Bipartite monochorionic diamniotic placenta without intertwin vascular anastomoses

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Abstract

A bipartite placenta develops in 3% of monochorionic diamniotic twin pregnancies. It initially resembles a dichorionic placenta on ultrasonography, but has one chorionic and two amniotic membranes. Virtually all monochorionic diamniotic twin placentae have intertwin vascular anastomoses. Older case reports have recorded cases of bipartite placenta in monochorionic diamniotic twins, with vascular anastomoses between the two fetuses—a finding considered to be a reliable marker of a monochorionic placenta. We report two cases of monochorionic diamniotic twin pregnancies, presenting with separate placental masses, and without any intertwin vascular anastomoses. Histological examination revealed a monochorionic and diamniotic intertwin membrane, but a dye injection study in each case demonstrated a complete absence of vascular anastomoses between the two parts of the placenta.

Keywords

bipartite placenta, chorionicity, monochorionic diamniotic, no anastomoses, twin pregnancy

1. Introduction

The placental chorionicity influences the management of twin pregnancies as monochorionic twins are at a greater risk of adverse perinatal outcomes. The chorionicity and amnionicity are determined by counting the number of chorionic and amniotic membranes before and after delivery. Previously, the number of placentae observed on prenatal ultrasound indicated the chorionicity, i.e., dichorionic twins were believed to have two placentae, while monochorionic twins shared one. However, newer studies have revealed a few cases of monochorionic diamniotic twins with two placentae.1-4

Bipartite placentae may develop in 3% of monochorionic diamniotic twin pregnancies.3 They initially appear dichorionic on ultrasound, but possess one chorionic and two amniotic membranes. Some studies have indicated that bipartite placentae of monochorionic diamniotic twins have some degree of vascular anastomoses between the two fetuses, a feature further distinguishing them from dichorionic placentae.1,2

We report two cases of monochorionic diamniotic twin pregnancies, each with two placental masses, and no vascular anastomoses between them. We identified the placental configuration in both cases correctly and managed them appropriately. Following delivery, the separated placental masses were found to be morphologically identical to those of dichorionic placentae. It was on histological examination that the intertwin membrane in each case was confirmed to be monochorionic instead.

2. Case 1

A 35-year-old Japanese woman, gravida 1, para 0, conceived twins following controlled ovarian stimulation. We ascertained the placental type as monochorionic diamniotic by counting the number of chorionic and amniotic membranes with transvaginal ultrasonography (USG) at 10 weeks of gestation (Fig. 1). USG did not show a A-sign. Instead, a thin dividing membrane was observed. The course of pregnancy was uneventful until the mother’s renal function declined at 35 weeks of gestation. Two healthy girls were delivered by cesarean section. Twin A weighed 1,992 g, and twin B weighed 2,108 g. Their Apgar scores were 8/9 and 8/9 at 1/5 minutes, respectively. Both infants had the same blood type.

We found two morphologically distinct placental masses linked together by a membrane. The placental masses could be easily separated, thus resembling a dichorionic diamniotic placenta. Macroscopic examination of the dividing membrane showed presence of two amniotic membranes with no chorionic membrane in-between (Fig. 2). The umbilical cord inserted marginally for twin A and centrally for twin B. We used dye injection to ascertain

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