SIEOG

INFORMATION ABOUT THE TWIN PREGNANCY SCAN

Dear patient,
Yours is a twin pregnancy, that is a pregnancy with the simultaneous development of two fetuses in utero. This occurs with a frequency of 1 case out of 80 pregnancies, but more frequently following assisted reproduction techniques or after 35 years of age.

In your case, the twin pregnancy is:

☐ dichorionic/diamniotic
☐ monochorionic/diamniotic
☐ monochorionic/monoamniotic
☐ uncertain chorionicity/amnionicity
☐ multiple pregnancy with three or more twins

In this information leaflet you can find some information on twin pregnancies.

Are all twin pregnancies the same?
No, two types of twin pregnancies can be described:

- dizygotic, with non-identical twins, like two brothers born in different years. They may have the same or different sex, but each having its own sac and placenta;
- monozygotic, with identical twins of the same sex.

How many placentas and sacs are there in monozygotic pregnancies?
It depends on when the separation of the fertilized egg took place:

- if the egg has separated early, two placentas and two amniotic sacs form, resulting in a **diamniotic dichorionic pregnancy**;
- if the separation has occurred later, each embryo is in its own amniotic sac, but sharing the same placenta, resulting in a **monochorionic diamniotic pregnancy**;
- if the separation has occurred after the 8th day, the babies share both the amniotic sac and placenta, resulting in a **monochorionic monoamniotic pregnancy** (very rare).

In case of uncertain chorionicity/amnionicity it is difficult to assess the type of twin pregnancy and therefore the patient should be referred for a referral center evaluation with expertise in such pregnancies diagnosis and management.

What are the risks related to a twin pregnancy?
Regardless of the type of twin pregnancy, there is a higher risk to develop hypertension and gestational diabetes than in singleton pregnancies. Moreover, common pregnancy disorders are more pronounced (nausea, heartburn, back pain, etc.), and delivery often occurs before term (50% of cases).

Dichorionic/diamniotic twin pregnancy

In this pregnancy each twin has its own placenta and amniotic sac, and in most of the cases they are two individuals with distinct genetic makeup. Screening tests for chromosomal abnormalities performed in the first trimester are similar to those performed in singleton pregnancies. If the outcome of the first trimester screening indicates an increased risk of aneuploidy for one or both twins, it is advisable to perform the evaluation in a center with expertise in the management of twin pregnancies. After performing the second trimester screening ultrasound at 19-21 weeks, a follow-up scan is indicated at 24 weeks and then every 4-6 weeks. If a structural anomaly in one or both twins is diagnosed or if a growth discrepancy equal to or greater than 25% between the two twins is found, it is recommended to send the patient to a referral center.

Monochorionic/diamniotic twin pregnancy

In such pregnancies, the twins share the same placenta, whereas each twin has his own amniotic sac. This implies a continuous blood exchange between the twins at the level of placental vessels connections, the so-called anastomoses. In 10% of cases, a complication called "twin-to-twin transfusion syndrome" (TTTS) can develop: this is a condition in which a circulatory imbalance occurs between twins, with one "donor" twin giving his blood to the other, defined as "recipient". This represents a serious complication, which may require *in-utero* surgery, potentially leading to the loss of one or both twins if left untreated.

One of the most frequent maternal symptoms related to the onset of TTTS is the sudden increase in the abdominal volume. If such complication appears, the patient should be referred to a center dedicated to the management and treatment of such conditions.

The onset of TTTS can be acute or slowly evolving and, due to its unpredictability serial ultrasound scans are recommended, starting from 16 weeks, every two weeks until delivery. With this type of monitoring, slowly evolving TTTS cases might be identified and treated, whereas acute forms sometimes could not be promptly identified and treated.

In 99% of cases, monochorionic twins have an identical genetic heritage; screening tests for major chromosomal abnormalities are similar to those used for singleton pregnancies but in case of increased risk, referral to a center dedicated to the management of twin pregnancies is indicated.

In 15% of cases the twins have an unequal distribution of the shared placenta, with the potential to develop growth discrepancy > 25%: in such cases, the patient should be sent to a referral center for an appropriate management, potentially varying according to the weeks of gestation and the fetal conditions.

Moreover, monochorionic twins are more likely to have cardiac anomalies than singletons. Therefore, for such twins a fetal echocardiography is recommended.

There are also rarer complications (less than 5% of cases), more difficult to diagnose, and when detected the referral to a dedicated center is recommended. Such conditions are the “twin anemia polycythemia sequence” (TAPS) and the “twin reversed arterial perfusion” (TRAP), both potentially leading to pregnancy loss but, if promptly detected *in utero* surgery treatment could be performed, with favorable outcomes in most cases.

Monochorionic/monoamniotic twin pregnancy

In this pregnancy, the twins share both the placenta and the amniotic sac. It is a very rare condition and such patients should be referred to a dedicated center for diagnosis confirmation and further management. Higher risk of structural abnormalities has been described for this type of twins, and the fetal anatomy ultrasound evaluation should be therefore performed in a referral center.
Later in pregnancy, follow up modalities and frequency should be intensified and defined with the center involved in the pregnancy care and management.

Multiple pregnancy with three or more twins
Multiple pregnancies with three or more twins have a higher probability of maternal and fetal complications, according to the number of fetuses, chorionicity and amnionicity.
Prematurity and low birth weight are the complications mostly impacting on the newborn's survival chances and health. The higher is the number of twins, the higher is the risk of preterm birth.

Therefore, due to its complexity, multiple pregnancies should be managed by centers and operators with specific competence and expertise.
Moreover, regardless of the type of twin pregnancy, in case of demise of a twin, referral to a dedicated center (for further assessment and management) is recommended.

Diagnosis:
Twin pregnancy (type) _____ at _____ weeks of gestation,

complicated no ☐ yes ☐

Complication _____

INFORMED CONSENT TO TWIN PREGNANCY SCAN

I hereby (name, surname) _____ declare that:

- I have been correctly informed about the twin pregnancy scan and understood the contents of this information.
- I had the opportunity of clarifying my doubts with a doctor and all my questions were satisfactorily answered.
- I am aware that this examination is suggested but not mandatory and I would like to undergo the examination aware that the twin pregnancy scan might identify fetal conditions requiring further diagnostic examinations or multi-disciplinary counseling.

Date ***Patient's signature***