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Clinical Image

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Twin anemia polycythemia sequence (TAPS)

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Abbreviations: AS: Apgar Score; Hb: Hemoglobin; TAPS: Twin Anemia Polycythemia Sequence; TTTS: Twin To Twin Transfusion Syndrome.

Clinical image description

A 33-year-old monochorionic twin gravida was subjected to a cesarean section at 31 weeks' gestation due to preeclampsia. The pregnancy was otherwise uneventful.

Figure 1: Anemic twin.

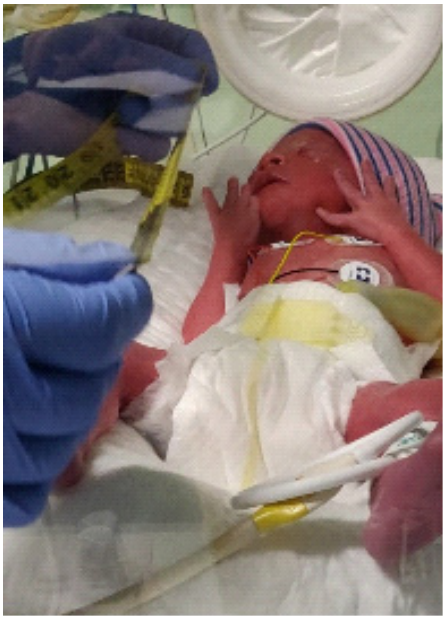

Figure 2: Polycythemic twin

The first-born infant (Figure 1) was pale, weighed 1095 g and had an AS of 8/9/9; the second-born twin (Figure 2) was plethoric, weighed 1465 g and had an AS of 9/10. Hb values for twin 1 and twin 2 were 5.8 g/dL and 24.9 g/dL and a reticulocyte count of 11.25% and 6.09%, respectively. The anemic infant was hypovolemic requiring two blood transfusions on day 1. A partial volume exchange transfusion was required for the polycythemic twin, since hematocrit increased to 73.7% on day 1 despite IV hydration.

A significant skin coloration difference between twins at birth should raise suspicion for TAPS, a recently described form of chronic feto fetal transfusion that can occur spontaneously in 3 to 5% of monochorionic twin pregnancies [1] or after laser ablation of placental anastomoses in TTTS [2]. It results of small AV anastomoses that allow slow unidirectional flow of blood from a donor to a recipient twin causing anemia in the donor and polycythemia in the recipient with normal fluid volumes in both gestational sacs [3].

Prenatal diagnosis is based on measurement of the middle cerebral artery peak systolic velocity (that is usually increased in the anemic twin and decreased in the polycythemic twin), but is frequently missed. Large intertwin differences in Hb values (>8 g/dl), reticulocyte count ratio >1.7 or small vascular placental anastomoses without oligopolyhydramnios are essential for postnatal diagnosis [3]. Clinical presentation at birth is largely variable from a simple hb differential to severe brain injury and even death. On a long-term, TAPS seems to be associated with severe neurodevelopmental impairment and deafness, especially for the donor twin [1].

Declarations

Author contribution statement: All authors participated in the treatment of this case, and the first author drafted the manuscript. All authors read and approved the final manuscript.

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