Massive hydrocephaly and intraventricular hemorrhage in monochorionic diamniotic twin pregnancy with twin-to-twin transfusion syndrome

Dear Editor,

I would like to present a case entitled "Massive hydrocephalus and intraventricular hemorrhage (IVH) in monochorionic diamniotic (MCDA) twin pregnancy with twin-twin transfusion syndrome (TTTS) plus twin anemia-polycythemia sequence (TAPS)."

A 26-year-old woman, gravida 4, para 2, abortion 1, spontaneous MCDA twin pregnancy was referred to our hospital for poly-oli syndrome at 26 weeks of gestation. On admission, the uterus was over-distended, and the amniotic fluid deepest vertical pocket of the recipient twin was 80 mm with the weight discordance of 17% TTTS (Stage 1). Isolated mild ventriculomegaly (lateral ventricle diameter of 10 mm) in recipient twin was found as an incidental finding at 28 weeks of gestation. Due to uterine over distension and maternal discomfort, we performed five episodes of amnioreduction with approximately 7–10 days interval between 28 and 31 weeks and every 3–4 days after 32 weeks gestation. Serial sonographic studies showed progressive ventriculomegaly (lateral ventricle 30 mm) [Figure 1], and third ventricle dilation, and Doppler study impairment as brain sparing effect, with umbilical PI above the 95th percentile and MCA PI below the 5th percentile in recipient twin at 32 + 4 weeks of gestation. MCA- PSV in donor twin was 63 cm/s (>1.5 MOM) that was compatible with anemia and in recipient twin was 43 cm/s (<1 MOM) that was compatible with polycythemia which was diagnosed with TAPS as a form of TTTS, with the weight discordance of 35% (TTTS + TAPS). The patient was hospitalized and 6 days later, a unilateral irregular hypoechoic area in the lateral ventricle measured about 7 mm × 11 mm, most likely IVH, was identified. Cesarean section was performed at 33 + 3 weeks following the two courses of corticosteroids for lung maturity. Bilateral IVH as well as severe ventriculomegaly and third ventricle dilation was confirmed by postnatal US in recipient sibling. The donor neonate anemia was corrected by the transfusion of two units of packed RBC following the delivery and discharged from neonatal intensive care unit 2 weeks later with good condition. The recipient neonate also discharged 3 weeks later after obtaining acceptable sucking; without any intervention. On 10 months follow-up, no complications occurred for the mother. In contrast to the recipient neonate who had failure to thrive and delayed neurodevelopment, the donor sibling had optimal growth and appropriate physical/neurodevelopmental function. The 3-month brain imaging of the donor sibling (computed tomography scan) showed total atrophy of brain tissue (white matter and cortex), 10 months later, the baby became completely bed ridden.

In the current case, IVH and brain damage probably occurred following the severe hydrocephalus caused by blood pressure instability and several episodes of hypotension; furthermore, anastomotic transfusion from the high-pressure vessels of stuck twin to the low resistance vessels of recipient twin resulted in hypovolemia and ischemic/hemorrhagic brain damage in recipient twin antenatally. Hemoglobin discordance and polycythemia in recipient twin may cause IVH before Doppler study impairment in this case that is unusual in TTTS/TAPS cases.

Sincerely

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

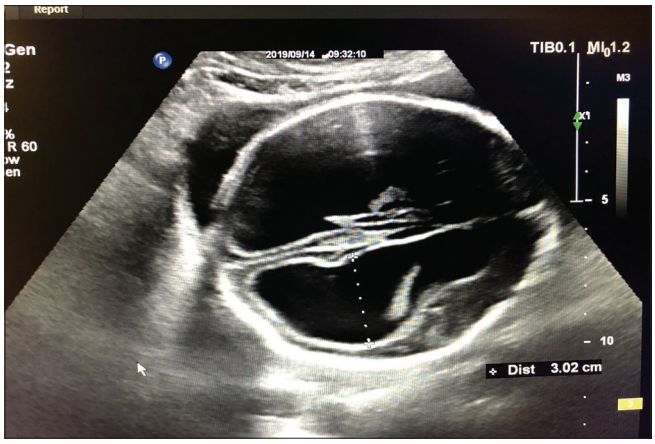

Figure 1: Bilateral severe ventriculomegaly (lateral ventricle diameter 30 mm)

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