Ultrasound Assessment Of Twin anemia polycythemia Sequence (TAPS)

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Introduction
Twin anemia polycythemia sequence (TAPS) is caused by small placental vascular anastomoses leading to chronic anemia in the donor and polycythemia in the recipient. TAPS can result in severe fetal or neonatal hematologic complications, cerebral injury and perinatal death.

Objective
The aim of this study is to ascertain the most relevant ultrasonographic signs that help to make an early diagnosis so we can improve the outcome of this severe complication.

Patients and methods:
It’s about two observations of patients treated in the department of gynecology and obstetrics of the Mongi Slim hospital Tunis in 2013.

Observation 1
A 42 years old patient with a history of miscarriage and a full-term pregnancy with a vaginal delivery at term. Blood group O negative, she received anti-D Immunoglobulin injection after each pregnancy. The patient was referred to us at 31 GW after the discovery of the death of one twin and hydrops of the other twin without morphological abnormality detected (fig 1). It was a spontaneous monochorionic twin pregnancy according to data from the first trimester ultrasound. On admission (after 12 hours of the discovery of fetal death of one twin) the doppler ultrasound of the living twin was normal with a positive ductus venosus and middle cerebral speed (MCS) 67 cm / s (fig 2). Fetal heart rate (FHR) was also without fault.

We discussed the allomunisation but the patient received anti-D and there was no sign of anemia in the living twin. TAPS was the most likely diagnosis. We decided to transfuse the living twin, but it has not been possible to obtain the O negative blood leucocyte-depleted irradiated 48 hours before the death of the first twin. At 80 h, the RCF has become nonreactive and MCS was 110 cm / s (2.59 MoM) (Fig. 3), we failed to make a cordotransfusion so we decided the intraperitoneal transfusion. After a few hours, the RCF showed signs of severe anemia, we decided to extract the fetus, he had severe anemia at 3.6 g / dl and a Coombs negative, he died 3 hours later.

Observation 2
24 years old woman, pregnancy complicated by gestational diabetes, it was probably a spontaneous monochorionic twin pregnancy. Indeed, the first trimester ultrasound was not done and the ultrasound on admission showed a single placental. The patient was referred to our department at 29 GW for exploration of hydramnios. The ultrasound showed initially: for the first twin, the absence of a bladder, absence of amniotic fluid, the estimated fetal weight was 950g and MCS was impossible to measure. For the second, an hydramnios, a full bladder, fetal weight estimated at 1300g and MCS was 53 cm / s.

The diagnosis was twin anemia polycythemia sequence. We decided to make an amniocentesis and daily ultrasound monitoring. At H +24, the ultrasound showed the death of twin, hypotrophe and increasing hydramnios of the other twin with a stable CMS 62.3 cm / s, the amniocentesis brought 500cc amniotic fluid.

At H +72 of the death of the first twin, we found an increase in MCS 110cm / s showing an acute anemia of the remaining twin. We transfused the latter by 50 cc of blood group O negative irradiated leukodepleted associated with amniocentesis of 250cc amniotic fluid.

The results were satisfactory: we corrected the anemia with MCS 55 cm / s (Fig. 5).

Conclusion
TAPS is an emergency case of diagnosis and therapy. We must be aware of the minor signs that can lead us to make the diagnosis so we can improve fetal outcome.