

# MULTIPLE INTRAPLACENTAL HEMATOMAS – KLINE'S HEMORRHAGE

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**SUMMARY** – A rare clinical case of intraplacental intervillous hemorrhage (Kline's hemorrhage) is presented. After delivery of a premature newborn (810 g/35 cm) in 27<sup>th</sup> week of uncomplicated pregnancy, peripartum observation of the premature placenta (270 g, 16x16x1.8) suggested multiple intraplacental cavernae with semifluid blood and fresh coagula and fresh marginal (partial) placental abruption. The possible etiologic causes of recent microembolism include thrombophilia, microangiopathy diseases, antiphospholipid syndrome, disseminated intravascular coagulopathy and severe preeclampsia.

**Key words:** *Placenta – pathology; Intraplacental hemorrhage*

## Introduction

Placental pathology includes three categories, i.e. vascular lesions due to maternal blood flow disturbances, vascular lesions due to fetal blood flow disturbances, and non-circulatory lesions. The second category includes intervillous thrombosis, Kline's hemorrhage, fetal artery thrombosis, and subamniotic hematoma. Kline's intraplacental hemorrhage is manifested as hemorrhagic-appearing areas in placental parenchyma due to acute obstructive microangiopathy<sup>1</sup>.

A rare clinical case of this syndrome is presented.

## Case Report

A 23-year-old healthy primigravida in 27<sup>th</sup> week of uncomplicated pregnancy was admitted to obstetric emergency unit for fresh vaginal hemorrhage, abdominal pain, uterine hypertonus and cervix dilatation

reaching 4 cm; blood pressure 110/70, without proteinuria and c.p. 92/min. The patient's personal history revealed abortion in 9<sup>th</sup> week with curettage without other diseases, while family history was unremarkable, without possible thromboembolic diseases. Ultrasonography demonstrated fetus in cephalic position with normal biometry for gestational age; normal fetal dynamics and morphology; normal amniotic fluid index; and placental tissue of diffuse inhomogeneous structure with multiple anechogenic focal areas (1-3 cm) in placental parenchyma without detected blood flow and without placental abruption. Cardiotocography suggested reactive, undulatory curve, basal frequency 140-160/min, and regular low amplitude contractions with basal hypertonus. Laboratory findings indicated anemia (Hb 109; Htc 0.29), with incipient intravascular coagulopathy (fibrinogen 2.6-3.0; D-dimers 2800; PT >1.23; LDH 363; Plt 180-210); other laboratory findings suggested normal hepatogram and renogram.

The patient received cryoprecipitate and low molecular heparin (LMH). After amniotomy (meconial amniotic fluid) with spasmolysis (Petantin 50 mg i.v.) because of regular and strong contractions, a premature male child 810 g/35 cm, Apgar score 2/4

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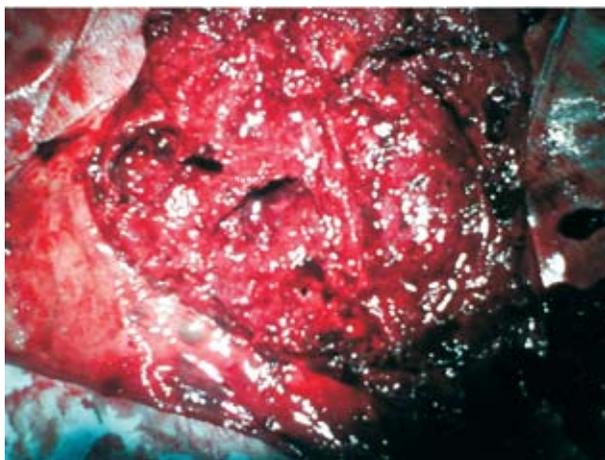


Fig. 1. Multiple intraplacental Kline's hemorrhage areas (arrows: 'cavernae') with fresh partial placental abruption.

was born. The premature newborn died at three weeks of age from severe respiratory distress syndrome and perinatal infection.

Peripartum observation of the premature placenta (270 g, 16x16x1.8) suggested multiple intraplacental cavernae with semifluid blood and fresh coagula (Fig 1). Fresh intrapartum marginal (partial) placental abruption was detected. Histopathology of the placental tissue suggested immature placenta with multiple Kline's intraplacental hemorrhage areas with blood containing nucleated erythrocytes, older placental infarction and fresh partial placental abruption. Autopsy findings of the premature newborn revealed immature organs and pulmonary hyalinomembranous disease without anomaly.

The postpartum course was uncomplicated with LMH and normalization of laboratory findings (D-dimers 1308-808-350; fibrinogen 2.0-3.8), and the patient was discharged from the hospital on day six. Six weeks after delivery, laboratory findings suggested thrombophilia (factor V Leiden mutation and mutation of methyltetrahydrofolate transferase, MTHFR).

## Discussion

In medicohistorical literature, acute intervillous thrombosis has been referred to as Kline's hemorrhage because Kline was the first to describe it in 1948 as numerous barrier breaks associated with hemorrhage from fetal circulation into maternal intervillous space.

In recent case reports, Kline's hemorrhage is not reported as this synonym. Other synonyms for Kline's hemorrhage are 'placental cavernae' and 'placental Hohlraum' (in German) because of typical intralesional hemorrhagic areas located near the center of placental cotyledon with nodular foci or semifluid/fluid blood. Histopathologic patterns suggest collection of blood containing nucleated erythrocytes<sup>1-3</sup>. Typical morphological findings prove peripartum ultrasonographic pictures of placental cavernae in this case.

Acute or recent intervillous thrombosis is a central, 2-5 cm, oval, soft, dark red parenchymal lesion with fresh fluid or semifluid intervillous blood pools. On ultrasonography, chronic thrombosis is seen as a whitish, laminated hypoechoic lesion<sup>4,5</sup>. The possible etiologic causes of recent microembolism include thrombophilia, microangiopathy diseases, antiphospholipid syndrome, disseminated intravascular coagulopathy and severe preeclampsia. In 3%-50% of full-term uncomplicated pregnancies, intervillous placental thrombosis develops due to gestation complicated by ischemic conditions such as preeclampsia and ischemia-associated intrauterine growth restriction<sup>1-3,5</sup>.

Our young puerpera was advised to undergo additional molecular coagulation testing for molecular coagulation defects, and thrombophilia was detected. In this case, peripartum ultrasonographic and postpartum morphological picture of multiple intraplacental Kline's hemorrhage areas was the first sign of unrecognized thrombophilia in the otherwise normal pregnancy, however, with peracute uterine hypertonus, vaginal hemorrhage and preterm parturition in 27<sup>th</sup> week of pregnancy.

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## Sažetak

## VIŠESTRUKI INTRAPLACENTNI HEMATOMI – KLINEOVO KRVARENJE

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Prikazuje se rijedak slučaj intraplacentnog (Klineovog) krvarenja. Nakon poroda nedonoščeta (810 g/35 cm) u 27. tjednu nekomplikirane trudnoće, na nezreloj posteljici (170 g, 16x16x1,8) pronađene su brojne intraplacentne kaverne s polutekućom krvlju i svježim ugrušcima te svježom djelomičnom abrupcijom posteljice. Mogući uzroci svježe mikroembolije uključuju trombofiliju, mikroangiopatiju, antifosfolipidni sindrom, diseminiranu intravaskularnu koagulopatiju i tešku preeklampsiju.

Ključne riječi: *Posteljica - patologija; Intraplacentno krvarenje*

