Placental Abruption after Bricanyl Injection Prior to External Cephalic Version: A Case Report

Lea B S Ankerstjerne* and Mohammed Rohi Khalil

Department of Gynecology and Obstetrics, Lillebaelt Hospital, Denmark

Abstract

**Background:** External cephalic version (ECV) is a procedure of fetal rotation to a cephalic presentation at term and tocolysis is often used to contribute to a successful ECV. Tocolysis is contraindicated if placental abruption (PA) is suspected or diagnosed. However, in rare situations it happens, even in the absence of clinical signs.

**Case:** A 31-year-old pregnant woman at 37 weeks’ gestation with a normal pregnancy, which was planned to ECV because of breech presentation. Few minutes after the intramuscular Bricanyl administration prior to the ECV, the patient presented vaginal bleeding and hypotension. Urgent Caesarean Section (CS) was performed and placental abruption was diagnosed.

**Discussion:** PA is a rare diagnosis and many risk factors have been reported. This case report might present another potential risk factor associated with PA, namely tocolysis injection. Since early diagnosis of PA is lifesaving and diagnosing of PA can be difficult, this report rightly urges to share the awareness of tocolysis injection as a rare risk factor for placental abruption.

**Keywords:** Placental abruption; Bricanyl; Tocolysis; External cephalic version; Breech presentation

Introduction

Breech presentation occurs in 3%-4% of all term pregnancies and an ECV is in general accepted as a safe procedure [1,2]. ECV has shown to reduce the number of Caesarean deliveries and non-cephalic presentations at term [3]. Tocolysis is often used to inducing myometrial relaxation of the uterus and hereby delaying preterm delivery or facilitating successful ECV [4,5]. Tocolysis is contraindicated if placental abruption is suspected or diagnosed [6].

Placental abruption (also referred to as abruption placentae or PA) is defined as bleeding at the decidu-al-placental interface, which complicates approximately 0.4% to 1% of all pregnancies [7,8]. PA causes a life-threatening emergency with partial or complete placental detachment prior to delivery [8]. Therefore, early diagnosis of placental abruption is important [9]. Fetal survival depends on the severity of the abruption, gestational age and early intervention, including latency in performing CS [9,10].

The purpose of this clinically oriented case report is to draw attention to the risk of Bricanyl and the potential association to PA.

Case History

A 31-years-old woman with a history of preeclampsia and breech presentation during her first pregnancy, delivered at term by CS two years earlier. The woman had been monitored in the actual pregnancy due to the suspicion of Intrauterine Growth Restriction (IUGR). The pregnancy was proceeding normally and ultra sound repeatedly showed a healthy, growing fetus but breech presentation was observed and the ECV was planned to be performed at 37 weeks’ gestation. No hypertension or other signs for preeclampsia was observed during pregnancy.

At 37 weeks’ gestation the woman was feeling well and neither signs of vaginal bleeding nor any uterine contraction was reported. After a normal CTG control and an ultra sound scan with fetus in breech presentation, a 0.5 mg Bricanyl was given intramuscularly. Few minutes later the patient started complaining about dizziness and nausea, which was initially managed conservatively by the midwife, who thought it could be due to a compression of vena cava. The patient was placed in side position and offered something to drink, which had a good effect for a moment. After 10 min the patient started having vaginal bleeding, sweating and blood pressure dropped to 83/49 and her pulse increased to 80.

An ultra sound (US) scan was performed immediately which found that the fetus had bradycardia. A large white area was observed at the bottom of the uterus, which was thought to be blood. An urgent CS was performed and total PA was identified. This caesarean delivered a healthy infant, appropriate for gestational age, Apgar 10/10, pH of 7.10 and base-excess of 9.5. The patient’s blood loss was estimated to 1000 ml. Her postpartum course was uneventful and both mother and child were discharged after 7 days.

Discussion

Placental abruption is one of the serious complications of pregnancy, because it is a significant cause of maternal and perinatal morbidity and mortality [11].

Diagnosing placental abruption can be difficult, because the standard clinical triad combining vaginal bleeding, abdominal pain and uterine hypertension is found in only approximately 10% of the cases [12]. Different risk factors for placental abruption have been reported in association with smoking, pre-eclampsia, hypertension, ECV, history of CS and previous placenta abruption, the last mentioned as the most significant [8]. Though many risk factors are known, the cause of...
placental abruption often remains unexplained [8]. Physicians must be aware of the increased risk of PA among patients with the risk factors.

Tocolysis has been found associated with positive sonographic evidence of PA, especially betamethasone [13]. Whether this is a result of intervention due to the sonographic findings or tocolysis as a risk factor for developing PA, remains unclear and further studies are needed.

As mentioned, EVC is found associated with PA, but tocolysis is often used to increase the chance for successful ECV and this could mask the association between tocolysis and PA. In addition, PA varies in severity and there exists cases without clinical signs, therefore there might be cases not registered [5,9,14,15].

The diagnosis of PA is confirmed on placenta examination. Paraclinical diagnosis involves MRI, CT and US scans. In this case an US scan was performed by the midwife prior to tocolysis injection and breech presentation was diagnosed, but the placenta findings remain unknown. In addition, there were no US scan done by a physician to evaluate the fetus and placenta, though it is good clinical practice. However, US scan only has a sensitivity to diagnose PA at 24 % and though its PPV is high (100%) when scan-to-delivery is short (1 week), the NPV is only 49% [13]. MRI and CT have shown to display precise diagnosis of PA with sensitivity at 100% [16-18].

Unfortunately, PA still remains unpredictable and clinically predictive test is needed to detect patients at risk [18]. The present case contains important knowledge about managing tocolysis and illustrate that awareness to tocolysis as a risk factor for PA is an interesting and serious issue.

References