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Abstract:

This is the first report from Jamahiria Maternity Hospital of Benghazi, Libya concerning two babies who were born in 1995, they survived the death of their co-twins, but developed neurological problems later on.

A considerable percentage of twin pregnancies end in loss of one of the fetuses and medical problems in the surviving co-twin; therefore it is appropriate to call this phenomenon as vanishing-surviving syndrome as the death "vanishing" of one fetus leads to impairment of growth and development of the surviving co-twin.

Introduction:

Very often, if not always, twin pregnancy results in loss of one fetus, the so-called "Vanishing twin syndrome" which is observed mostly in the first trimester. Even the co-twin who managed to survive can have problems which will lead to peri-natal mortality or post-natal morbidity. The usual deceleration in growth occurring at about 36 weeks is noticed much earlier in twins than singleton, while the average weight of a monozygotic twin would be slightly less than the dizygotic twin (800g) and the discrepancies in birth weight amongst monozygotic pairs are much commoner which is probably due to (feto-fetal transfusion syndrome) and differing sites of implantation of the placenta. It is widely known that congenital anomalies are more common in monozygotic twins than in singleton or dizygotic pairs which may be probably due to competitive sharing of placental circulation.

We are reporting two babies who survived the death of their co-twin but had problems later on. The first of its kind to be reported from Benghazi, Libya, in Jamahiria Maternity Hospital.

Case Reports:

Case I:

A 31 years old Libyan lady who has four healthy children, gave birth to monozygotic female twins at term after normal pregnancy and delivery. The first twin was in a good condition at birth, her birth weight was 2.1 Kg, length 64 cm, HC 31 cm. The second twin (co-twin) was born macerated. Its birth weight was 350 g and its length was 20 cm.

The first twin was reviewed after one month. She was well and gaining weight and her development appeared to be normal.

The baby was reviewed again at the age of 6 months. She was found to have small head, her HC was on the third centile. She was stiff on handling; the tone and reflexes were increased in her lower limbs. CAT scan of the head showed brain atrophy. As of today at the age of 2 years she has microcephaly and diplegic cerebral palsy.

Case II:

The monozygotic female twins - first alive and the second macerated were born at a 35 weeks to a 35 years old healthy mother.

The first twin, birth weight of 1.6 kg, was admitted to special care neonatal unit soon after birth because of mild RDS. After being discharged, she was followed up regularly at the baby's clinic. At the age of 6 months she started to show signs of cerebral palsy and poor growth of her head. CAT scan of the head showed porencephalic cyst. As of today, at the age of 2 years she is blind, microcephalic and quadriplegic.

Discussion:

It is now generally agreed that congenital anomalies are more common in twins than in singleton; however, this higher incidence is probably limited to monozygotic twins. The sharing of placental circulation and disruption of the genetic clock of the embryos caused by the zygotic division increases the risk of congenital anomalies in monozygotic twins. While stillbirth in twins is almost twice that in singleton, very often, most of the twins survive the intra-uterine death of their co-twin.
However, in monochorionic twining, the survivor may have problems due to disseminated intravascular coagulation (DIC); that is, if one fetus dies early in pregnancy, emboli from the dead fetus may disrupt the development of the survivor and congenital anomalies such as microcephaly, aplasia or intestinal atresia may be result from such ischemic insult.

In many instances, however, monochorionic twins harmoniously share a “third circulation” without an aberrant ill-effect for some as in the feto-fetal transfusion syndrome when no superficial anastomosis are present in the placenta to compensate for the deep arteria-venous flow. A chronic hemodynamic imbalance may develop and continue for many months, causing not only unequal growth of the fetuses but also anemia and polycythemia, which might cause death of one or both fetuses.

Benirschke(1) first implicated death of an monozygotic co-twin “stillborn” or “fetus papyraceus” as a potential cause for problems in the surviving twin as a consequence of thromboplastin gaining access to the survivor’s circulation and causing DIC. The other suggested possibility is that emboli from the deceased co-twin enter the circulation of the survivor twin causing congenital anomalies such as microcephaly, porencephaly, intestinal atresia, and limb amputation.

It was concluded by Melnick(2) from a collaborative perinatal project, that about 3% of near term monozygotic twins have a deceased co-twin, and that about one-third of the survivors or one percent of the monozygotic twin births have severe brain defects as a consequence of the foregoing mechanisms.

The surviving infants with porencephalic cysts and / or hydranencephaly are usually severely mentally deficient with microcephaly, spastic diplegia and seizures.

Moore(3) reported cortical and cerebral necrosis in surviving infant while co-twin is macerated. The history of macerated stillborn twin should alert the physician to the possibility of intra vascular coagulation in the living twin.

Treatment of this highly lethal problem includes maternal heparin, selective twin termination, or laser ablation of the anastomosis. The mother who had the happiness of having twins will have to face the mourning of a dead fetus and the tragedy of seeing a child with birth defect which results in a mixed feeling of joy and sorrow leaving an indelible painful memory in the family.

References:


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