

Multidisciplinary approach in the management of pregnancy with placenta accreta spectrum disorder – Case report

Multidisciplinarni pristup rješavanju trudnoće s poremećajem implantacije placente – Prikaz slučaja

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Summary

From the histopathologic perspective Placenta accreta spectrum (PAS) shows the absence of the normal intervening decidua and invasion of the placenta into the myometrium. There is placenta accreta with the chorionic villi attach directly to the surface of the myometrium in the absence of the decidual layer and placenta increta when the chorionic villi penetrate deeply into the myometrium reaching the external layer. There is also placenta percreta where the invasive chorionic villi reach and penetrate through the myometrium to uterine serosa and it is nowadays the most common reason for peripartum hysterectomy (1). Drawing the line between these subtypes is not always easy, especially in the clinical situations when the invasiveness of the placenta is not known before the delivery (2). The maternal and fetal outcomes are improved upon appropriate antepartum diagnosis and care by multidisciplinary experts with experience in PAS treatment (3). Here we present a pregnancy and multidisciplinary delivery management of a 40-year-old female, gravida V, para IV, with history of the three cesarean sections, in 36+2 weeks of gestation in a tertiary academic teaching hospital. We confirmed suspected PAS antenatally based on ultrasound and magnetic resonance imaging (MRI). Preoperative preparation included the ensuring of blood products availability, the use of arterial occlusion balloons to reduce hemorrhage, and the use of double JJ stent to prevent ureteral injuries. We performed a cesarean section with immediate uterine amputation due to severe bleeding, after which the patient fully recovered. If PAS timely suspected and confirmed intraoperatively, the best maternal and neonatal outcome is achieved by the multidisciplinary approach that enables adequate elective procedure.

Key words: placenta percreta, cesarean section, hemorrhage, hysterectomy

Sažetak

Spektar promjena koje uključuje placenta akreta s patohistološkog gledišta (PAS - placenta accreta spectrum) povezuje odsutnost normalnog razvoja decidue i invaziju placente u miometriju. Razlikujemo placentu akretu gdje su korionske resice spojene izravno na površinu miometrija bez decidualnog sloja i inkretu gdje korionske resice prodiru duboko u miometriju, dosežući do vanjske površine. Ako placenta prodire kroz cijeli miometriju i kroz uterinu serozu, nazivamo je perkreta i danas je najčešći razlog za peripartalnu histerektomiju.¹ Razlikovanje pojedinih subtipova nije jednostavno posebno u kliničkim situacijama ako invazivnost placente nije dijagnosticirana prije poroda.² Majčinski i fetalni ishodi su poboljšani zahvaljujući antepartalnoj dijagnostici i brizi multidisciplinarnog tima stručnjaka s iskustvom u liječenju trudnoća s poremećajima placencije.³ U ovom članku prikazujemo trudnoću i multidisciplinarni pristup 40-godišnjoj trudnici (peta trudnoća, četvrti porod, tri prethodna carska reza), u 36+2 tjednu trudnoće u tercijarnom centru. Antenatalno postavljenu sumnju na PAS potvrdili smo ultrazvučno i magnetskom rezonancom (MR). U pripremi pripremu uključili smo osiguranje adekvatne količine krvnih pripravaka, korištenje arterijskih

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okluzivnih balona za smanjenje krvarenja tijekom zahvata, kao i korištenje JJ stentova za prevenciju oštećenja uretera. Trudnoća je dovršena carskim rezom, te je potom učinjena hitna histerektomija zbog, po život opasnog krvarenja, nakon čega se bolesnica u potpunosti oporavila. Ako se na vrijeme posumnja i dokaže poremećaj implantacije placente, optimalni ishod za majku i dijete može se postići adekvatnim planiranjem zahvata.

Ključne riječi: placenta perkreta, carski rez, krvarenje, histerektomija

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Introduction

The worldwide incidence of PAS has been rapidly rising over the last several decades, which is in association with increasing cesarean delivery, particularly repeated procedures. It is critically important to suspect PAS based on the risk in a patient's obstetrical history (e.g. previous cesarean section or other uterine surgery, placenta previa in present pregnancy, advanced maternal age, multiparity).¹ Referring such patients to tertiary centers with expertise in diagnosis and management has been of essential importance. Both ultrasound and MRI have good diagnostic performance, but the verification on PAS is finally done intraoperatively and/or at histological examination of the hysterectomy specimen if performed.⁴ Optimal management requires both accurate antenatal diagnosis and robust perinatal management strategy, which has been extremely challenging.⁵ Maternal outcomes depend on the identification of the condition before or during delivery, and, in particular, on the differential diagnosis between its adherent and invasive forms. New International Federation of Gynecology and Obstetrics Classification (FIGO) of PAS spectrum provide more accurate data which is important to develop new management strategies.⁶

Case report

The patient has provided informed consent for the publication of the case. A previously healthy pregnant 40-year-old woman (gravida V, para IV) with three healthy children, and three previous cesarean sections, with an ultrasound performed at 8 weeks of gestation, revealed suspicion of cesarean scar pregnancy (Figure 1). After counseling, the patient was determined to keep the pregnancy. Ultrasound examinations at 27 week of gestation showed anterior placenta with suspicion of PAS spectrum (presence of vascular gaps with venous flow, myometrial thinning and intense abnormal vascularization in the serosa) (Figure 2). She was thereafter referred to our institution for further evaluation.



Figure 1 Cesarean scar pregnancy – eighth week of pregnancy

Slika 1. Trudnoća u ožiljku carskog reza – osmi tjedan trudnoće



Figure 2 Scan at 27 weeks of gestation reveals multiple lacunae

Slika 2. Ultrazvučni prikaz u 27. tjednu trudnoće prikazuje mnogostruke lakune

We requested MRI which demonstrated a placenta percreta with suspected invasion of the bladder wall due to the disappearance of the interface separating bladder wall from myometrium over a small area (Figure 3). A cystoscopy was performed which showed a compression of the bladder without signs of invasion of the placenta. The patient was admitted to the hospital for close monitoring and planning the delivery due to the remote place of residency.

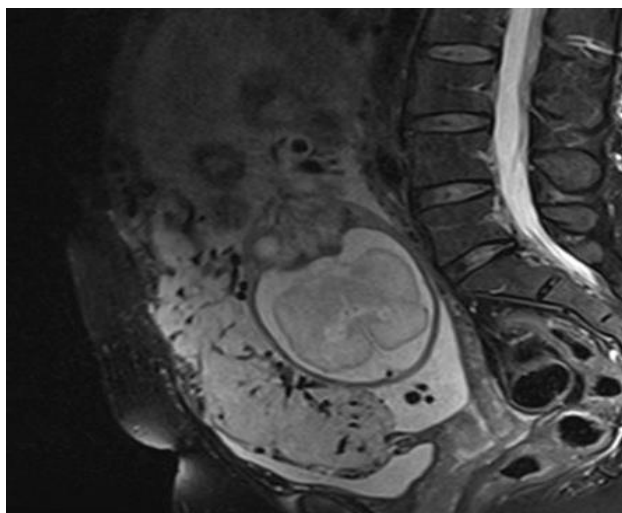


Figure 3 MRI of anterior placenta percreta in scar of cesarean section – 29 week of gestation

Slika 3. MRI prednje placente perkrete u ožiljku prethodnog carskog reza u 29. tjednu trudnoće

There were no antenatal bleeding episodes and fetal monitoring was uneventful. At gestational age 36+2, a double-JJ stent was mounted on the eve of the planned cesarean section in order to prevent ureteric injury and early morbidity. An elective cesarean section was performed. Endovascular occlusive balloons in both the internal iliac artery were placed under epidural anesthesia before the surgery in order to improve maternal outcome related to hemorrhage and to allow us to operate in a cleaner field with improved visibility. After that, umbilical medial laparotomy with corporal hysterotomy were performed in general anesthesia. A male newborn in good condition was extracted (3060 g, Apgar score 10) and transferred to the neonatal ward because of mild prematurity. Supracervical uterine amputation with bilateral salpingectomy was then performed (Figure 4). The blood loss was estimated at 6000 ml. The patient received a total of 15 packed red cells, 8 packed of fresh frozen plasma, 2 pools of plates, fibrinogen 8 g, 20% albumins 100 ml, dexamethason 8 g and tranexamic acid 2 g with abundant crystalloid and colloid infusions to maintain optimal volume load. In the immediate postoperative period, the patient was transferred to the Intensive Care Unit of our hospital for further management and invasive monitoring. The immediate rescue measures included: oxygen administration, intubation and mechanical ventilation. She received antibiotics and low molecular weight heparin. Chest X-ray did not show remarkable lung findings nor had electrocardiographic changes been observed. At the end of the day, the patient was hemodynamically stable, extubated and released from the Intensive Care Unit. Ten days after delivery, she

was discharged in good condition with normal laboratory findings. The pathology findings after the procedure showed placenta percreta.



Figure 4 Uterus after hysterectomy

Slika 4. Maternica nakon histerektomije

Discussion

PAS is a potentially life-threatening condition and its incidence will be likely to increase further over time. Clinicians should be aware of the difficulties related with the diagnosis and the challenges associated with the management of this condition.⁷ The prevailing hypothesis why and how PAS occurs is that an iatrogenic defect of the endometrium-myometrial interface leads to failure of normal decidualization at the site of a uterine scar, enabling abnormally deep trophoblast infiltration.⁸ Conditions like manual removal of the placenta, uterine curettage and endometritis are more likely to result in abnormally adherent placentation.⁹ It is important to start to consider PAS as a disease resulting from a combination of many factors such as a defective decidua, abnormal trophoblastic attachment, abnormal angiogenesis and vascular remodelling and progressive uterine scar dehiscence.¹⁰ In the presented case, the patient showed placenta percreta disorder which was related to three previous cesarean sections. After ultrasonography and MRI high grade of suspicion, diagnosis of PAS was established intraoperatively. The pathology findings after the procedure confirmed the diagnosis. It

is also important to differentiate cesarean scar pregnancy from lower uterine segment implantation which is easier to perform before the eighth week of gestation but becomes more difficult as pregnancy advances. Both conditions carry a considerable risk of PAS and excessive hemorrhage, but the approach to treating them is quite similar.¹¹ Prenatal diagnosis has important prognostic implications and is associated with a significant reduction in maternal and fetal morbidity because of the multidisciplinary approach of surgical termination of pregnancy.¹² A surgical approach to the treatment of PAS is often individualized to the patient, surgical team and resources available at the institution. Preferred treatment for PAS in our center is planned cesarean hysterectomy with preoperative placement of ureteral stents and endovascular balloon occlusion of the internal iliac artery despite of the fact that PAS is associated with extensive aberrant neovascularization and that occlusion of some pelvic vessels might lead to increased blood loss from the collateral vessels. However, larger studies are needed to truly demonstrate both the safety and efficacy of prophylactic balloon occlusion. According to the latest recommendations, leaving the placenta in situ is an option for woman who desire to preserve their fertility and agree to continuous long-term monitoring in centers with adequate expertise, but a primary elective cesarean hysterectomy is the safest option.¹³ Because PAS is a potentially life threatening condition with an increasing incidence, it is important to provide the optimal screening, diagnosis and management options to women affected by PAS disorders.

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