

# Conservative Management of Placenta Accreta/Increta after Vaginal Birth

## Konservatives Management von Placenta accreta/increta nach Spontanpartus

### Authors

S. Peiffer<sup>1</sup>, J. Reinhard<sup>2</sup>, A. Reitter<sup>1</sup>, F. Louwen<sup>1</sup>

### Affiliations

<sup>1</sup> Obstetrics and Gynaecology Department, Johann Wolfgang Goethe University Frankfurt, Frankfurt/Main  
<sup>2</sup> St. Marienkrankenhaus, Obstetrics and Gynaecology Department, Frankfurt/Main

### Key words

- placenta accreta/increta
- conservative management
- outcome

### Schlüsselwörter

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### Correspondence

Priv.-Doz. Dr. Joscha Reinhard,  
 MBBS BSc (Hon)  
 St. Marienkrankenhaus  
 Obstetrics and Gynaecology  
 Department  
 Richard-Wagner-Straße 14  
 60318 Frankfurt  
 J.Reinhard@katharina-kasper.de

### Abstract



**Aim:** Aim of the study was to show that conservative management with preservation of the uterus and of fertility is possible in patients with placenta accreta/increta after vaginal delivery.

**Method:** A retrospective analysis of patients with placental attachment disorders after vaginal delivery was done in a perinatal centre between November 2009 and April 2011. The patient collective was identified using the ICD-10 codes for placenta accreta/increta/percreta, and patient records were analysed for risk factors, maternal morbidity, preservation of the uterus and of fertility, and neonatal outcome.

**Results:** Three cases of placenta increta were identified in the last 1.5 years out of a total of 1457 vaginal deliveries, and all 3 cases were treated conservatively. Mean maternal age was 35.3 years; gestational age ranged from 39 to 41 weeks, and mean duration between delivery of the child and delivery of the placenta was 44.67 days (range: 14–100 days). Two patients developed symptoms of endomyometritis, including fever, leukocytosis and increased CRP levels. All 3 women were successfully managed with preservation of the uterus.

**Conclusion:** In selected cases with placenta accreta/increta after vaginal delivery, it is possible to avoid surgical procedures, particularly hysterectomy procedures, and successfully manage these patients conservatively with preservation of the uterus.

### Zusammenfassung



**Ziel:** Ziel dieser Arbeit ist es zu zeigen, dass bei Patientinnen mit Placenta accreta/increta nach Spontanpartus durch konservatives, abwartend observierendes Management eine uterus- und fertilitätserhaltende Therapie dieser Plazentationsstörung durchgeführt werden kann.

**Methodik:** Retrospektive Analyse von Patientinnen mit Plazentationsstörung nach Spontanpartus von November 2009 bis April 2011 in einem Perinatalzentrum. Das Patientenkollektiv wurde anhand des ICD-10 Codes für Placenta accreta/increta/percreta identifiziert und die Krankenakten im Hinblick auf Risikofaktoren, maternale Morbidität, Uterus- und Fertilitätserhalt, sowie neonatales Outcome untersucht.

**Ergebnis:** Es wurden, von insgesamt 1457 vaginalen Entbindungen, 3 Fälle von Placenta increta in den letzten 1,5 Jahren identifiziert, die allesamt konservativ therapiert wurden. Mittleres maternales Alter lag bei 35,3 Jahren, das Gestationsalter zwischen 39. und 41. SSW und die mittlere Dauer zwischen Partus des Kindes und der Plazenta 44,67 Tage (Spannweite 14–100 Tage). Zwei Patientinnen entwickelten Symptome einer Endomyometritis wie Fieber, Leukozytose und CRP-Anstieg. Alle 3 Frauen konnten uteruserhaltend konservativ therapiert werden.

**Schlussfolgerung:** In einzelnen Fällen kann bei der Diagnose Placenta accreta/increta nach Spontanpartus von einem operativen Vorgehen, insbesondere, der Hysterektomie, abgesehen und ein uteruserhaltendes, konservatives Management gewählt werden.

### Introduction



Placenta accreta/increta/percreta are placental attachment disorders in which the placental villi extend into the uterine myometrium due to an al-

most complete lack of decidua basalis (placenta accreta, approx. 78% of cases), extend deep into the myometrium (placenta increta, approx. 15% of cases) or penetrate the entire myometrium (placenta percreta, 5–7%) and extend into the se-

rosa, in some cases even infiltrating the bladder or rectum. The incidence of placental attachment disorders (placenta accreta/increta/percreta) in clinical practice, particularly in association with placenta praevia or a low-lying placenta, is increasing [3] due to higher numbers of caesarean sections being performed (up to 40% after 2 or more caesarean sections) [1,2]. The incidence of placenta accreta ranges from 1:2500 to 1:533 births, with a tenfold increase reported over the last 50 years [2,4,5]. Risk factors include previous uterine operations (e.g., myoma enucleation, curettage, etc.), particularly previous caesarean section, and placenta praevia with or without previous uterine surgery, but also maternal age and multiparity [5]. The diagnosis of placenta accreta/increta/percreta is rarely made prenatally. However, suspected placenta accreta/increta may be diagnosed by sonography in women with an increased risk of this condition, using colour Doppler [6] or MRI for more detail [7]. Post partum, placenta accreta/increta is associated with placenta retention, heavy maternal bleeding and significantly higher maternal morbidity and mortality rates of up to 6–7% [8]. Life-threatening haemorrhage, embolism, damage to neighbouring organs with secondary injuries, transfusion-related complications, re-operation, and multi-organ failure are only a few of the possible consequences of placenta accreta, making optimal clinical management extremely important.

In cases with placenta accreta/increta diagnosed prenatally, the child should be delivered by planned caesarean section carried out in a large perinatal centre with a good infrastructure and a blood bank, and the possibility that the patient will require abdominal hysterectomy immediately after caesarean section needs to be previously discussed with the patient [1,9]. The standard therapy for placenta accreta/increta diagnosed post partum is currently also hysterectomy. However, some reports have described various therapies [10] which resulted in preservation of the uterus and of fertility. Reported therapies include medical treatment with methotrexate [11], embolisation of the uterine artery and expectant management [12,13], and the associated maternal morbidity was low; however, treatment was done predominantly in patients delivered by caesarean section [14]. We describe here 3 cases of placenta accreta/increta after vaginal delivery treated conservatively with preservation of the uterus and of fertility.

## Method

A retrospective analysis of patients with placental attachment disorders presenting to our perinatal centre between November 2009 and April 2011 was done. The patient collective was initially identified using the ICD-10 codes (O43 – Placental disorders) for placenta accreta/increta/percreta obtained from the hospital database ORBIS©. The patient records were searched for cases with placental attachment disorders which were subsequently analysed with regard to risk factors, maternal morbidity, preservation of the uterus and of fertility, and neonatal outcome. Only patients with a peripartum diagnosis of placental attachment disorder who gave birth vaginally were included in our study. Patients with placenta accreta/increta diagnosed prenatally who underwent planned primary section were excluded. The case reports of the patients with placenta accreta/increta identified in this series are described here.

## Results



A total of 2137 births were recorded for the period from November 2009 to April 2011; 1457 of these were vaginal deliveries, and 3 cases of placenta accreta/increta after vaginal delivery were identified. All 3 cases were treated conservatively.

The first patient, a 34-year-old III G IIP with 2 previous vaginal births and pregnancies occurring in rapid succession (<1 year), was admitted to hospital in the 40+0 GW with premature rupture of the amnion. She had no known secondary diagnosis and had had no previous operations. The birth was a forceps delivery without complications due to pathological CTG, and the patient gave birth to a vital, female infant (Apgar score 9/10/10, arterial pH [pHa] 7.20, venous pH [pHv] 7.32). Placenta accreta/increta was suspected after the placenta failed to detach post partum. Two unsuccessful attempts at manual detachment with intra-uterine palpation followed, but the placenta remained in utero. Hb dropped to 4.4 g/dl and the patient was transfused 2 units of packed red blood cells; therapy was then continued with uterotonic drugs (oxytocin and sulproston). As the uterus had contracted well and the patient's circulation was stable, the decision was taken to manage the patient conservatively, and the patient was discharged on the 6th day post partum under close outpatient monitoring. On the 14th day post partum the patient was admitted with spontaneous detachment of the placenta and incipient endomyometritis (CRP 0.47 mg/dl, leukocytes 11.48/nl, Hb 8.7 g/dl), which was treated successfully with Methergin® (methylergometrine) and i.v. antibiotic therapy with metronidazole. Histological examination of the placenta showed regressive changes in the placental tissue without active inflammation. After a brief stay in hospital the patient was discharged home in good health.

The 2nd patient was a 34-year-old III G 0P admitted to hospital ex domo in the 38+2 week of pregnancy with premature rupture of the amnion. The patient had gestational diabetes which was successfully managed dietetically and had previously been treated for sterility. She had a known secondary diagnosis of grade IV endometriosis with two previous laparotomies and two laparoscopies, and had had two previous miscarriages with curettage, in 2006 and 2009, requiring re-curettage of retained material. The patient also had recurrent episodes of paroxysmal supraventricular tachycardia treated in 2009 by electroconversion, although this was not considered a contraindication for vaginal birth. The patient developed contractions close to term. Dilation and the second stage of labour were unremarkable, and resulted in spontaneous vaginal birth of a vital, male infant (Apgar 9/10/10, pHa 7.17, pHv 7.29) with a cleft lip and palate diagnosed prenatally. The placenta was retained and an attempt at manual detachment followed by intrauterine palpation was made (cervical dilation 5 cm). The attempt was unsuccessful, and placenta increta in the area where the right fallopian tube joins the uterus was suspected for the first time. It was subsequently decided to manage the patient conservatively, and the placenta was left in place as the patient's circulation was stable and the uterus had contracted well (▶ Fig. 1). Postoperatively the patient received a transfusion of 2 units of packed red blood cells (Hb control 8.7 mg/dl). The patient was monitored closely, with regular clinical and laboratory controls and daily ultrasonography imaging to pick up potential signs of haemorrhage or infection. On the 13th day post partum an attempt was made with sulprostone 1500 µg/24 h administered intravenously, however the placenta continued to remain in situ. The further course of action was discussed with the pa-



**Fig. 1** Sonographic image. Patient 2 with placenta increta 7 days post partum.

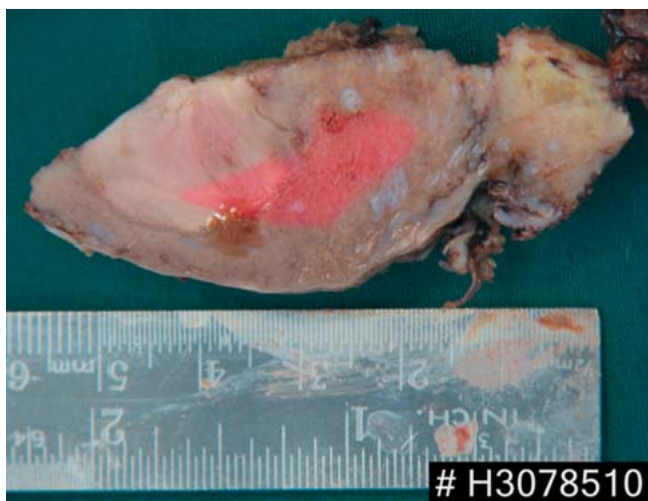


**Fig. 2** Sonographic image. Patient 2 with placenta increta 44 days post partum.

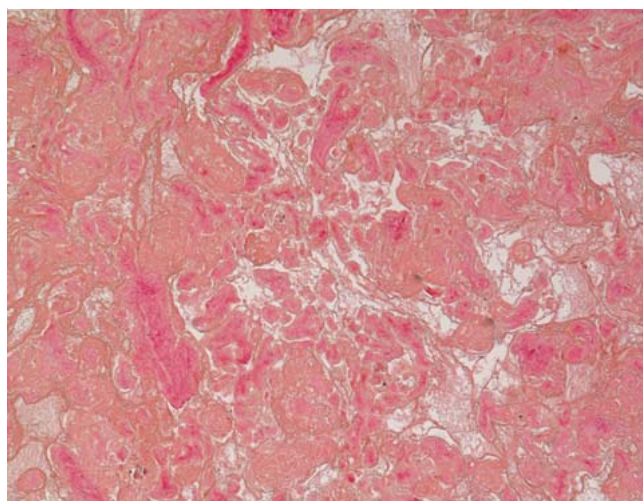
tient and it was proposed that she be discharged home with close monitoring on an outpatient basis. Initially the patient returned to the outpatient clinic every week, subsequently every second week, where her progress was monitored and she was treated with uterotonic drugs (Cergem [gemeprost 1 mg]/sulprostone and Prepidil gel [0.5 mg Dinoprost]/sulprostone). Over time, sonography showed reduced placental perfusion and there were gradual signs of detachment in the affected area, so that on the 100th day post partum a repeat attempt at manual detachment followed by intrauterine palpation was indicated, following which the placenta increta could be successfully detached (Figs. 2 to 4). During the whole period the patient's circulation remained stable, the uterus had contracted well and there were no signs of infection.

The 3rd patient, a 38-year-old IIG IP, was admitted to hospital with contractions in the 39+0 GW and remained in hospital from March to April 2011. The patient had a history of previous spontaneous birth and placenta accreta, treated with manual detachment of the placenta and intrauterine palpation. There was

no history of any other previous operations or secondary diagnoses. On March 11, 2011, after a spontaneous vaginal birth without complications, the patient was delivered of a vital, male infant (Apgar score 9/10/10, pHa 7.21, pHv 7.33). As bleeding increased post partum and the placenta was retained, placenta accreta/increta was again suspected. As the uterus had contracted well and the patient's circulation remained stable, the decision for conservative expectant management was taken together with the patient. The patients was followed up regularly with clinical, laboratory and sonography investigations (Fig. 5). On the 3rd day post partum, sonography appeared to indicate that the placenta had completely detached from the myometrium after therapy with the uterotonic drug oxytocin. However, although the cervix was dilated the placenta could not be removed. The patient had intermittent bleeding and Hb dropped to 5.7 g/dl during her stay in hospital, requiring transfusion of a total of 6 units of packed red blood cells und 1 unit of fresh frozen plasma (FFP) during her stay in hospital. On the 8th day post partum, after it was shown that the uterus had contracted well and the patient's cir-



**Fig. 3** Macroscopic image of regressive changes to placenta increta in utero 100 days post partum.



**Fig. 4** Fibrotic villi 100 days post partum (H&E stain).





**Fig. 5** Sonographic image. Patient 3 with placenta accreta post partum.

culcation was stable, the patient was discharged as an outpatient under close supervision (CRP 2.92 mg/dl, leukocytes 11.07/nl, Hb 7.8 g/dl). Post partum the patient received additional antibiotic therapy consisting of ampicillin and cefuroxime for 7 days. The patient was informed about the rules she need to follow at home, including regular measurement of her temperature, and the importance of returning to hospital immediately in the event of vaginal bleeding. The next ultrasound follow-up was on the 14th day post partum and the patient was seen to be in good clinical health but with slightly increased inflammation parameters (CRP 6.85 mg/dl, leukocytes 11.36/nl, Hb 8.1 g/dl). Sonographic imaging was able to differentiate the placenta from the endometrium/myometrium, but perfusion was still present in the basal areas near the endometrium. Continued expectant management was agreed on with the patient. On the 19th day post partum the patient presented to the clinic with a temperature of 37.4 °C and was again admitted to hospital. Laboratory values showed signs of infection (CRP 14.77 mg/dl, leukocytes 16.03/nl and Hb 8.5 g/dl) and intravenous antibiotic therapy with ampicillin was initiated. Treatment to trigger uterine contractions was started with sulprostone. Laboratory values of inflammation parameters continued to increase and the patient's temperature remained subfebrile. Antibiotic therapy was expanded to include metronidazole, and the decision was taken to detach the placenta manually with intrauterine palpation the following day due to increased bleeding. The cervix was dilated by 3–4 cm, the placenta was removed manually followed by careful curettage of the endometrial cavity. Sonography showed no sign of any remnants remaining in situ; sulprostone perfusion was continued until the following day to prevent atonic haemorrhage. Only a few hours postoperatively, the patient developed incipient sepsis or SIRS (systemic inflammatory response syn-

drome) with a temperature of 39.2 °C, leukopenia of 2.00/nl, CRP level of 22.23 mg/dl and a drop in Hb to 5.4 g/dl on the 1st postoperative day. Thrombocytes remained stable and within normal ranges. The patient had tachycardia of 120/min, oliguria, and a continued high temperature. She received 2 units of packed red blood cells and 2 units of FFP. Volume replacement and diuretic therapy were initiated, and antibiotic management was changed to imipenem and metronidazole administered intravenously with close clinical and laboratory controls. The uterus remained well-contracted at all times. Blood culture confirmed infection with ESBL-producing *Escherichia coli* sensitive to imipenem according to the antibiogram. The patient's condition quickly stabilised and she could be transferred from the delivery room to a normal ward where i.v. antibiotic therapy was continued. The patient was discharged in good health with a well-contracted uterus on the 6th day postoperatively (26th day post partum). The mean maternal age of these 3 patients was 35.3 years, gestational age ranged between 39 and 41 weeks, and mean duration between delivery of the baby and delivery of the placenta was 44.67 days (range: 14–100 days). Two patients developed endomyometritis or SIRS. All three patients received packed red blood cells (mean: 4 units per patient). All 3 women were treated conservatively and the uterus could be preserved in all cases. Foetal outcome based on Apgar scores and pH values remained unaffected by placenta accreta/increta in all three cases (▶ **Table 1**).

## Discussion



Three cases of placenta accreta/increta after vaginal birth were diagnosed in our perinatal centre in the last 1.5 years (incidence 1:486), which is in accordance with the reports of increased placentation disorders in the past few years. The risk factors for placenta accreta/increta outlined in the introduction (advanced maternal age, previous uterine operations) were all present in our patient collective (▶ **Table 1**). Nevertheless, in all cases the diagnosis was only made post partum. The cases described here show that conservative expectant management is possible in selected patients with placenta accreta/increta diagnosed peripartally, even after vaginal birth, with patients closely supervised on an outpatient basis. Such patients need to have a stable circulation and no haemodynamically relevant bleeding or bleeding controllable by RPBC transfusion and measures such as the administration of uterotonic drugs (oxytocin, sulprostone, methyl-ergometrine). Moreover, if women have been discharged home as outpatients, then regular clinical, laboratory and sonographic controls with close follow-up to ensure early recognition and management of possible complications are indispensable for successful conservative therapy. Two of the 3 cases described here developed infection, and both cases were successfully treated. In 2 of the 3 patients managed expectantly, the placenta was detached manually with intrauterine palpation to retrieve the

**Table 1** Patient characteristics and results for placenta accreta/increta.

	G/P	Age (years)	GW at delivery	Days to delivery of the placenta	Apgar score	Birth weight (g)	pHa/pHv	Number of PRBCs
Patient 1	III/II	34	40 + 0	14	9/10/10	3 500	7.20/7.32	2
Patient 2	III/0	34	38 + 3	100	9/10/10	3 320	7.17/7.29	2
Patient 3	II/I	38	39 + 0	20	9/10/10	3 280	7.21/7.33	8
Mean		35.3	39 + 1	44,7	9/10/10	3 367	7.19/7.31	4

placenta after sonography had indicated that the placenta was gradually becoming detached. Like the results reported by Senthiles et al. [12] and Provansal et al. [15], we were able to preserve the uterus and preserve fertility in 3 selected patients with placenta accreta/increta diagnosed peripartally through conservative, expectant management, combined with symptomatic therapy and close monitoring.

### Conclusion

▼  
If a patient does not want any more children, hysterectomy following caesarean section is the treatment of choice for placenta accreta/increta [1]. Nevertheless, if the patient wishes to have another child the possibility of conservative management leaving the placenta in situ (after spontaneous vaginal birth or caesarean section) needs to be evaluated in larger studies to develop evidence-based therapy options. At present, the option of conservative management can be discussed with selected patients taking the above-mentioned conditions into consideration.

### Conflict of Interest

▼  
None.

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