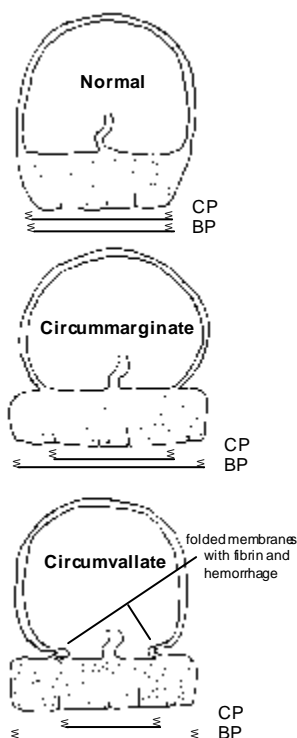


## Placental Indications: Placenta Extrachorialis

by Doris Schuler-Maloney, M.S.

CP = Chorionic plate  
BP = Basal plate



**Figure 1. Placenta Extrachorialis**

extraplacental membranes appears normal, just at a distance inward from the outer circumference of the placental disk. There is no folding or rolling of the chorion, and there is minimal fibrin and no recent or old hemorrhage.

On a circumvallate placenta (vallate = surrounded by a wall or elevation, cupped), the transition zone from fetal surface to extraplacental membranes appears as a raised ring, due to the folding or rolling of the chorion, in association with a variable amount of fibrin and recent and/or old hemorrhage. The amnion may be incorporated into the folding, or most commonly, it lays flatly over the folded chorion without being infolded. Microscopically, this folded area contains amnion, chorion, fibrin, hemorrhage, decidua and senescent villi.

About 25% of placentas show partial or complete extrachorialis. Circummarginate and circumvallate insertion may be present in the same placenta. The width of the parenchyma which extends beyond the chorionic plate may vary from 1 cm to greater than 10 cm. In addition, these placentas are usually thick.

The etiology of placenta extrachorialis and the true relationship between circummarginate and circumvallate placentation is unknown. Researchers have suggested: abnormal implantation (too shallow or too deep), uncoordinated placental and uterine growth, marginal separation of the placenta with hemorrhage, oligohydramnios, cigarette smoking, pre-eclampsia and eclampsia. Some of these conditions may cause decreased uteroplacental blood flow, particularly to the placental margin, with subsequent decidual necrosis and abnormal placental growth. Reduced amniotic fluid pressure in cases of oligohydramnios may result in decreased distention of the gestational sac, causing the chorion to fold in.

The circummarginate placenta has no clinical significance. In fact, the circummarginate configuration is considered to be some to be a broad/prominent subchorial closing ring.

Circumvallate placentas are rarely found during the first trimester. Although some authors consider circumvallation to be a clinically meaningless variation of normal, others have observed that in late gestation complete circumvallate placentation is associated with increased incidence of threatened abortion, antepartum hemorrhage, premature labor, abruptio placentae, and early prolonged oligohydramnios. Mothers are at risk for higher morbidity due to increased likelihood of postpartum hemorrhage and need for manual removal of the placenta. The fetus is at slight risk for growth retardation.

The outermost zone of the placental fetal surface, the ill-defined avascular zone at the margin of the placenta, is called the *marginal zone*. It is the transition zone of the chorionic plate, basal plate and extraplacental membranes, with characteristics of each region. The inner margin of the marginal zone is defined as "the circumferential line connecting the points where the most peripheral branches of the chorionic plate vessels make their vertical turn into the most peripheral villous trees" (Schuler-Maloney et al, page 72.) The outer margin is the grossly identifiable transition from placenta to extraplacental membranes.

In more than 90% of placentas, the marginal zone is represented by a slightly prominent opaque ring, up to 1 cm wide, the *subchorial closing ring*. In one study, 71% of placentas had a complete, grossly identifiable subchorial closing ring; it was incomplete in 21% and absent in the other 8% of placentas.

The chorionic surface typically covers the entire placental disk. The extraplacental membranes arise from the most peripheral aspect of the chorionic surface, at the outer aspect of the marginal zone/subchorial closing ring, hence over the periphery of the placental disk.

In *placenta extrachorialis* (see Figure 1), the chorionic plate is smaller than the placental disk. The extraplacental membranes still arise at the far periphery of the chorionic plate, consequently at some distance inward from the outer circumference of the placental disk, leaving a rim of "naked" placental tissue projecting beyond the limits of the chorionic plate. Hence, there is *extra* placental tissue beyond the *chorionic* plate, *placenta extrachorialis*.

There are two types of placenta extrachorialis: circummarginate and circumvallate.

A circummarginate placenta shows a "normal" flat transition from the amnion and chorion of the chorionic plate to the amnion and chorion of the extraplacental membranes. The "insertion" of the

### References

1. Benirschke K, Kaufmann P: Pathology of the Human Placenta, 3rd edition; 1995, Springer-Verlag.
2. Joshi VV: Handbook of Placental Pathology; 1994, Igaku-Shoin.
3. Schuler-Maloney D, Lee S: The Placenta: To Know Me Is To Love Me. A reference guide for gross placental examination; 1998, DSM PathWorks, Inc., St. Mary's, IA;