Introduction

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

Conservative Management of Placenta Accreta/Increta after Vaginal Birth

Konservatives Management von Placenta accreta/increta nach Spontanpartus

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


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.
roa, in some cases even infiltrating the bladder or rectum. The incidence of placental attachment disorders (placenta accreta/ina-
creta/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 inci-
dence 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 sec-
tion, and placenta praevia with or without previous uterine sur-
gery, but also maternal age and multiparity [5]. The diagnosis of
placenta accreta/incipra/percreta is rarely made prenatally. How-
ever, suspected placenta accreta/incipra may be diagnosed by so-
nography in women with an increased risk of this condition, using
colour Doppler [6] or MRI for more detail [7]. Post partum,
placenta accreta/incipra is associated with placenta retention,
heavy maternal bleeding and significantly higher maternal mor-
bidity and mortality rates of up to 6–7% [8]. Life-threatening haemorrhage, embolism, damage to neighbouring organs with
secondary injuries, transfusion-related complications, re-opera-
tion, and multi-organ failure are only a few of the possible conse-
quences of placenta accreta, making optimal clinical manage-
ment extremely important.

In cases with placenta accreta/incipra 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 ab-
dominal hysterectomy immediately after caesarean section
needs to be previously discussed with the patient [1,9]. The stan-
dard therapy for placenta accreta/incipra diagnosed post partum
is currently also hysterecomy. However, some reports have de-
scribed various therapies [10] which resulted in preservation of
the uterus and of fertility. Reported therapies include medical
treatment with methotrextate [11], embolisation of the uterine
artery and expectant management [12,13], and the associated
maternal morbidity was low; however, treatment was done pre-
dominantly in patients delivered by caesarean section [14]. We
describe here 3 cases of placenta accreta/incipra after vaginal de-

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/incipra/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, preser-
vation of the uterus and of fertility, and neonatal outcome. Only
patients with a peripartial diagnosis of placental attachment dis-
order who gave birth vaginally were included in our study. Pa-
tients with placenta accreta/incipra diagnosed prenatally who
underwent planned primary section were excluded. The case re-
ports of the patients with placenta accreta/incipra identified in
this series are described here.

Results

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

The first patient, a 34-year-old III G I IP 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 male infant (Apgar score 9/10/10, arterial
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 withuter-
tonic drugs (oxytocin and sulproston). As the uterus had con-
tracted 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 outpa-
tient monitoring. On the 14th day post partum the patient was
admitted with spontaneous detachment of the placenta and in-
cipient endomyometritis (CRP 0.47 mg/dl, leukocytes 11.48/ml,
Hb 8.7 g/dl), which was treated successfully with Methergin®
(methylergometrine) and i.v. antibiotic therapy with metronida-
zone. 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 0 P 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 suc-
cessfully 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 laparo-
copies, 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 supraventric-
ular 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 spon-
taneous vaginal birth of a vital, male infant (Apgar score 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 sus-
pected 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 pa-

tient 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 adminis-
tered intravenously, however the placenta continued to remain
in situ. The further course of action was discussed with the pa-
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 Prepilid 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-
culation 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 developed infection, and both cases were successfully treated. In successful conservative therapy. Two of the 3 cases described here managed expectantly, the placenta was detached manually with intrauterine palpation to retrieve the placenta.

### Table 1

<table>
<thead>
<tr>
<th>G/P</th>
<th>Age (years)</th>
<th>GW at delivery</th>
<th>Days to delivery of the placenta</th>
<th>Apgar score</th>
<th>Birth weight (g)</th>
<th>pHa/pHv</th>
<th>Number of PRBCs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient 1</td>
<td>III/II</td>
<td>34</td>
<td>40 + 0</td>
<td>14</td>
<td>9/10/10</td>
<td>3500</td>
<td>7.20/7.32</td>
</tr>
<tr>
<td>Patient 2</td>
<td>III/0</td>
<td>34</td>
<td>38 + 3</td>
<td>100</td>
<td>9/10/10</td>
<td>3320</td>
<td>7.17/7.29</td>
</tr>
<tr>
<td>Patient 3</td>
<td>II/I</td>
<td>38</td>
<td>39 + 0</td>
<td>20</td>
<td>9/10/10</td>
<td>3280</td>
<td>7.21/7.33</td>
</tr>
<tr>
<td>Mean</td>
<td>35.3</td>
<td>39 + 1</td>
<td>44.7</td>
<td>9/10/10</td>
<td>3367</td>
<td>7.19/7.31</td>
<td>4</td>
</tr>
</tbody>
</table>

**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 placentaion 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 peripartum, 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 RPB transfusion and measures such as the administration of uterotonics (oxytoxin, 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

![Fig. 5 Sonographic image. Patient 3 with placenta accreta post partum.](image-url)
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.

**References**

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