

A case report of asymptomatic placenta previa: diagnosis and management

Zarbo G.¹, Pafumi C.¹, Giannone T. T.¹, Giunta M. R.¹, Carbonaro A.¹, Ciotta L.¹, Mayada Chammas², Fawzi Chammas², Genovese F.¹

¹Istituto Di Patologia Ostetrica e Ginecologica, Azienda Ospedaliera Universitaria Policlinico – Vittorio Emanuele, Catania – Direttore

²American University of Beirut-Lebanon

Email address:

pafumi@unict.it (C. Pafumi)

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Abstract: Placenta previa is a condition derived to an abnormal implantation of the embryos in the lower uterine segment, a place that predisposes to persistent uterine bleeding because of the development of new vessels and because it is a poorly contractile area of the uterus. Risk factors for placenta previa are: maternal age, number of pregnancies, cigarette smoking, multiple pregnancies, previous surgery on the uterus including caesarean section, previous placenta previa. Usually placenta previa becomes symptomatic in the third trimester of pregnancy and it is associated with adverse maternal and neonatal outcomes. The Authors present a case of 38 years old woman with complete placenta previa who comes to the ER of their hospital complex with plenty of vaginal bleeding; a caesarean section is performed in emergency. There is no doubt that the diagnosis of placenta previa is mainly ultrasound. Clinical and instrumental controls (ultrasound) in these patients will certainly have a frequency different from the other pregnancies and in many cases will require hospitalization. The mode of delivery is in most cases by emergency or elective Caesarean. The Authors based the management of the reported case on the review of the last 20-year International Literature, according to which, in the presence of this type of previa, an Early Term Birth (ETB) at 37 weeks and 0 days is associated with a better maternal and neonatal prognosis if compared to both a Late Preterm Birth (LPTB) at 34-36 weeks or a Term Birth (TB) at 38-39 weeks.

Keywords: Placenta Previa, Pregnancy, Lower Uterine Segment

1. Introduction

Is defined as a placenta previa placenta that makes contact with the uterine wall in a "abnormal" zone, that is the level of the "lower uterine segment" [1].

Placenta previa is classified depending on the distance between the lower edge placental and the orifice of the cervical canal (internal uterine orifice) [2] in:

- complete, when the placenta completely covers the orifice;
- marginal, when the border is located less than 3 cm from the orifice;
- lateral, when the bottom edge is more than 3 cm from the orifice (Figure 1).

Normally, the placenta should make contact with the upper-middle part of the uterine cavity, area remains almost unchanged during pregnancy.

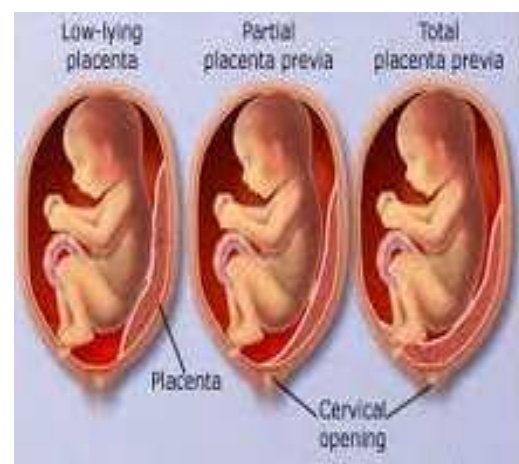


Figure 1. Classification of Placenta Previa.

Conversely, the lower uterine segment tends to expand

gradually during the third trimester of pregnancy and especially during labor.

The placenta is formed by inextensible material, that can not adapt to changes in tissue on which it is implanted.

Risk factors for placenta previa are: maternal age (35 years is three times more frequent than in 25), number of pregnancies (multiparity great risk 5%), cigarette smoking, multiple pregnancies, previous surgery on the uterus including caesarean section (1 TC increases of 0.65%, 2.2% 3 TC, TC 4 or more than 10%), previous placenta previa (4-8% risk of recurrence) [3].

The risk of placenta previa are fetal and maternal [4].

This condition is in fact associated with a number of dangerous complications such as premature birth, sudden and abundant bleeding, placental abruption.

Although a placenta previa can cause bleeding in the first and second quarter is typically around 28 weeks that will show the first heavy bleeding with bright red blood without pain. Sometimes there may also be pain related to frequent complications such as placental abruption and / or the beginning of a uterine contractile activity (threat of premature birth). For these reasons as the finding of a low placenta requires special attention [5].

The finding of a low placenta before week 24 has an incidence of 20-28% of all pregnancies, this percentage drops to 18% soon after this time, and to decline further to values of 3%. The decrease is related to the slope (migration) of the placental implantation secondary to the growth of uterus and to the formation of SUI.

So the diagnosis of placenta previa should be paid only after 26-28 weeks (when the shape SUI) [6].

2. Case Report

A 38-year-old woman was admitted in our institute at 38 weeks with two pregnancies, three previous miscarriages at 7, 8 and 10 weeks of gestational age in the past two years. She weighed 65 Kg and was tall 160 cm.

She looking for the cause of repeated miscarriages found to be homozygous for the mutation C677T of MTHFR's gene, mutation that results in very low levels of acid folic acid in plasma and the risk of neural tube defects in the fetus of pregnant women; hyperhomocysteinemia is then also associated with increased risk of miscarriage.

In the second trimester the routine ultrasound suspected a complete placenta previa, subsequently confirmed at the transvaginal ultrasound performed at the third trimester by the presence of a placental edge overlapping the internal os (complete placenta previa) (Figure 2). The cervical length was >30mm. During pregnancy the patient was treated with acetyl salicylic acid, prenatal vitamins, and with antenatal corticosteroids (betamethasone 4 mg).

The patient at 38 week came the ER of our hospital complex with plenty of vaginal bleeding was then made an emergency caesarean section.

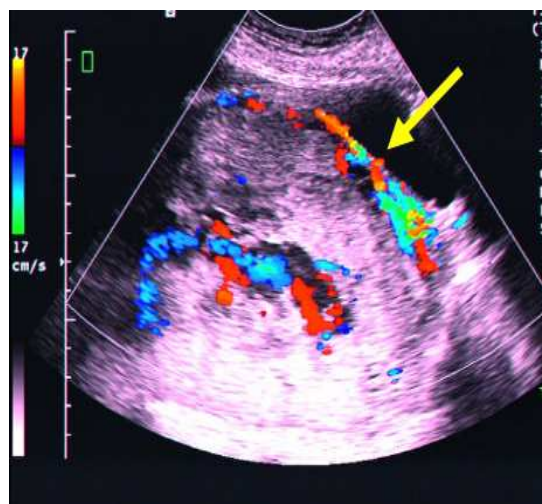


Figure 2. Transvaginal ultrasound at 33 weeks of gestational age: placenta previa complete.

After the total anesthesia, the surgical team performed a Cesarean section through a transverse skin incision and through the lower segment of the uterus. Since the placenta was anterior, the surgeon incised it to deliver the baby. The women gave birth to a healthy male infant (APGAR score 9), weight 3100 gr (Figure 3).

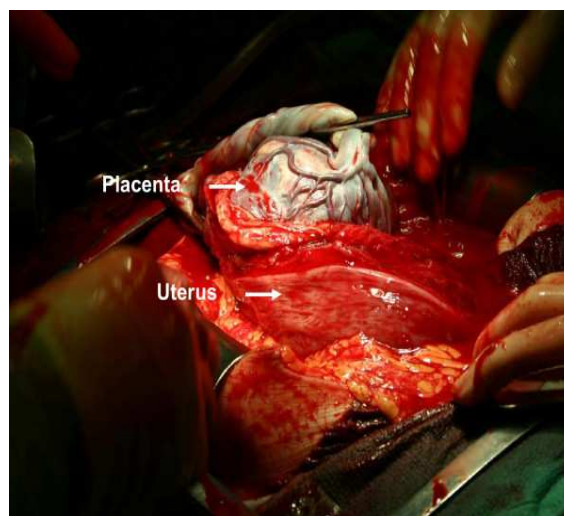


Figure 3. After extraction of fetus, the placenta is removed.

There was an important blood loss, so the surgical team exerted an external mechanical compression of the lower uterine segment to ensure haemostasis after checking for residual placental tissue on the area of placental insertion, utero-tonic drugs were also administered. Due to the blood loss, a blood gas was obtained intraoperatively, since haemoglobin (Hb) was 7.2 g/dL anesthesiologist and surgeon decided to transfuse a unit of packed red blood cells.

When haemostasis was satisfactory, the surgery proceeded with the suture of the uterus in double layer (Figure 4).

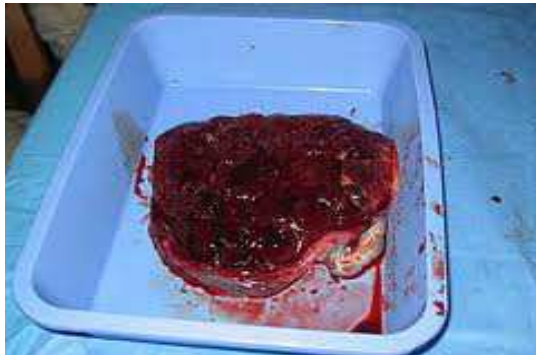


Figura 4. Placenta previa after extraction.

3. Diagnosis and Management

The diagnosis is mainly ultrasound [7]. The ultrasound allows early diagnosis and monitoring of the relationship between placenta, Lower Uterine Segment, internal opening of the cervical canal (OUI) during gestation. Transvaginal ultrasound (TV), based on the use of an ultrasound probe introduced into the vagina and cervix approached has proved particularly useful for these puposes; is a safe procedure, accurate and low cost [8].

Transvaginal ultrasound, if available and well established, is preferred to transabdominal sonography for the diagnosis of placenta previa. There are a good number of potential theoretical advantages to the use of transvaginal ultrasound in this situation; imaging is better and the woman does not need a full bladder, thus avoiding both maternal discomfort and also distortion of the anatomy of the lower uterine segment and cervix. The major problem with this technique is represented by the insertion of the probe into the vagina of a woman with possible placenta previa that may provoke bleeding. Advocates of transvaginal ultrasound argue that the probe should be inserted no more than three centimeters into the vagina and should not therefore come into contact with the cervix or lower segment, and that the improved images outweigh the theoretical disadvantages of provoking bleeding [9].

Clinical and instrumental controls (ultrasound) in these patients will certainly have a frequency different from the other pregnancies and in many cases will require hospitalization [10].

The aim of treatment and possible hospitalization is to reach an age of sufficient maturity to the fetus with the least risk possible outcomes of perinatal, safeguarding the health of the mother. The high likelihood of a premature birth required where possible the choice of admissions at hospital facilities with an ICU and Neonatal Resuscitation; Hospital also should always have adequate emergency services (intensive care unit) and a transfusion center for the needs nursery [11].

The strategy of waiting is possible and particularly recommended before the 34th week of gestation in stable patients (good condition), without or with very modest and limited bleeding with fetus is not suffering. It's the result of

a thorough clinical evaluation and a careful risk-benefit balance [12]. In these cases, it is usually taken corticosteroid therapy to accelerate fetal lung maturity and tocolytic (inhibiting uterine contractions) if there is a threat of premature birth. Hospitalization is the measure safest choice in many cases and is continued particularly when it occurs after the 28th until completion of delivery, but also the expectation at home is possible even if restricted to selected patients who live near the Hospital [13].

The mode of delivery is in most cases by emergency or elective Caesarean, this fact is considered elective mode of delivery. Only in selected cases, in which the placenta is of marginal or lateral and the fetus in cephalic presentation, after a quote information on risks, can be considered spontaneous delivery but always in a well-prepared and ready for the emergency maternal and newborn [14].

The os-placental edge distance on TVS after 35 weeks' gestation is valuable in planning route of delivery. A distance of 20 to 0 mm away from the os is associated with a higher CS rate, although vaginal delivery is still possible depending on the clinical circumstances. In general, any degree of overlap (> 0 mm) after 35 weeks is an indication for Caesarean section as the route of delivery [15].

Bahar et al in 2009 conducted a retrospective study over a 10-year period from 1996 to the end of 2005 including 306 women presenting different types of placenta previa. The authors compared risk factors and pregnancy outcome in different types of placenta previa. The overall incidence of placenta previa was 0.73%. Major placenta previa (complete or partial) occurred in 173 women (56.5%) and minor placenta previa (marginal placenta previa or low-lying placenta) in 133 women (43.5%). There were no differences between women with major and minor placenta previa regarding age, parity, and previous miscarriages. After controlling for confounding factors, women with major placenta previa showed a significantly higher incidence of antepartum hemorrhage (OR 3.18; 95% CI 1.58-6.4, $P=0.001$), placenta accreta (OR 3.2; 95% CI 1.22-8.33, $P=0.017$), and hysterectomy (OR 5.1; 95% CI 1.31-19.86, $P=0.019$). Antepartum hemorrhage in women with placenta previa was associated with premature delivery (OR 14.9; 95% CI 4.9-45.1, $P<0.001$), more commonly in women with major placenta previa. The only significant difference between women with major and minor placenta previa regarding neonatal outcome was that major placenta previa was associated with higher incidence of admission to the neonatal intensive care unit ($P=0.014$). They concluded that complete or partial placenta previa is associated with higher morbidity than minor placenta previa. [16].

Even if placenta previa often requires iatrogenic preterm (PTB) <34 weeks because of maternal bleeding or spontaneous preterm labor, mostly because catastrophic bleeding can occur and is not predictable on the basis of clinical factors, there is also a good number of women that remain asymptomatic. In these cases clinicians must decide when to schedule cesarean delivery in a "stable" patient with placenta previa [17-18].

Another important predicting factor in women with placenta previa is cervical length (CL). Fukushima et al conducted a recent study on eighty uncomplicated, singleton pregnancies with an antenatal diagnosed of placenta previa. The aim of this study was to evaluate the relationship between cervical length (CL) and obstetrical outcomes in women with placenta previa. N=60 women had a CL ≥ 30 mm, n=20 women had a CL < 30 mm. The mean CL was 38.5 ± 5.4 mm and 26.9 ± 3.2 mm and the mean gestational age at measurement was 29.2 ± 2.7 and 28.5 ± 2.7 weeks of gestation for the longer and shorter CL groups, respectively. The median estimated blood loss at cesarean section (CS) was significantly higher in the shorter CL group (1302 mL vs. 2139 mL, $P=0.023$) as was the percentage of patients with massive intra-operative hemorrhage (60.0 vs. 18.3%, $P=0.001$). In the shorter versus longer CL patients, emergent CS before 37 weeks (23.3 vs. 50.0%, $P=0.046$) and the percentage of patients with placental adherence (6.7 vs. 35.0%, $P=0.004$) were both significantly more frequent in the shorter CL group. The shorter CL was a risk factor both for massive estimated blood loss (≥ 2000 mL) (odds ratio 6.34, 95% confidence interval 1.91-21.02, $P \leq 0.01$) and placental adherence (odds ratio 6.26, 95% confidence interval 1.23-31.87, $P \leq 0.05$) in the multivariate analysis [19].

Besinger et al. conducted an analysis to determine the effect of tocolytic use in the management of symptomatic placenta previa. One hundred twelve preterm pregnancies with confirmed placenta previa and an initial episode of acute vaginal bleeding were selected for this retrospective analysis. The clinical use of tocolysis in symptomatic placenta previa was associated with a clinically significant delay of preterm delivery. Significant improvement in clinical parameters such as interval from admission to delivery (39.2 vs 26.9 days, $p < 0.02$) and birth weight (2520 vs 2124 gm, $p < 0.03$) was observed in the tocolysis group. Treated pregnancies receiving long-term maintenance tocolysis with oral or subcutaneous terbutaline exhibited a greater degree of pregnancy prolongation than those treated with short-term intravenous magnesium alone (43.7 vs 15.3 days, $p < 0.02$) [20].

Robinson et al in 2010 conducted an analysis to determine the optimal gestational age at which to deliver individuals with ultrasonographic evidence of both placenta previa and accreta in individuals who reach 34 weeks of gestation. They compared nine different strategies for the timing of delivery in these women. Robinson et al concluded suggesting as preferred strategies in individuals with ultrasonographic evidence of placenta previa and placenta accreta delivery at 34 weeks of gestation. Only when the risk of serious hemorrhage necessitating delivery is less than 1%, a probability outside the range of published values, expectant management until 39 weeks of gestation became the most preferred strategy [21].

The benefits of avoiding emergent delivery with earlier delivery must be weighed against the neonatal risks of iatrogenic prematurity.

McIntire DD et al noticed late preterm birth children has

increased neonatal morbidity compared with birth at term. Respiratory distress, transient tachypnea, grades 1 or 2 intraventricular hemorrhage, sepsis work-ups, culture-proven sepsis, phototherapy for hyperbilirubinemia and intubation in the delivery room were significant more common in these infants [22].

The relationships between the probability of maternal hemorrhage increases and neonatal morbidity decreases with advancing gestational age [18]. In women with uncomplicated complete placenta previa seems reasonable to perform a cesarean delivery at 36-37 weeks of gestation, after the antenatal corticosteroids (ACS) administration at 35 weeks for the fetal lung maturity. Meanwhile in women with a placenta previa and additional co morbidities (high body mass index, previous cesarean deliveries, episodes of vaginal bleeding) clinicians should consider early preterm delivery.

Once a decision to perform cesarean delivery has been made, questions arise about the anesthesiological management. In 1999 Frederiksen et al conducted a 22 year analysis reviewing all women with placenta previa who underwent cesarean delivery in their center with the purpose to identify what was the safer anesthetic method in these women. General anesthesia was used for delivery in 380 women and loco-regional anesthesia was used for 134 women. General anesthesia increased the estimated blood loss, was associated with a lower postoperative hemoglobin concentration, and increased the need for blood transfusion. The authors concluded in women with placenta previa regional anesthesia appears to be safe [23].

4. Conclusions

If available transvaginal sonography, may be used to investigate placental location at any time in pregnancy. It is significantly more accurate than transabdominal sonography.

In woman with placenta previa it's fundamental evaluating gestational age, fetal and maternal wellness in order to decide the suitable treatment.

In good maternal and fetal status, before the 34th week of gestation, the strategy of waiting is possible; in these cases it's important clinical and ultrasound controls.

According to our experience and to recent literature, we conclude that in emergency or election the Caesarean delivery is considered the best choice.

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