Case reports

Changes of the clinical presentation of abruptio placentae

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Introduction

The first classification of the different stages of abruptio placentae (a.p.), which is still effective, was done in 1954 (Page et al.). This classification was based upon 4 different stages. In the stages 0 and I there were either no or just a few slightly developed clinical symptoms. Therefore in many cases the diagnosis was made just intra or post partum. However, an augmented perinatal mortality is described. By contrast, the stages II and III show severe clinical symptoms which can be diagnosed easily.

The frequency of the a.p. altogether from 1963 to 1970 lay between 0.4 and 0.7% (Kuhn and Graeff, 1970), whereas the heavy forms (stage II and III) had a frequency of 0.2%. This fact shows that approximately a quarter or even half of all the cases of a.p. had to be classified as heavy or very heavy forms; therefore they could be diagnosed clinically. This situation has principally changed for two reasons: on the one hand there is an extensive knowledge of the pathophysiology of the disease. Just slight changes of the coagulation system (for example thrombopenia) (Beller, 1968, 1974) can be used as an indicator of a beginning a.p.. On the other hand, sonography offers the technical conditions for an early diagnosis of the a.p. even if the diagnostical problems of this method cannot be neglected (McGahan et al., 1982; Jaffe et al., 1981). If all the patients with painful contractions and/or vaginal bleeding were examined sono graphically in combination with coagulation testing, cases of a.p. in stages 0 or I would necessarily be selected from among the large number of such patients. In this way an early therapy can be done and the prognosis
must improve. By means of a retrospective analysis of the patients with a.p. in the Department of Gynecology and Obstetrics in Göttingen from 1972 to 1983 (detailed examinations from 1979 to 1983) we attempt to show the above-mentioned change of the characteristics of this disease with a corresponding amelioration of the prognosis.

Analysis of the observed period from 1972 to 1983

Table I shows an increasing frequency of a.p. since 1979 even if one considers the small number \( n = 53 \). The frequency of the placenta praevia is not changed. So far the a.p. has been considered as the classical complication of the last weeks of pregnancy, particularly the last days before or during the delivery. Generally in these cases there are patients with typical symptoms coming to the hospital as emergency patients. Our own cases demonstrate that most of the a.p. are still diagnosed after the 33rd wk of gestation; however, 12 cases of 32 (1979–1983) could be diagnosed before the 33rd wk, and were treated, and 21 cases were seen before the 37th wk. Concerning early diagnosis, it is important to observe that 19% of the cases had

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Number of Births</th>
<th>Perinatal Mortality 1972–1978</th>
<th>Perinatal Mortality 1979–1983</th>
<th>Premature Separation of the Placenta</th>
<th>Placenta Praevia</th>
</tr>
</thead>
<tbody>
<tr>
<td>1972</td>
<td>1367</td>
<td>0.24</td>
<td>0.39</td>
<td>0.41</td>
<td>0.30</td>
</tr>
<tr>
<td>1973</td>
<td>1036</td>
<td>0.19</td>
<td>0.41</td>
<td>0.31</td>
<td>0.31</td>
</tr>
<tr>
<td>1974</td>
<td>979</td>
<td>0.24</td>
<td>0.41</td>
<td>0.31</td>
<td>0.24</td>
</tr>
<tr>
<td>1975</td>
<td>957</td>
<td>0.24</td>
<td>0.41</td>
<td>0.31</td>
<td>0.24</td>
</tr>
<tr>
<td>1976</td>
<td>960</td>
<td>0.24</td>
<td>0.41</td>
<td>0.31</td>
<td>0.24</td>
</tr>
<tr>
<td>1977</td>
<td>868</td>
<td>0.24</td>
<td>0.41</td>
<td>0.31</td>
<td>0.24</td>
</tr>
<tr>
<td>1978</td>
<td>864</td>
<td>0.24</td>
<td>0.41</td>
<td>0.31</td>
<td>0.24</td>
</tr>
<tr>
<td>1979</td>
<td>864</td>
<td>0.24</td>
<td>0.41</td>
<td>0.31</td>
<td>0.24</td>
</tr>
<tr>
<td>1980</td>
<td>101</td>
<td>0.24</td>
<td>0.41</td>
<td>0.31</td>
<td>0.24</td>
</tr>
<tr>
<td>1981</td>
<td>857</td>
<td>0.24</td>
<td>0.41</td>
<td>0.31</td>
<td>0.24</td>
</tr>
<tr>
<td>1982</td>
<td>822</td>
<td>0.24</td>
<td>0.41</td>
<td>0.31</td>
<td>0.24</td>
</tr>
<tr>
<td>1983</td>
<td>865</td>
<td>0.24</td>
<td>0.41</td>
<td>0.31</td>
<td>0.24</td>
</tr>
</tbody>
</table>
vaginal bleeding before the 20th wk of gestation, and oral or intravenous tocolysis was done in 65% before and/or after the ultrasonic examination because of harmful contractions. From 1979-1983 (n = 32) cesarean section was chosen as an adequate form of delivery; the uncorrected perinatal mortality was 25%, the corrected rate was 15%. In contrast to these results the uncorrected perinatal mortality in the observed period from 1972–1978 was 47.6%, corresponding to the results which were given in the literature of this time with a rate of 40–80% (Kuhn and Graeff, 1970; Huisjes et al., 1979). Considering the period from 1979 to 1983, when a more precise diagnosis was possible because new ultrasonic systems of high accuracy were available, 20 patients were sonographically examined 24–48 h and more before delivery. Generally sonographic techniques are not necessary in an acute situation, because the clinical diagnosis in combination with the analysis of the coagulation system provides sufficient and definite information. In 12 cases the sonographic diagnosis of a.p. with retroplacental hematoma was confirmed; in 3 other cases there was a high probability. Of 20 patients, the sonographic diagnosis was right in 15 cases. There were no typical signs of a.p. in 5 patients. These results seem to be remarkable because the examinations had been done 24–48 h (and more) before the delivery and before the onset of typical symptoms.

In conclusion one can say:
1. The frequency of the diagnosis "abruptio placentae" has increased dramatically since 1979.
2. Before 1979 the patients were commonly hospitalized as emergency cases (stages II and III). Since 1979 only 3 patients had to be classified as Page II or III (n = 32), 29 as Page 0, and I ante partum.
3. There is an important difference in perinatal mortality between the two groups: 1972–1978, 47.6%; 1979–1983, 25%.
4. Of 32 patients (1979–1983) 65% had painful uterine contractions and had to be treated by Fenoterol before and/or after the diagnosis of a.p.

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L. W.-. 14.2.1961 (Fig. 1). History: I-gravida, 0-para. No relevant facts in the history (2 or 3 cigarettes daily (?)). No complications during the present pregnancy until the 28th wk of gestation, No pre-eclampsia, no trauma.

12.1.1982 (28th wk of gestation) painful contractions, dizziness, no incompetence of the cervix, normal CTG, no hemorrhage.

Sonography: 12.1.82. Baby normal in size; placenta localization, fundus anterior wall. At the cranial margin of the placenta anechoicity, diameter 5 cm. Preliminary diagnosis: abruptio of the placenta with retroplacental hematoma. No active treatment, because of the mother's wish to have the baby at any cost. Intravenous tocolysis by means of Fenoterol. Treatment with Betametasone 48 h. Controls of hematologic and hemodynamic parameters in an intensive-care unit. Continuous controls of the clotting system 4 times a day.

Sonography: 13.1.82: Increasing hematoma, volume: $8 \times 8 \times 7$ cm. Decreasing hemoglobin from 9.2 to 8.5 g% after correction of the Fenoterol-induced dilution.
14.1.82: The sonographic diagnosis was proved, there was a retroplacental hematoma of 10 cm, hemorrhagic amniotic fluid (delivery by c.s.).

Baby: 870 g, Apgar 7/8/9, moderate RDS, assisted ventilation 4 wk post partum because of apnea episodes. No complications during the last 2 yr.

Comment. Conservative management cannot be recommended generally. If there are arguments against an immediate delivery, the observation of such a patient has to be done in an intensive-care unit. The size of the hematoma has to be controlled by means of repeated sonographic examinations.

Fig. 1(a): Sagittal scan. 28th wk of gestation. Retroplacental hematoma, volume: $5 \times 5 \times 2$ cm. Dislocation of the placenta (arrows). (b): The same hematoma 24 h later. volume: $8 \times 8 \times 7$ cm.
K.R., 28.2.1942 (Fig. 2). History: II-gravida, I-para. Abruptio of the placenta complicated by DIC 2 yr ago. Baby alive.

No complications during the present pregnancy until the 28th wk of gestation. At this time moderate uterine contractions, shortening of the cervix. Oral tokolysis with Fenoterol, hospitalization. No hemorrhage, laboratory findings normal.

Sonography: 4.12.80. “Thick placenta” (6 cm). The patient’s blood group was rh-negative. Exclusion of rh-incompatibility. No hemorrhagic amniotic fluid. Hema-

Fig. 2(a): Transverse scan in the middle third of the uterus (4.12.80). “Thick placenta” at the posterior wall (6 cm). Basic hypervascularization (small arrows). (b): The same scan (5.2.81). Thickness of the placenta (9 cm). No more hypervascularization.
tologic and hemodynamic parameters normal, no coagulation defect. No clinical symptoms after the contractions had disappeared.

**Sonography.** After several sonographic controls increasing thickness of the placenta. 5.2.81: Increasing moderate uterine contractions, normal CTG, no pains, no typical signs of abruptio. Platelet counts: 167000, 2 h later 140000, 1 h later 127000. Cs: because of suspicious sonography and moderate decrease of platelets and history.

During the operation development of severe DIC with uterus Couvelaire. Placenta

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Fig. 3(a): Sagittal scan on the right side of the uterus. (b): Transverse scan in the caudal third of the uterus. Marginal hematoma of a low-sited placenta (anterior wall); volume: $7 \times 3 \times 3$ cm (arrows).
increta plus central retroplacental hematoma under high pressure caused by central separation of the placenta.

Baby: corresponding to 32nd wk of gestation 1040 g, Apgar 7/9/10, no postpartum complications.

Mother: removal of the uterus supracervically because of important blood-loss caused by the placenta increta. Two days later relaparotomy, because of hemorrhage of the cervical veins. Extirpation of the cervix.

Abdominal cavity: multiple hemorrhagic foci in the serosa of the ileum and the jejunum, one small perforation, diameter 2 mm.

Fig. 4(a): Sagittal scan (as Fig. 3). (b): Transverse scan (as Fig. 3). Consolidated hematoma: volume 5×4×3 cm.
Diagnosis: DIC with monolocalization (clinically) in the small bowel. The patient died 3 months after the Cs due to progressing necrosis of the bowel in connection with peritonitis.

Comment. The Cs was done because of the suspicious sonographic findings and the development of a slight thrombocytopenia. If there is a “thick placenta”, abruptio must be taken in consideration.


Present pregnancy: spotting in the 27th wk of gestation, moderate uterine
contractions (one single hemorrhage in early pregnancy). No alteration of the cervix.
Low dose tokolysis, disappearance of the contractions.

**Sonography: 19.9.82.** Anechoicity behind the normally sited placenta, diameter 5
cm at its caudal margin. Hospitalization, treatment by Betamethasone, no symp-
toms. Continuous controls of hematological and hemodynamic parameters without
pathology. No coagulation defect. Regression of the anechoicity (retroplacental
hematoma) during the next 4 wk. Cs in the 39th wk of gestation because of
pathologic CTG and the history. Baby: 2890 g, Apgar 9/10/10, normal placenta, no
hematoma.

**Comment.** Abruptio of the placenta has not been proved in the presented case
clinically, yet the continuous regression of the anechoicity, the spotting and the
premature labor make it probable that there was a retroplacental hemorrhage. In
conclusion one can say that partial separations of the placenta are reversible in some
cases.

**Conclusions**

It seems that the modern perinatal diagnostic procedure including the analysis of
the coagulation system is able to find premature abruptio of the placenta in all the
stages including stage 0 and I according to Page et al. (1954). The early diagnosis in
combination with subsequent control also allows in individual cases a conservative
procedure up to spontaneous delivery with the intravenous tokolysis until the
maturity of the lungs is realized. Complete or incomplete conservative procedure has
to be carried out in consideration of the risks. Commonly it is still true that the
delivery has to be performed immediately when an abruptio of the placenta is
urgently suspected. If clinical symptoms are missing and if no change in the analysis
of the coagulation system arises, a conservative procedure is possible in individual
cases; retroplacental hematomas are reversible. The most effective method to find
this potentially life-threatening disease early and to treat mother and child efficiently
is a consequent sonographical, hematological and hemodynamic examination and an
analysis of the coagulation system. These examinations have to be carried out in all
patients with painful contractions without consideration of the gestational age and
of apparent or missing clinical symptoms.

Patients with a history of bleeding are especially susceptible to a premature a.p.
Patients who had trauma in their history are threatened up to 14 days and longer
after the accident.

In spite of all the diagnostic difficulties in the sonographic diagnosis of anechoic-
ity, the conclusion seems justified that a precise qualified sonographic procedure is
an important component in reducing the number of stages II and III of the a.p. in
favour of stages 0 and I according to Page. In this way the prognosis of mother and
child can be definitely improved.

**References**

Frauenheilk., 28, 113.