

Placenta praevia increta with caesarean section scar invasion

Łożysko przodujące wrosnięte z inwazją w bliznę po cięciu cesarskim

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Abstract

Introduction: Placenta increta refers to the placenta invading the myometrium. It is a rare but life-threatening condition. The incidence of placenta increta ranges widely from 1 in 540 to 1 in 93,000 deliveries; in Poland it is approximately 0.2% of all deliveries. The occurrence of placenta praevia increta is much lower and accounts for 0.001% to 0.05% of cases. However, the frequency of this condition is steadily increasing.

Case report: Placenta praevia was diagnosed in an ultrasound examination at 20 weeks' gestation in a multipara who had previously delivered by caesarean section. The invasion of the placental vessels into the caesarean section scar was observed in a Colour Doppler scan. The patient was admitted for a planned caesarean section at 36 weeks' gestation and invasion of the vessels into the caesarean scar was confirmed. Because of uncontrolled hemorrhage, a total abdominal hysterectomy was performed. The patient had an uneventful recovery and was discharged well on the fourth postoperative day with a healthy infant.

Conclusions: Early antenatal detection of placenta praevia increta and planning the surgical intervention tailored to available resources and the patient's expectations result in reducing the number of postpartum maternal, as well as neonatal complications.

Key words: **placenta increta / placenta praevia / cesarean section / case management /**

Streszczenie

Termin łożysko wrosnięte odnosi się do sytuacji, w której łożysko wrasta w mięśniówkę macicy. Pomimo rzadkiego występowania tego zjawiska jest to stan zagrożenia życia. Łożysko wrosnięte obserwuje się w od 1 na 540 do 1 na 93 000 porodów; w Polsce dotyczy około 0.2% wszystkich porodów. Częstość występowania łożyska przodującego wrosniętego jest jeszcze niższa – oceniana na od 0,001% do 0,05% przypadków – i w ostatnim czasie stale rośnie.

Opis przypadku: Łożysko przodujące zdiagnozowano w 20 tygodniu ciąży u wieloródki, u której poprzednią ciążę rozwiązano przez cięcie cesarskie. W badaniu kolorowym Dopplerem obserwowano inwazję naczyń łożyska w bliznę po cięciu cesarskim. Pacjentka została planowo przyjęta do Kliniki Ginekologii i Położnictwa w Tychach w 36 tygodniu ciąży celem wykonania cięcia cesarskiego. W chwili przyjęcia w badaniu ultrasonograficznym potwierdzono inwazję naczyń łożyskowych. W czasie cięcia cesarskiego, po wydobyciu płodu, ze względu na niemożliwy do opanowania krwotok poporodowy, wykonano okołoporodowe usunięcie macicy. Przebieg pooperacyjny był niepowikłany. Pacjentka została wypisana z Kliniki w czwartej dobie po operacji ze zdrowym noworodkiem.

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Wnioski: Wczesne przedporodowe wykrycie łożyska przodującego wrośniętego i zaplanowanie odpowiedniego postępowania medycznego uwzględniającego możliwości danego ośrodka i oczekiwania pacjentki umożliwiają obniżenie częstości powikłań matczyńskich i noworodkowych.

Słowa kluczowe: **łożysko wrośnięte / łożysko przodujące / cięcie cesarskie / postępowanie /**

Introduction

The incidence of placenta increta ranges widely from 1 in 540 to 1 in 93,000 deliveries [1]; in Poland it is approximately 0.2% of all deliveries [2]. The occurrence of placenta praevia increta is much lower and accounts for 0.001% to 0.05% of cases [1, 3]. However, the frequency of this condition is steadily increasing [3].

A case of a 38-year-old patient (gravida 2, para 2) with placenta praevia invading the caesarean section scar was presented. Antenatal detection of placenta praevia increta allowed for a planned caesarean section. The patient was informed about the possibility of a hysterectomy and written consent was obtained. Because of uncontrolled hemorrhage, a peripartum hysterectomy was performed which resulted in the prevention of massive blood loss with successful neonatal and maternal outcomes.

Case study

A 38-year-old gravida 2, para 2, with a history of a caesarean section was admitted to the Department of Gynecology and Obstetrics, Specialistic Clinical Hospital in Tychy at 36 weeks' gestation. She was previously diagnosed with placenta praevia marginalis at 20 weeks' gestation and was under continuous medical care.

Upon admission, abdominal and transvaginal ultrasound scans were performed showing the following biometrical parameters: BPD – 92mm; FOD – 104mm; HC – 312mm; AC – 321mm; FL – 68mm; EFWs – 2772 g +/- 405g. The placenta was located on the anterior wall of the uterus, grade II/III in Grannum classification, with the placental edge reaching the internal cervical os. The invasion of the placental vessels into the caesarean section scar was observed in a Colour Doppler scan (disruption of the placental-uterine wall interface and the presence of vessels crossing this area). Pelvic examination revealed soft consistency, mid-position, closed cervix effaced by 50% – Bishop Score 4.

Preoperatively, the patient was aware of the suspicion of placenta increta. The complications and risks associated with this potential diagnosis, including hemorrhage and possible hysterectomy had all been discussed with the patient before the procedure. The consent for a perioperative hysterectomy was obtained; preserving the fertility was not a priority for the patient.

The gravida was scheduled for an elective caesarean section and preoperatively blood and biochemical tests were performed. The total blood cell count was as follows: RBC – $3.84 \times 10^6/\mu\text{L}$; HGB – 11.8g/L; HCT – 34.8%; WBC – $7.6 \times 10^9/\text{L}$; PLT – $165 \times 10^9/\text{L}$. Serum protein level (64.98g/L), serum urea (2.98mmol/L), serum creatinine (48.59U/L), serum glucose (4.43mmol/L) were all within the norm. Urinalysis revealed a urinary tract infection, so bacteriostatic treatment was introduced (Furagin 2 tablets 3 times a day).

Because of the anticipation of massive haemorrhage, a local blood bank was informed preoperatively. A type and crossmatch for 4 U of blood were completed.

The patient was delivered of a male infant weighing 2820g with Apgar scores of 3, 7 and 8 at 1, 5 and 10 minutes, respectively. After the infusion of Oxytocin (10 U/L IV and 10U/L into myometrium) the placenta separated causing excessive bleeding from the placental site in the lower segment of the uterus. The invasion of the placenta into the caesarean section scar was confirmed. In spite of the administration of different uterotonic (Metergin, Oxytocin) and the placement of deep myometrial sutures, the bleeding was uncontrolled. The decision to perform a hysterectomy was taken, as conservative management of placenta increta when the woman was already bleeding was unlikely to be successful and risked wasting valuable time. The uterus was removed and the ovaries preserved. (Figure 1).

The estimated blood loss during caesarean section was 1000mL. The patient lost an additional 700mL during the hysterectomy – total blood loss was 1700mL. During the procedure the patient received 1500ml of crystalloids.

As the patient was stable, with blood pressure and pulse within the normal range, no blood transfusion was required in the operation theatre. Postoperatively, the patient continued to exhibit hemodynamic stability.

The anatomopathological examination of the hysterectomy specimen revealed myometrial invasion of the placenta into the uterine scar region (approximately 1cm lengthwise).

Total blood cell count performed on the first day postoperatively revealed secondary anaemia (RBC – $2.98 \times 10^6/\mu\text{L}$; HGB – 8.8g/L; HCT – 26.2%; WBC – $13.4 \times 10^9/\text{L}$; PLT – $207 \times 10^9/\text{L}$) and the patient received 2 units of packed red blood cells. Antibiotic therapy and low-molecular-weight heparin (Clexane) were also administered. The patient had an uneventful recovery and was discharged well on the fourth postoperative day with a healthy infant. She was reviewed 6 weeks after delivery and was found to be well.

Discussion

A possible mechanism of the abnormal attachment of the placenta to the myometrium in the caesarean section scar region in the case of patients with a history of a caesarean delivery is thought to involve pathological changes in the vicinity of the caesarean scar and endometrium. They may cause the suboptimal implantation of the trophoblast, increase frequency of vascular malformation and increase fragility of vessels [4]. All these changes can be a possible cause of placenta praevia increta with caesarean scar invasion observed in the presented case study. However, no bladder invasion, reported by other authors, was observed [3, 5, 6].

The presented study confirmed the usefulness of ultrasound

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examinations and Colour Doppler in antenatal diagnosing of placenta increta [1, 3, 5]. In some cases MRI can be a useful tool, although its sensitivity is similar to or the same as ultrasonography with lower availability and higher costs [1, 5]. Additionally, a correlation between the presence of placenta increta and maternal serum markers: creatinine kinase and plasminogen activation inhibitor 2 (PAI-2) has been described in some studies [7, 8]. Antenatal imaging techniques can help to raise the suspicion of a morbidly adherent placenta, however, the diagnosis of placenta increta is made only if the placenta fails to separate at delivery and has to be confirmed anatomopathologically [1-3, 9, 10].

The gravida reported in this paper had a history of one caesarean section, which, similarly to a previous abortion, is considered to be a risk factor of placenta praevia increta [1,3,5].

Optimal management of abnormally invasive placentation remains unclear. Traditionally, a primary hysterectomy at the time of the caesarean section has been the mainstay of therapy, particularly in cases where the diagnosis has been discovered antenatally [11]. However, several reports have described the use of more conservative strategies aimed at preserving the uterus and maintaining future fertility. This approach involves leaving

the placental tissue in situ providing that the patient remains hemodynamically stable, ligation of causative vessels, partial uterine segment removal, uterine and vaginal packing with gauze, balloon tamponade, the B-Lynch suture, vertical compression sutures, sewing of the placental vascular bed and suturing an inverted lip of the cervix over the bleeding placenta bed. Uterine and internal iliac artery ligation and uterine artery embolization have also been reported [10, 12, 13]. Some authors have advocated the use of methotrexate to inhibit trophoblast growth and accelerate postpartum involution of the placenta [14].

The options for conservative treatments offer the potential to preserve fertility but further research with prospective evaluation of the different approaches is needed [15]. In 2005 the Royal College of Obstetricians and Gynaecologists published guidelines for placenta praevia, placenta praevia accreta and vasa praevia diagnosis and management. According to this manual, conservative management of placenta praevia increta can be successful and can preserve fertility. However, the efficiency of conservative management and the ultimate ability of these techniques to preserve fertility were challenged by some. According to the recent report by Sentilhes et al., successful conservative treatment for placenta increta did not appear to compromise the patients' subsequent fertility as well as obstetrical outcome [16]. Based on available studies RCOG changed the guidelines for placenta increta management in 2010 and recommended that conservative management of placenta increta when the woman is already bleeding is unlikely to be successful and risks wasting valuable time [10].

The conservative management may be used in carefully selected patients especially when they are young and wish to preserve fertility. The increasing number of caesarean deliveries results in the increase of placenta increta incidence. It seems essential to screen for those at risk, detect as precisely as possible by ultrasound and MRI techniques, and to prepare strategies for the multidisciplinary management of delivery and postpartum.

There is no single, right and optimum strategy for the management of placenta increta – care must be tailored to available resources.



Figure 1. A caesarean section followed by a hysterectomy – uncontrolled bleeding from the lower uterine segment incision after removing the placenta – the arrow shows the scar with placental invasion.

Conclusion

Early detection of placenta praevia increta in high-risk groups (history of a caesarean section and abortion) followed by careful counselling and choosing the most adequate management option, may prevent a serious postpartum hemorrhage and reduce the risk of neonatal and maternal complications.

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Standardy Polskiego Towarzystwa Ginekologicznego postępowania u kobiet z cukrzycą

Polish Gynecological Society standards of medical care in management
of women with diabetes

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**Aktualne rekomendacje opracował Zarząd Sekcji
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w ciąży” w składzie:**

1. **prof. dr hab. n. med. Ewa Wender-Ożegowska**
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3. **prof. dr hab. n. med. Jacek Brązert**
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9. **dr n. med. Agnieszka Zawiejska**

w oparciu o rekomendacje PTG z roku 2005 przygotowane
przez Zespół Ekspertów w składzie:

prof. dr hab. Krzysztof Drews, prof. dr hab. Romuald Biczysko,
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Cukrzyca jest najczęstszym powikłaniem metabolicznym
wikłającym ciążę. W Europie występuje u 3-5% ciężarnych.
W ciąży spotykamy dwa rodzaje cukrzycy:

- cukrzycę ciążową – GDM (*Gestational Diabetes Mellitus*) – gdy zaburzenia tolerancji węglowodanów lub cukrzyca rozwijają się lub są po raz pierwszy rozpoznane w ciąży,
- cukrzycę przedciążową – PGDM (*Pregestational Diabetes Mellitus*) – gdy kobieta chorująca na którykolwiek z typów cukrzycy (typ 1, 2 lub inne) jest w ciąży.

Rozróżnienie tych dwóch stanów jest istotne ze względu na różne problemy medyczne spotykane w obu grupach. W okresie ciąży podwyższone wartości glikemii u ciężarnej mogą inicjować szereg powikłań u matki i jej dziecka.

ADA def wczesnego GDM 2010/2011- dlaczego to nie jest wpisane

1. Definicja cukrzycy

Cukrzycą nazywa się grupę zaburzeń metabolicznych, których wspólną cechą jest hiperglikemia, będąca wynikiem bezwzględnej lub względnej niedoboru insuliny. Przewlekła hiperglikemia prowadzi do zaburzeń w metabolizmie białek, tłuszczów i gospodarki wodno-elektrolitowej. W konsekwencji tych zaburzeń może dochodzić do uszkodzenia różnych narządów i układów, a szczególnie naczyń krwionośnych, mięśnia sercowego, nerek, nerwów i narządu wzroku.

W okresie ciąży podwyższone wartości glikemii u ciężarnej mogą inicjować szereg powikłań u matki i jej dziecka.