by some authors, with the patient moving from PA grade I of Sher classification to PA grade III within a short time period.<sup>[8]</sup>
- In moderate PA, CS should be performed, unless vaginal delivery is imminent.
- In severe PA, CS should be performed as fast as possible, within five minutes for instance, if the fetus is still alive [Table 1].

Given that perinatal outcome is poorer in central PA, CS should be the main mode of delivery when the fetus is alive and potentially viable, unless vaginal delivery is imminent.

In each case, the imminence of vaginal delivery is to be judged by the obstetrician. Imminent vaginal delivery in our unit, based on our experience, means delivery will occur within one hour (e.g. fetal head engaged, a soft cervix dilated at  $\geq 8$  cm for multiparous and  $\geq 9$  cm for primiparous women, no soft tissue dystocia).

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**Table 1: This signifies that in cases of antepartum hemorrhage, when the diagnosis of PA is made, the percentage of the PA surface should be concomitantly assessed.**

Classification	Percentage of placenta detachment	Clinical significance
Mild PA	<20%	No fetal jeopardy
Moderate PA	20% to <40%	Fetal distress imminent, if not yet present
Severe PA	≥40%	Fetal death imminent, if not yet present

The management proposed here is applicable only when the mother is not in a hypovolemic shock status. If it is the case CS might be done independently of the PA surface or fetal condition, to save the mother's life. Therefore, this prognostic classification does not consider the maternal indications for CS in PA.

As other considerations, it should be well known that some other factors such as nulliparity, low gestational age (<32 weeks), poor maternal general conditions (anemic, or in hypovolemic shock status), presence of placental histopathological lesions, presence of abnormal cord insertion and male fetal sex can jeopardize the fetal wellbeing, even in smaller PA surfaces, especially when many of these factors are found in the same woman. These factors should be taken into consideration when managing PA.

The last challenge for obstetricians is to be capable of estimating the percentage of placenta detachment during labor.

### Conflict of interest

All authors disclose that there was no conflict of interest.

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