NAJVAŽNIJE O ABRUPCIJI PLACENTE - KLINIČKA SLIKA I LEČENJE

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REVIEW ARTICLE

THE MAIN FEATURES OF PLACENTAL ABRUPTION - CLINICAL PRESENTATION AND TREATMENT

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SAŽETAK

Abrupcija placente se definiše kao prerano odvajanje posteljice od materice. Brza dijagnoza i adekvatna medicinska intervencija obezbeđuju dobar ishod, što nije moguće u svim zemljama sveta. Svako krvarenje nastalo u drugoj polovini trudnoće pobuđuje sumnju na abrupciju posteljice koja je povezana sa fetalnim i maternim morbiditetom i mortalitetom. Od veličine i količine krvi zavisi klinička slika i posledice po fetus. Kompletna abrupcija dovodi do prekida cirkulacije i oksigenacije ploda, asfiksije i mrtvorođenosti. Kod delimične abrupcije posledice po fetus zavise od stepena krvarenja. U slučaju kompletne abrupcije, smrt ploda je neizbežna, osim ako se ne preduzme hitan porođaj carskim rezom.

Ključne reči: trudnoća; abrupcija posteljice, porođaj, novorođenče

ABSTRACT

Placental abruption is defined as the premature separation of the placenta from the uterus. Rapid diagnosis and adequate medical intervention provide a good outcome, which is not possible in all countries. Any bleeding that occurs in the second half of pregnancy raises the suspicion of placental abruption, which is associated with fetal and maternal morbidity and mortality. The clinical picture and consequences for the fetus depend on the degree of bleeding and the amount of blood. Complete abruption leads to the disruption of fetal circulation and oxygenation, asphyxia, and stillbirth. In case of partial abruption, the consequences for the fetus depend on the degree of bleeding. In complete abruption, fetal death is inevitable unless an emergency cesarean delivery is undertaken.

Keywords: pregnancy; abruptio placentae, delivery, newborn

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UVOD

Abrupcija placente je jedan od najčešćih uzroka morbiditeta majki i perinatalnog mortaliteta. Jedan je od vodećih uzroka vaginalnog krvarenja u drugoj polovini trudnoće (najčešće posle dvadesete gestacijske nedelje) ili neposredno pre rođenja deteta. Prevalencija trudnoća komplikovanih abrupcijom placente je oko 0,4-1% [1,2]. Učestalost abrupcije placente kod prevremenih porođaja značajno varira u različitim delovima sveta. U razvijenim zemljama, oko 10% svih prevremenih porođaja izazvano je abrupcijom placente [3,4].

Abrupcija placente se definiše kao prerano (pre porođaja) odvajanje normalno implantirane posteljice od materice [5,6].

Etiopatogeneza abrupcije placente je multifaktorijalna (na primer, hipertenzija u trudnoći, iznenadna dekompresija materice, supinacijski hipotenzivni sindrom, trauma, anomalije), mada je najčešće nepoznato zašto dolazi do preranog odvajanja normalno usađene placente. Kao faktori rizika za abrupciju placente navode se godine majke (mlađe od 20 godina ili starije od 35 godina), multiparitet, prethodna abrupcija posteljice, vantelesna oplodnja, te trombofilija, kratka pupčana vrpca, horioamnionitis, kao i hipertenzija, trauma (saobraćajne nesreće, padovi) i konzumiranje duvana, alkohola i kokaina tokom trudnoće [7,8].

Patofiziološki, usled pritiska hematoma u predelu gde se stvara posteljica (decidua basalis) dolazi do prekida cirkulacije između majke i fetusa što uzrokuje hemodinamske poremećaje, abnormalnosti koagulacije i akutni fetalni distres. U slučajevima kada krvarenje primarno nastaje iz fetalnih krvnih sudova placente, ono može dovesti do centralnog ili perifernog sakupljanja krvi između placente i zida materice čime se stvara retroplacentarni hematom, što se može ispoljiti kao spoljašnje krvarenje. Kod centralnog retroplacentarnog hematoma postoji mogućnost da veće količine krvi ostanu iza placente, uz odsustvo vidljivog spoljašnjeg krvarenja [9].

Histopatološki pregled placente može retrospektivno da potvrdi dijagnozu infarkta placente i decidualne vaskulopatije, ali je histopatloška analiza konfirmatorna samo u jednoj trećini slučajeva, jer specifične lezije nisu uvek prisutne [10].

Kod trudnice, abrupcija placente je skopčana sa rizicima kao što su: akušersko krvarenje, potreba za transfuzijom krvi, hitna histerektomija, diseminirana intravaskularna koagulopatija i bubrežna insuficijencija, a vrlo često je povezana i sa smrću trudnice. Usled prevremenog porođaja, manifestuju se perinatalne komplikacije po plod, kao što su mala porođajna težina novorođenčeta, asfiksija i mrtvorođenost [4,11]. Kompletna abrupcija dovodi do prekida cirkulacije i

INTRODUCTION

Placental abruption is one of the most common causes of maternal morbidity and perinatal mortality. It is one of the leading causes of vaginal bleeding in the second half of pregnacy (usually after the twentieth week of gestation) or just before the birth. The prevalence of pregnancies complicated by placental abruption is around 0.4-1% [1,2]. The incidence of placental abruption in preterm births varies significantly in various parts of the world. In developed countries, around 10% of all preterm births are caused by placental abruption [3,4].

Placental abruption is defined as the premature (before delivery) separation of the normally implanted placenta from the uterus [5,6].

The etiology of placental abruption is multifactorial (e.g. hypertension in pregnancy, sudden uterine decompression, supine hypotensive syndrome, trauma, anomalies), although it is usually unknown why the premature separation of the normally implanted placenta occurs. Risk factors for placental abruption include maternal age (below 20 years or over 35 years), a multiple gestation pregnancy, previous placental abruption, in vitro fertilization, thrombophilia, short umbilical cord, chorioamnionitis, as well as hypertension, trauma (traffic accidents, falls) and consumption of tobacco, alcohol, and cocaine during pregnancy [7,8].

When it comes to the pathophysiology of placental abruption, due to the pressure of a hematoma in the area where the placenta is formed (decidua basalis), the circulation between the mother and the fetus is interrupted causing hemodynamic disturbances, coagulation disorders and acute fetal distress. When the bleeding originates from the placental blood vessels, central or peripheral accumulation of blood between the placenta and the uterine wall may occur forming a retroplacental hematoma which can present as external bleeding. In the case of a central retroplacental hematoma, it is possible that large amounts of blood remain behind the placenta with no visible external bleeding [9].

Histopathological examination of the placenta may retrospectively confirm the diagnosis of placental infarction and decidual vasculopathy, but histopathological analysis is confirmative only in one-third of all cases as specific lesions are not always present [10].

In pregnant women, placental abruption is associated with the following risks: an obstetric hemorrhage, the need of blood transfusion, emergency hysterectomy, disseminated intravascular coagulation and renal failure and very often even maternal death. Due to preterm birth, there may be perinatal complications for the fetus such as low birth weight, asphyxia, and stillbirth [4,11]. Complete abruption leads to the disruption of fetal circulation and oxygenation, asphyxia,

oksigenacije ploda, asfiksije i mrtvorođenosti. Kod delimične abrupcije posteljice, posledice po fetus zavise od količine izgubljene krvi, odnosno prisutnosti krvarenja [12].

Zbog toga što može biti životno ugrožavajuća, potrebno je da blagovremeno prepoznamo abrupciju posteljice. Cilj rada je da se uz pomoć postojećih saznanja opiše klinička slika abrupcije posteljice.

ABRUPCIJA PLACENTE – KLINIČKA SLIKA

Klinička slika trudnice i ploda zavisi od stepena abrupcije (Tabela 1), prisutnosti i volumena hematoma, prisutnosti krvarenja, i količine izgubljene krvi. Dijagnoza abrupcije placente postavlja se na osnovu anamneze i kliničke slike trudnice, a tek postpartalno dolazi u obzir makroskopski i histopatološki pregled posteljice.

Tabela 1. Klasifikacija abrupcije placente prema stepenu odvajanja (delimično ili potpuno) i mestu odvajanja (marginalno ili centralno) [13].

Klasa 0 / ***Class 0***	Asimptomatska abrupcija posteljice / *Asymptomatic placental abruption*
Klasa 1 / ***Class 1***	Blaga abrupcija posteljice (približno 48% svih slučajeva) / *Mild placental abruption (approximately 48% of all cases)*
Klasa 2 / ***Class 2***	Umerena abrupcija posteljice (približno 27% svih slučajeva) / *Moderate placental abruption (approximately 27% of all cases)*
Klasa 3 / ***Class 3***	Teška abrupcija posteljice (približno 24% svih slučajeva) / *Severe placental abruption (approximately 24% of all cases)*

Abrupcija prvog stepena (Klasa 1) je najblaži stepen abrupcije i može je pratiti krvarenje u tragu, mada može postojati i bez vidljivog spoljašnjeg krvarenja. Postoji bolna osetljivost ili nelagodnost u stomaku, iznenadni bol u stomaku ili u leđima, i lak mišićni tonus uterusa bez jasnih kontrakcija. Krvni pritisak je normalan (120/80 mmHg), a nivo fibrinogena je takođe normalan (200-400 mg/l). Srčana frekvenca ploda je normalna, od 120-160 otkucaja u minuti. Posle porođaja opšte stanje porodilje i novorođenčeta je dobro [6].

Abrupciju drugog stepena (Klasa 2) prati umereno krvarenje koje podrazumeva oko 100 ml krvi, dok ponekad dostiže i 500 ml, kao kod obilnije menstruacije; prisutne su mišićne kontrakcije uterusa sa povremenim tetaničnim kontrakcijama [14]. Krvni pritisak u ležećem položaju je normalan, ali je moguća ortostatska hipotenzija. Puls je ubrzan, iznad 100 otkucaja u minuti. Evidentan je pad nivoa fibrinogena (manje od 200 mg/dl). Kardiotokografski konstatuje se fetalni distres, uglavnom u vidu smanjene amplitude oscilacija. Trudnoća se završava hitnim carskim rezom. Stanje porodilje je dobro. Novorođenče se rađa sa srednje teškim oblikom respiratornog distresa zbog blage intrauterine asfiksije [15]. Makroskopskim pregledom umereno teške abrupcije vidi se formiran retroplacentarni hematom sa trombozom krvnih sudova materice, kompresijom resica i infarktima posteljice (Slika 1).

and stillbirth. In partial abruption, the consequences for the fetus depend on the amount of blood lost, i.e. the presence of bleeding [12].

Since it can be life-threatening, it is important that placental abruption is recognized in a timely manner. The aim of this paper is to describe the clinical picture of placental abruption relying on the existing knowledge.

PLACENTAL ABRUPTION – THE CLINICAL PICTURE

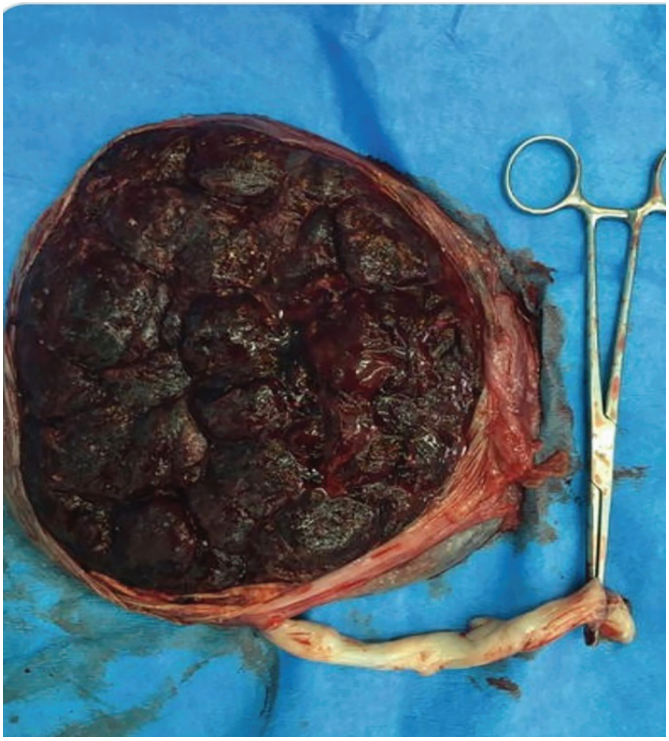
The clinical picture of the mother and the fetus depends on the degree of separation (Table 1), the presence of a hematoma and its volume, the presence of bleeding and the amount of blood lost. Placental abruption is diagnosed according to the medical history and the clinical picture of the patient and only postpartum can

Table 1. The classification of placental abruption according to the extent of the separation (complete or partial) and the location of the separation (marginal or central) [13].

macroscopic and histopathological examination be taken into consideration.

Class 1 abruption is the mildest degree of abruption which can present with a slight trickle of blood or the absence of visible external bleeding. There is tenderness or discomfort in the abdomen, a sudden pain in the abdomen or in the back and slight uterine tenderness with no contractions. Blood pressure is normal (120/80 mmHg), as well as fibrinogen value (200-400 mg/l). The fetal heart rate is normal, and it ranges from 120 to 160 beats per minute. Postpartum, the mother and newborn's general condition is good [6].

Class 2 abruption is followed by moderate bleeding which usually means losing about 100 ml of blood and sometimes up to 500 ml like in heavy menstrual bleeding; there are uterine contractions with occasional tetanic contractions [14]. Blood pressure in the supine position is normal, but orthostatic hypotension is possible. Maternal tachycardia occurs, with over 100 beats per minute. A drop in fibrinogen value is observed (below 200 mg/dl). Cardiotocography reveals fetal distress which mainly manifests itself in reduced oscillatory amplitude. The pregnancy ends with an emergency Cesarean section. The mother's condition is good. The newborn suffers from moderate respiratory distress due to mild intrauterine asphyxia [15]. Macroscopic examination of moderate abruption shows a



Slika 1. Makroskopski izgled posteljice abrupcije drugog stepena - umereno teška abrupcija. Retroplacentarni hematom usled tromboze krvnih sudova materice na pozadini kompresije resica.
Izvor: Dokumentacija autora

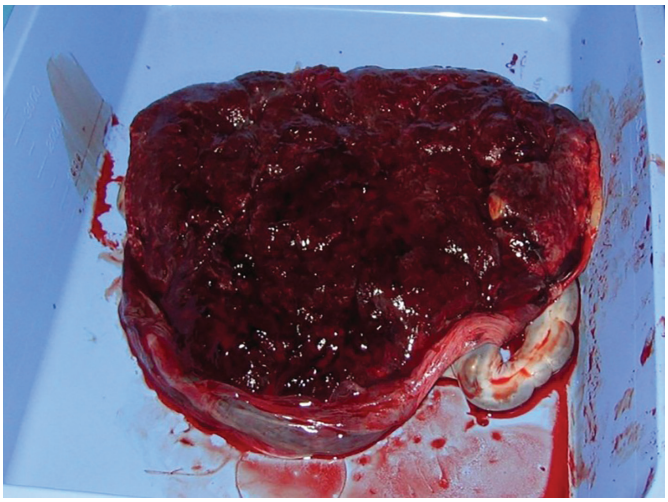
Figure 1. Macroscopic appearance of Class 2 placental abruption – moderate placental abruption. Retroplacental hematoma formed due to thrombosis of the uterine blood vessels on the background of compressed villi
Source: Author's documentation

Abrupciju trećeg stepena (Klasa 3) karakteriše masivno vaginalno krvarenje, bolna i kontrahovana materica. Teška abrupcija praćena je razvojem diseminovane intravaskularne koagulopatije (DICa). Kod trudnice se u laboratorijskim analizama beleži teška anemija, vrednost hemoglobina ispod 70 g/L i hematokrita ispod 0,30, koagulopatija koju karakterišu povišene vrednosti trombina, snižene vrednosti fibrinogena (ispod 150 mg/dl) i trombocita (ispod 140 x 10^9/l) i povišenih vrednosti razgradnih produkata fibrina i D-dimera, te stanje hemoragičnog šoka. Parametri koji govore u prilog šoka u početnoj reverzibilnoj fazi su: tahikardija (ubrzan rad srca, puls iznad 100/min), ubrzano disanje (respiracije iznad 20/min), hipotenzija (krvni pritisak niži od 100/60 mmHg), acidoza tkiva, pH (kiselost krvi) manji od 7,35, koncentracija bikarbonata manja od 12 mmol/L, i oligurija (smanjeno izlučivanje mokraće < 500 ml/24 h). Terapija se sastoji u nadoknadi tečnosti, elektrolita i plazma ekspandera, te korekciji anemije transfuzijom krvi, a veoma retko i inotropa (Dopamin, Dobutamin) [16,17]. Na operativnom polju vidi se da krvarenje obuhvata miometrijum, jajovode, a nekada i peritonealnu šupljinu. Materica je uvećana, formed retroplacental hematoma with thrombosis of the uterine blood vessels, compressed villi and placental infarction (Figure 1).

Class 3 abruption is characterized by heavy vaginal bleeding, the painful and contracted uterus. Severe abruption is followed by the development of disseminated intravascular coagulation (DIC). Maternal laboratory analyzes show severe anemia, hemoglobin value below 70 g/L and hematocrit value below 0.30, coagulopathy characterized by elevated thrombin values, decreased fibrinogen value (below 150 mg/dl), decreased platelet count (below 140 x 10^9/l) and elevated D-dimer and fibrin degradation products, as well as hemorrhagic shock. The following parameters indicate shock in the initial reversible stage: tachychardia (a rapid heart rate, over 100 beats a minute), tachypnea (more than 20 breaths per minute), hypotension (blood pressure below 100/60 mmHg), tissue acidosis, blood pH below 7.35, bicarbonate level below 12 mmol/L and oliguria (reduced urine output to < 500 ml/24 h). The therapy consists of fluid, electrolyte and plasma expander replacement, the correction of anemia through blood transfusion and very rarely inotropes as well (Dopamine, Dobutamine) [16,17]. Surgery reveals that bleeding is present in the myometrium, in the fallopian tubes and sometimes in the peritoneal cavity as well. The uterus is enlarged, dark purple to black in color (Picture 2). The described condition is called uteroplacental apoplexy, or Couvelaire uterus, according to Dr Alexandre Couvelaire who first described it in 1911 as a rare complication of all cases of placental abruption (up to 5%) [18,19]. In such cases, hysterectomy is often necessary due to uterine atony and resilience to standard procedures, uterine tamponade and uterine artery ligation. Due to massive hemorrhage, the loss of more than 1000 ml of blood, interruption of circulation in the umbilical vein, severe fetal asphyxia and intrauterine death may occur [20-22].

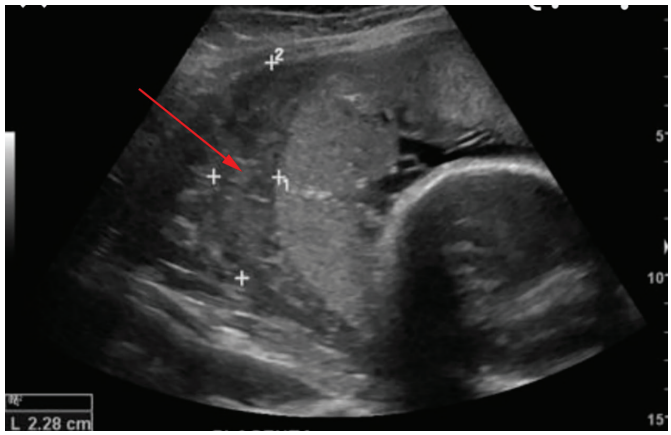
A special form of placental abruption is chronic placental abruption which is characterized by light, occasional bleeding followed by placental insuficiency, olygohidramnios and intrauterine growth restriction [23]. In this case, the delivery ends with a Cesarean section. The newborn has low birthweight for gestational age, whereas maternal general condition is good. Echosonographic examination reveals a retroplacental hematoma with decidua basalis and a partial or complete separation of the placenta followed by massive hemorrhage (Figure 3).

Ultrasound findings can be false negative, especially in fresh, acute bleeding prior to delivery where a retroplacental hematoma has not fully developed. The delivery ends with a Cesarean section, usually with no consequences for either the newborn or the mother [24].



Slika 2. Makroskopski izgled abrupcije posteljice trećeg stepena - teška abrupcija. Posteljice sa masivnim krvarenjem i ekstenzivnim retroplacentarnim hematomom.
Izvor: Dokumentacija autora

Figure 2. Macroscopic appearance of Class 3 placental abruption – severe abruption. Placenta with massive hemorrhage and an extensive retroplacental hematoma .
Source: Author's documentation



Slika 3. Ultrazvučni izgled retroplacentarnog hematoma kod abrupcije postel. Crvena strelica obeležava retroplacentarni hematom viđen ehosonografskim pregledom.
Izvor: Dokumentacija autora

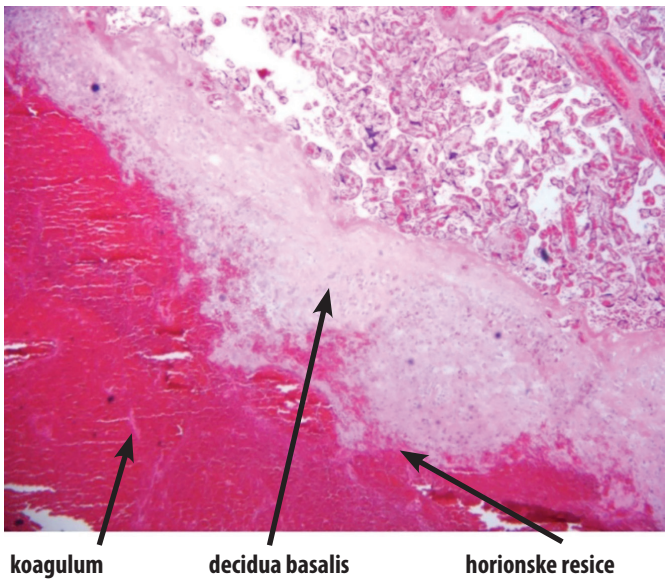
Figure 3. Ultrasound appearance of a retroplacental hematoma in placental abruption. The red arrow points to the retroplacental hematoma revealed by echosonographic examination.
Source: Author's documentation

tamno ljubičaste do crne boje (Slika 2). Opisano stanje se naziva apopleksija materice, ili po dr Aleksandru Kuveleru (Dr Alexandre Couvelaire), koji ga je prvi opisao 1911. godine kao retku komplikaciju svih slučajeva abrupcije posteljice (do 5%), naziva se i Kuvelerov sindrom [18,19]. U takvim slučajevima, često je neophodna histerektomija zbog atonije i refraktornosti na standardne procedure, tamponade uterusa i podvezivanje ilijačnih arterija. Zbog masivne hemoragije, gubitka više od 1000 ml krvi, i prekida cirkulacije u veni umbilikalis, može da nastupi teška asfiksija ploda i intrauterina smrt [20-22].

Poseban oblik abrupcije placente je hronična abrupcija kod koje trudnica ima relativno oskudna, povremena krvarenja, koja su praćena placentnom insuficijencijom, oligohidramnionom i intrauterinim zastojem rasta ploda [23]. U ovom slučaju, porođaj se najčešće završava carskim rezom. Rađa se novorođenče male telesne težine za gestacijsku zrelost, dok je trudnica dobrog opšteg stanja. Ehosonografski može se videti retroplacentarni hematom, često bazalne decidue posteljice, sa delimičnim ili potpunim odvajanjem posteljice uz masivnu hemoragiju (Slika 3).

Ultrazvučni nalazi mogu biti lažno negativni, posebno kod svežih, akutnih krvarenja pred porođaj gde se retroplacentarni hematom nije u potpunosti razvio. Porođaj se završava carskim rezom, najčešće bez posledica po majku i novorođenče [24].

Postpartalno, pregledom posteljice mogu se uočiti hematomi različite veličine i lokacije. Ako hematom



Slika 4. Histološki pregled abrupcije posteljice trećeg stadijuma (mikroskopsko uvećanje preparata tkiva posteljice 10 puta). Na histopatološkom pregledu vidi se retroplacentarno krvarenje. Na decidui basalis nalazi se velika količina krvi koja odvaja placentnu ploču, tj .deciduu basalis od ostatka materice, te su horionske resice uronjenje u deciduu basalis usled pritiska koaguluma.
Izvor: Dokumentacija autora

Figure 4. Histological examination of Class 3 placental abruption (placental tissue preparation microscopic magnification at 10 x). Histopathological examination reveals retroplacental bleeding. In decidua basalis there is a large amount of blood which separates the placental plate, i.e. decidua basalis, from the rest of the uterus, so chorionic villi are immersed into decidua basalis due to the coagulum pressure.
Source: Author's Documentation

postoji dugo nakon odvajanja od placente, nastaje defekt na fetalnoj površini posteljice (Slika 2). Histopatološki pregled posteljice često otkriva infarkt placente uz prisustvo retroplacentarnog hematoma (Slika 4). Osim toga, histopatološki nalaz služi i za postavljanje dijagnoze hroničnih i atipičnih abrupcija placente [25].

LABORATORIJSKI NALAZI

Laboratorijski nalazi su od ključne važnosti za procenu koagulacionog statusa. Fibrinogen pokazuje najbolju korelaciju sa težinom krvarenja kod trudnice. Koncentracija fibrinogena u trudnoći se povećava sa gestacijskom zrelošću fetusa i gestacijskim nedeljama trudnoće. Normalan nivo fibrinogena u trećem trimestru je od 373 do 619 mg/dL [26]. Vrednosti niže od 200 mg/dL ukazuju na umerenu abrupciju posteljice (Klasa 2). Vrednosti iznad 400 mg/dL ukazuju na to da je koagulacioni status i dalje očuvan [27]. Za tešku abrupciju tipičan je brz razvoj diseminovane intravaskularne koagulacije (DIC) koja se manifestuje simptomima ireverzbilnog šoka sa hipoksijom, acidozom i anurijom. Počinje bledilom, hladnim i lepljivim znojem, jedva opipljivim i ubrzanim pulsom, padom krvnog pritiska ili potpunim gubitkom pritiska, nepravilnim disanjem (smjenjuju se površno i duboko disanje), prestankom lučenja mokraće, usporavanjem krvotoka; krv počinje da se zgrušava, mozak i srce ne dobijaju dovoljno kiseonika [28].

Laboratorijski DIC se ne može dijagnostikovati na osnovu nivoa jednog markera, već na osnovu kombinacije laboratorijskih markera. Među četiri tipa DIC-a, protrombin (PT), fibrinogen i trombociti su važni parametri za dijagnostikovanje tipa masivnog krvarenja DIC-a, dok su fibrinogen, fibrin degradacioni produkti (FDP) i plazmin-plazmin inhibitorski kompleks (PPIC) važni za otkrivanje tipa DIC krvarenja. U međuvremenu, trombociti, PT i antitrombin (AT) su važni za dijagnostikovanje tipa otkazivanja organa kod DIC-a, dok su hemostatski molekularni markeri, kao što su SF i trombin-AT kompleks (TAT), važni za dijagnostikovanje nesimptomatskog tipa DIC-a [29,30].

LEČENJE ABRUPCIJE PLACENTE

Prilikom pristupa lečenju abrupcije posteljice treba sagledati gestacijsku starost trudnoće, kliničku sliku abrupcije, stanje majke i fetusa. Završetak trudnoće je neophodan u situacijama asfiksije fetusa ili teške abrupcije, čak i pre primene kortikosteroidne terapije. U slučaju intrauterine smrti ploda, dalji postupci se određuju prema stanju trudnice.

Carski rez je indikovan ako je hemodinamski status nestabilan uz prisustvo masivnog krvarenja. U takvim slučajevima, koagulacioni status je od presudne

Postpartum, the examination of the placenta can reveal hematomas of various sizes and locations. If a hematoma persists long after the separation from the placenta, a defect on the fetal surface of the placenta occurs (Figure 2). Histopathological examination of the placenta often reveals placental infarction accompanied by a retroplacental hematoma (Figure 4). Apart from this, histopathological findings also serve to diagnose chronic and atypical placental abruption [25].

LABORATORY FINDINGS

Laboratory findings are of crucial importance to the assessment of the coagulation status. Fibrinogen correlates best with the degree of bleeding in pregnant women. Fibrinogen concentration in pregnancy increases with gestational age. Normal fibrinogen level in the third trimester is between 373 and 619 mg/dL [26]. Values below 200 mg/dL indicate mild placental abruption (Class 2). Values over 400 mg/dL indicate that the coagulation status has been preserved [27]. Severe abruption is characterized by a rapid development of dissmeniated intravascular coagulation (DIC) which manifests symptoms of irreversible shock with hypoxia, acidosis and anuria. It starts with the pale skin, cold and sticky sweat, barely detectable and fast pulse, a drop in blood pressure or a complete loss of blood pressure, irregular breathing (alternating shallow breathing with deep breathing), the complete cessation of urine flow, slowing down of blood flow; blood starts coagulating, the brain and the heart do not get enough oxygen [28].

DIC cannot be diagnosed in the laboratory according to a single marker, but a combination of laboratory markers is necessary. Among the four types of DIC, prothrombin (PT), fibrinogen and thrombocytes are important parameters for diagnosing massive bleeding type of DIC, while fibrinogen, fibrin degradation products (FDP) and plasmin-plasmin inhibitor complex are important for detecting the type of DIC bleeding. Meanwhile, thrombocytes, PT and antithrombin (AT) are significant for diagnosing the organ failure type of DIC, whereas hemostatic molecular markers, such as soluble fibrin (SF) and thrombin-antithrombin complex (TAT) are significant for diagnosing the asymptomatic type of DIC [29,30].

TREATING PLACENTAL ABRUPTION

When treating placental abruption, it is important to consider the gestation of the pregnancy, the clinical picture of abruption and maternal and fetal wellbeing. Termination of pregnancy is necessary in case of perinatal asphyxia or severe abruption, even before corticosteroid therapy is administered. In case of intrauterine fetal death, further procedures are determined according to the maternal status.

vašnosti, jer nekontrolisana diseminovana intravaskularna koagulopatija može da ugrozi hirurški zahvat, odnosno život trudnice. Ako je trudnica hemodinamski stabilna, moguć je vaginalni porođaj. Ukoliko je gestacija kraća od 34 nedelje, kod blagih i umerenih abrupcija poželjno je produžiti trudnoću uz maturaciju fetalnih pluća primenom kortikosterida. Posle 34. nedelje preporučuje se završetak trudnoće, osim u slučajevima najblaže abrupcije kada se porođaj može odložiti do 37. nedelje [31].

Upotreba tokolitika je diskutabilna i stalna je tema rasprava u smislu smanjenja kontrakcija ili naknadnog intenziviranja krvarenja. Neki autori navode da primena tokolitika produžava trajanje trudnoće sa mogućnošću većeg krvarenja u trećem trimestru, što bi opravdalo primenu tokolitika, posebno nifedipina kao prvog izbora. S druge strane, negativno dejstvo tokolitika na kardiovaskularni sistem, kao i tahikardija i hipotenzija, mogu da prikriju kliničku sliku, da pogoršaju abrupciju i izazovu dodatnu hemodinamsku nestabilnost. Iz navedenog proizilazi da je primena tokolitika stvar individualne procene kliničara. Ako to stepen abrupcije dozvoljava, najbolje je trudnoću produžiti i porođaj obaviti vaginalnim putem [32].

ZNAČAJ RANOG PREPOZNAVANJA KLINIČKE SLIKE I PRAVOVREMENOG ZBRINJAVANJA

Neonatalni mortalitet i morbiditet mogu biti uzrokovani postojanjem abrupcije i problemima vezanim za prevremeno rođenje. Sâm čin prevremenog rođenja donosi niz komplikacija kod novorođenčeta – asfiksiju, respiratorni distres sindrom, nezrelost organa i sistema, potrebu za mehaničkom ventilacijom, apnoične krize, konvulzije, intrakranijalnu hemoragiju – a samim tim i posledice u vidu cerebralnog oštećenja kod ekstremno nezrele novorođenčadi, a u nekim slučajevima i smrtni ishod [33].

Prevremeno rođenje, kao i rođenje hitnim carskim rezom, odlaže kolonizaciju intestinalne flore novorođenčeta bakterijama porođajnog kanala i razvoj intestinalne mikrobiote koji su neophodni za razvoj imuniteta novorođenčeta neposredno nakon rođenja i nasleđenim imunim odgovorom kasnije tokom života razvoj mozga i mogu poboljšati neurološke ishode prevremeno rođene dece [34], kao i „koža na kožu" postavljanje novorođenčeta na majku, a koja je neophodna za uspostavljanje emocionalnog kontakta sa majkom [35].

Kolonizacija gastrointestinalnog trakta i kože prevremeno rođene dece počinje u materici. Sastav crevne i kožne mikrobiote utiče na razvoj urođenog imunološkog odgovora, uključujuci razvoj nekrotičnog enterokolitisa, i rane i kasne neonatalne sepse

A Cesarean section is indicated in hemodynamically unstable patients with massive bleeding. In such cases, the coagulation status is of utmost importance, because uncontrolled disseminated intravascular coagulopathy may endanger the surgical procedure and the life of the mother. If the woman is hemodynamically stable, a vaginal delivery is possible. If the pregnancy is less than 34 weeks gestation, in mild or moderte abruption the pregnancy should be extended using corticosteroids for fetal lung maturation. After the 34th week, termination of pregnancy is recommended except in cases of mildest abruption when delivery can be delayed until the 37th week [31].

The use of tocolytics is debatable and is constantly discussed in connection with the reduction of contractions or subsequent intensified bleeding. Some authors state that the use of tocolytics extend the duration of pregnancy with the possibility of heavier bleeding in the third trimester, which would justify the use of tocolytics, especially Nifedipine as a medication of first choice. On the other hand, the negative effect of tocolytics on the cardiovascular system, as well as tachycardia and hypotension, can mask the symptoms, to worsen abruption and provoke additional hemodynamic instability. What follows from all the above mentioned is that the application of tocolytics depends on clinicians' individual assessment. If the degree of separation allows, it is best to extend the pregnancy and opt for a vaginal delivery [32].

THE IMPORTANCE OF EARLY RECOGNITION AND TIMELY MANAGEMENT

Neonatal mortality and morbidity may be caused by the presence of abruption and the problems related to premature birth. The very act of premature birth brings a series of complications in the newborn – asphyxia, respiratory distress syndrome, immature organ systems, the need for mechanical ventilation, apneic crises, convulsions, intracranial hemorrhage – which leads to cerebral damage in extremely immature newborns and in some cases even to a fatal outcome [33].

Preterm birth (just like emergency Cesarean section) delays the colonization of the newborn's intestinal flora with gut bacteria from the birth canal and the development of intestinal microbiota which are necessary for the development of the newborn's immunity immediately after birth and later in life through the inherited immune response for the development of the brain and which can improve neurological outcomes in preterm children [34], similarly to 'skin-to-skin' contact between the mother and the newborn, which is necessary for establishing emotional contact with the mother [35].

[36], čime se predupređuje prevremeni mortalitet tokom boravka u jedinicama intenzivne nege. Pretpostavlja se da bakterijska kolonizacija creva pri rođenju i postnatalna crevna disbakterioza prethode razvoju nekrotičnog enterokolitisa i sepse kod veoma nezrele nedonoščadi (sa porođajnom težinom ispod 1500g) za koju se vezuje stopa mortaliteta od čak 15% [37].

ZAKLJUČAK

S obzirom da ozbiljnost kliničke slike trudnice i fetalnog distresa korelira sa stepenom odvajanja placente, abrupcija posteljice je urgentno stanje koje zahteva brzu dijagnozu i adekvatno lečenje. U skoro potpunoj ili kompletnoj abrupciji, smrt fetusa se može predupreditи hitnim porođajem carskim rezom.

Sukob interesa: Nije prijavljen.

Colonization of the gastrointestinal tract and the skin of preterm children begins in the womb. The composition of the gut and skin microbiota affects the development of the innate immune response, including the development of necrotizing enterocolitis and early-onset and late-onset neonatal sepsis [36], thereby preventing premature mortality during intensive care unit stays. It is assumed that bacterial colonization of the intestine at birth and postnatal intestinal dysbiosis precede the development of necrotizing enterocolitis and sepsis in extremely immature preterms (birth weight below 1500g) who are associated with mortlity rate of up to 15% [37].

CONCLUSION

Considering the fact that the severity of maternal clinical picture and fetal distress correlate with the degree of placental separation, placental abruption is an emergency which requires prompt diagnosis and adequate treatment. In almost complete or complete abruption, fetal death can be prevented by emergency Cesarien delivery.

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