PLACENTA EXTRACHORIALIS

A Clinico Pathological Study

by

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The clinical significance of placenta extrachorialis is not yet clearly understood. The subject still excites interest. The interest is illustrated by the enunciation of at least twelve hypotheses which attempt to explain the morphogenesis and clinical significance of marginate and circumvallate placentae. Williams (1927), Pinkerton (1956) and Wentworth (1968) are among those workers who have thought that the extrachorial placenta is simply an anatomical variant of no clinical significance. Ever since Hobbs and Rollins (1934) Hobbs and Price (1940) declared for the first time the clinical significance of placenta extrachorialis, there have been periodic reports by various workers, Hunt *et al,* (1947) Paalman and Veer (1953), Morgan (1955), Ziel (1963), Wilson and Paalman (1967) Marqueto-Topete *et al,* (1968) and Malkani and Bhasin (1970) maintain that placenta extrachorialis is linked with a very high incidence of antepartum bleeding, premature labour and foetal death. Scott (1960) found that placenta extrachorialis was associated unduly frequently with antepartum haemorrhage but was otherwise of no clinical importance. Because this controversy remains still unsolved, a concerted effort to decide this issue is long overdue.

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In this prospective study we have analysed 1375 placentae of patients with reference to abnormalities including extrachorial placentae. This report will delineate our experience with this condition and its significance to both the mother and her baby.

The term placenta extrachorialis refers to those conditions in which on gross inspection the transition from membranous to villious chorion occurs at a variable distance from the circumference of the placenta. The projection of villous tissue beyond the margin of the chorionic plate may extend around the entire periphery of the placenta or may involve only portions of the circumference. The edge of the chorionic plate may be either marginated by a thin fibrous ring where the foetal vessels appear to terminate or circumvallated by a thickened whitish infolding of tissue toward the centre of the placenta.

Material and Methods

The data for this report were obtained from 1375 consecutive deliveries between February 1, 1972 and May 31, 1973 in Government General Hospital, Gulbarga. The placentae were evaluated grossly almost always without knowledge of the clinical details. The obstetric complications, pregnancy outcome and course of the babies who survived were well documented. Placentae were classed as normal, circummarginate or circumvallate. A placenta was only classed as circumval-

late if the ring at the margin of the chorionic plate was raised into a fold with definite elevated edge. If the chorionic margins was marked by a thin, fibrous, non-raised ring the placenta was considered to be circummarginate.

Results

Incidence

Nearly 1/5 of the placentae were of the extrachorial type. The incidence of each form is shown in Table I.

TABLE I

Incidence of Placenta Extrachorialis in 1375 Consecutive Deliveries

Type of placenta	Number	Percentage
Circumvallate	30	2.18
Circummarginate	233	16.94
Normal	1112	80.88
Total:	1375	100

This incidence is comparable to the previously reported figures as shown in Table II.

Complications of Pregnancy

The women with circumvallate and circummarginate placentae had a higher incidence of antepartum haemorrhage, postpartum haemorrhage, manual removal of placenta and threatened abortion than did women with normal placentae (Table III).

The incidence of prematurity with either circumvallate or circummarginate placentae was equal to that of the incidence of prematurity where placentae were normal. The differences were too small to be statistically significant. The incidence of foetal hypoxia, as measured by intrauterine distress and neonatal asphyxia was significantly more common

TABLE II

Recorded Incidence of Placenta Extrachorialis, Obstetric Complications, Pregnancy Outcome and Course of the Babies

Author	Year	Circumvallate placenta	Placenta extrachorialis	APH	Prematurity	Foetal loss	Still birth
Hobbs and Price	1940	0.72%	—	22.0%	37.3%	33%	—
Hunt, et al	1947	0.53%	—	55.3%	38.2%	24%	—
Pinkerton	1956	—	25%	8.0%	6.0%	—	—
Scott	1960	—	18%	7.0%	—	—	—
Ziel	1963	0.65%	—	61.5%	53.8%	—	7.6%
Wentworth	1968	—	32%	0%	5.2%	—	1.5%
Malkani	1970	—	19.4%	25.9%	16.6%	—	7.5%
Fox	1972	—	25%	—	—	—	—
Present Series	1973	—	19.2%	7.2%	29.6%	—	5.7%

TABLE III

Complications of Pregnancy in Cases of Placenta Extrachorialis

	Placenta circumvallate 30	Circummarginate 233	Normal 1112
Third trimester bleeding not due to placenta praevia	7 (23.34%)	8 (3.40%)	15 (1.30%)
Third trimester bleeding due to placenta previa	1 (3.33%)	3 (1.2 %)	8 (0.7 %)
Postpartum haemorrhage	2 (6.67%)	14 (6.3 %)	14 (1.2 %)
Pre-eclamptic toxaemia	1 (3.34%)	4 (1.7 %)	21 (1.77%)
Retained placenta	Nil	7 (3%)	6 (0.54%)
Premature labour	1 (3.34%)	2 (0.85%)	6 (0.54%)
Acute hydramnios	Nil	3 (1.2 %)	9 (0.8 %)
Essential hypertension	Nil	1 (0.4 %)	6 (0.54%)
Abortions	1 (3.33%)	12 (5.1 %)	15 (1.35%)

in infants with placenta extrachorialis than in those with normal placentae. The foetal mortality was higher in placentae extrachorialis group than the normal placentae group, but the difference was too small to be statistically significant (Table IV).

were retrospective, based in the main on a small number of specimens. Further, the variant incidences have been influenced by the definition of extrachorial placenta, whether complete only or partial and complete. The low incidence of this placental aberration recorded in various

TABLE IV

Effects on the foetus of placenta extrachorialis

	Circumvallete 30	Placenta circummarginate 233	Normal 1112
Prematurity	10 (33.3%)	68 (29.1%)	368 (33.1%)
Foetal hypoxia	3 (10%)	11 (4.7%)	20 (1.8%)
Intrauterine death	Nil	3 (1.2 %)	8 (0.71%)
Stillbirth	5 (16.67%)	7 (3%)	45 (4.04%)
Malformation	Nil	3 (1.2 %)	12 (1.08%)

Discussion

We do not intend to consider the pathogenesis of placenta extrachorialis. Twelve theories of etiology to explain the formation of this abnormal placenta are still discussed. Wide fluctuation in the incidence of extrachorial placenta is noted in recent reviews. It may be explained by the fact that the majority of the studies

hospitals may be due to failure on the part of the obstetrician to examine the placenta meticulously as a routine or due to a failure to record the findings accurately. All those workers who have been cognizant of circumvallate placenta and its complications, have stressed on personal observations rather than the hospital records and they have reported

a higher incidence of placenta extrachorialis (Pinkerton 1956; Scott 1960; and Wilson 1967).

The correlation between extrachorial placenta and antepartum haemorrhage has been assessed by Wentworth who, in his review, quotes Hobbs (1940) Hunt (1947), Paalman (1953) and Ziel (1963) to claim a higher incidence of antepartum haemorrhage with premature delivery in patients who have extrachorial placenta than in those with normal placenta. Scott (1960) found a very positive correlation between placenta extrachorialis and antepartum haemorrhage. Except this observation, he found that the extrachorial placenta has no clinical significance. In his series, late antepartum haemorrhage, sometimes difficult to differentiate from that associated with placenta praevia, occurred in 7 per cent of cases in contrast to 3 per cent in a normal control group. Our observations of maximal correlation between these morphological variations and antepartum haemorrhage are concordant with his findings. The incidence of antepartum haemorrhage was observed in all the trimesters of pregnancy. The bleeding was painless, intermittent and occasionally excessive to endanger the life of the foetus. Benson and Fujikura (1969) advocated that the reason for bleeding could be partial separation of the placenta. Intrapartum bleeding may well be due to incomplete separation of the placenta often necessitating manual removal. Hertig reports that about 30 per cent of non-toxaemic placental seperations are due to this anomoly.

Positively, a high incidence of third stage complications is observed in our patients who have circumvallate placenta. These complications are attributed to improper seperation of the placenta with retained placental fragments and/or membranes. A significant positive correlation has been observed between the extrachorial placenta and the incidence of postpartum haemorrhage and manual removal of placenta. These complications are not reported frequently. Our observations are similar to that of Wilson *et al* (1967).

All authors, except Pinkerton and Scott, who have reported on the subject of circumvallate placenta, have indicated that placenta extrachorialis is associated with a high incidence of prematurity and increased perinatal mortality. Unlike other workers we do not find any correlation between the placenta extrachorialis and high incidence of prematurity. The incidence of prematurity is similar in normal as well as extrachorial placentae in this series. This figure which is comparatively high in our cases probably shows that the women from lower socio-economic status have a tendency towards premature labour. Our observations totally disproved the belief that the circumvallate placenta is relatively inefficient. Most of our cases were from lower socio-economic group.

In this study the gross foetal loss of 5.7 per cent in extrachorial placentae as compared to the over-all foetal loss of 5% in 1375 deliveries is not significant. No form of extrachorial placenta seems to be associated with any excess of stillbirth or neonatal deaths. Placenta extrachorialis is accompanied by an increase in the incidence of foetal hypoxia and excess incidence of threatened abortion. The abortion rate of patients with circumvallate placenta is described higher than average by various authors. It is likely that some of the abortions are caused by extrachorial placenta.

At present we have no source to identify the extrachorial placentae prior to

delivery of the afterbirth. Suspicion may be aroused by slight to moderate painless bleeding during any trimester, usually as an intermittent sign. The possibility of this placental abnormality must be kept in mind when the differential diagnosis of antepartum haemorrhage is considered. Active treatment may not be necessary in most of the cases. Nevertheless, our observations indicate that this entity is serious some time and endanger the life of both the mother and the foetus, the physician should be watchful.

Conclusions

In addition to some well-documented obstetric paediatric complications, extrachorial placenta is a serious clinical problem associated with increased incidence of antepartum and postpartum haemorrhage.

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