CLINICAL SIGNIFICANCE OF PLACENTA EXTRACHORIALIS

by

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Placental pathology has been the subject of an increasing number of studies reported in recent literature. One type of pathology of this organ that has been neglected and often misunderstood is circumvallate placenta (Paalman and Veer 1953). Whitridge William made a statement in 1927 that circumvallate placenta is an interesting anomaly without any clinical significance which stood the test of time. However, Hobbs (1934, 1940) showed for the first time the clinical significance of this anomaly.

Placenta extrachorialis may be defined as a condition of the placenta in which the transition from membrane to villous chorion does not occur at the placental edge, the normal site, but at a variable distance within the circumference of the placenta. The chorionic plate from which the villi originate is smaller in area than the basal (or decidual) plate of the placenta. There is thus placental tissue present beyond the limits of the chorionic plate. At the margin of the chorionic plate there may only be a thin fibrinous ring where the foetal vessels appear to terminate (Placenta marginata) or there may be a fold towards the centre of the placenta (Placenta circumvallata). The fold may be present only in part of the circumference (Torpin, 1953; Pinkerton, 1956). Such a placenta is then both "marginate" and "circumvallate." It is, therefore, not possible to distinguish between these two types of placenta and it was because of this that Robert Meyer in 1912 grouped both anomalies under "Placenta extrachorialis." The chorionic membrane can be separated readily from that portion of the placenta which lies outside the ring (extra-chorialis placenta). At and within the fibrinous circle it is firmly attached and any further attempt at separation will result in tearing. The basal plate is usually normal in appearance regardless of the extent of deformity of the chorionic surface (Scott, 1960).

Haemorrhage, infection and third stage complications are the vital threats to the mother. The prime threats to the foetus are abortion and premature labour (Paalman and Vander Veer, 1953).

Observations

Of the 438 placentas examined,

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TABLE I
Recorded incidence of placenta extrachorialis

Author	Year of investigation	Circumvallate placenta	Marginate placenta	Total of circumvallate and marginate i.e., placenta extrachorialis
Williams	1927	2%	—	
Hobbs and Price	1940	0.72%	—	
Hunt, et al	1947	0.53%	—	
Paalman and Veer	1953	0.47%	—	
Porpin	1955a	4.0%	36%	40%
Tinkerton	1956	2.5%	22.5%	25%
Scott	1960	—	—	18%
Ziel	1963	0.65%	—	—
Wentworth	1968	6.5%	25.5%	32%
Present Scries	1969	—	—	19.4

placenta extrachorialis was found in 85 specimens. (Fig. 1).

The incidence as reported by various authors is shown in Table I.

Of the 85 patients with placenta extrachorialis, antepartum haemorrhage occurred in 25.9 per cent of the cases. Association of antepartum haemorrhage with placenta extrachorialis is shown in Table II and Fig. 2.

TABLE II
Association of antepartum haemorrhage with placenta extrachorialis

Author	Year of Investigation	Percentage of cases having Antepartum haemorrhage
Hobbs and Price	1940	22.0
Hunt, et al	1947	55.3
Paalman and Veer	1953	51.2
Morgan	1955	14.0
Pinkerton	1956	8.0
Scott	1960	7.0
Ziel	1963	61.5
Wentworth	1968	0
Present series	1969	25.9

Relationship of placenta extrachorialis to prematurity is shown in Table III.

TABLE III
Reported incidence of prematurity in association with placenta extrachorialis

Author	Year of Investigation	Percentage
Hobbs and Price	1940	37.3
Hunt et al	1947	38.2
Paalman and Veer	1953	63.3
Pinkerton	1956	6.0
Ziel	1963	53.8
Wentworth	1968	5.2
Present series	1969	16.6

Relationship of placenta extrachorialis to foetal mortality is shown in Table IV.

TABLE IV
Relationship of placenta extrachorialis to foetal mortality

Author	Year of investigation	Foetal loss	Stillbirth
Hobbs and Rollins	1934	43%	—
Hobbs and Price	1940	33%	—
Hunt et al	1947	24%	—
Paalman and Veer	1953	—	19.5%
Ziel	1963	—	7.6%
Wentworth	1968	—	1.5%
Present series	1969	—	7.5%

Clinical effects of placenta extrachorialis is shown in Table V.

TABLE V
Analysis of clinical effects of placenta extrachorialis

	Normal placenta i.e. No evidence of placenta extrachorialis (353)	Placenta extrachorialis (85)
Prematurity	10.5%	16.6%
Foetal distress	14.7%	20.0%
Apgar scoring less than 5	12.0%	17.4%
Stillbirths	2.8%	7.5%
A.P.H.	5.6%	25.9%
P.P.H.	1.1%	—
Manual removal of the placenta	0.28%	—
Toxaemia	1.9%	4.7%
Previous abortions	3.9%	3.5%
Leaking of membranes	5.8%	4.5%

Comments

The relatively low incidence of placenta extrachorialis as recorded in hospital statistics is explained by failure to examine the placenta meticulously as a routine or failure to record the findings accurately. Pinkerton (1956) and Scott (1960) who relied on personal observations rather than hospital records reported a higher incidence of placenta extrachorialis.

In the present series the incidence of placenta extrachorialis was 19.4 per cent. Complete and partial rings were included. This series included 3 sets of twins. The placenta extrachorialis was observed in all the twin placentae. Antepartum haemorrhage occurred in 25.9 per cent of the cases. Premature deliveries occurred in 16.6 per cent, with resultant higher foetal loss. Stillbirths were encountered in 7.5 per cent of the cases with placenta extrachorialis. The incidence of toxaemia was increased in cases with placenta extrachorialis. Foetal distress and low Apgar scoring (0-5) was observed in 20 per cent and 17.4 per cent respectively in cases with placenta extrachorialis. There was no correlation between placenta extrachorialis and postpartum haemorrhage. Placenta extrachorialis is a significant cause of antepartum haemorrhage, premature labour, complications of the third stage of labour and perinatal foetal loss. But the diagnosis of placenta extrachorialis cannot be established with certainty until the placenta is available for examination. This placental abnormality must be considered in the differential diagnosis of antepartum haemorrhage along with other accepted causes.

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See Figs. on Art Paper III