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Twin Pregnancy Complicated by Intrauterine Demise of One Fetus

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Abstract. Two cases of antepartum demise of one fetus in a twin pregnancy are reported. Obstetrical management and fetal outcome are discussed with particular respect to changes in maternal coagulation parameters.

Key words: Twin pregnancy, Intrauterine death

INTRODUCTION

Fetal death in one of the twins is a rare event, which presents a complex set of management issues. The risk of morbidity and mortality for the living twin is increased, after the death of its sibling, especially in case of monochorial placentation [4-5]. There is also some evidence that maternal morbidity may be increased as well [4]. The rate of multifetal pregnancy with intrauterine and antepartum demise of one fetus, datable in the 2nd and 3rd trimester, has been estimated by the Prospective Collaborative Perinatal Project of the United States (1977) to be 0.37% of twin pregnancies [5]. Such an incidence has been increased because of the growing number of multiple gestations induced by assisted conceptions methods. We report about two twin pregnancies, both with intrauterine demise of one fetus, longitudinally observed during gestation and in the postnatal period.

CASE HISTORY

Case 1

A 26-year-old woman, primigravida, who had had early diagnosis of monoamniotic-monochorionic twin pregnancy, was referred at 24 weeks gestation because of intrauterine demise of one fetus. A sonographic examination confirmed the report and showed

a normally growing fetus and a dead one with femur bone length corresponding to 20 weeks (Figs. 1-2). Maternal coagulation parameters were in the normal range; lupus anticoagulant and anti-Cardiolipin antibodies were present. A close surveillance of the pregnancy was started with bimonthly ultrasound examination and weekly full assessment of coagulation parameters; from 28 week gestation, moreover, biophysical fetal profile score was biweekly recorded. An increase in fibrinogen levels with positive products of degradation (FDP) was detected at 35 weeks and treated with low-dose heparin (5000 IU b.d.s. subcutaneously). Two weeks later, as a consequence of a sudden increase of FDP levels and in view of an unripe cervix, delivery was accomplished by cesarean section (Fig. 3). The newborn (birthweight of 2950 g) had a physiological post-natal course, showing normal coagulation parameters and no neurological abnormality. Histological examination of the placenta showed no abnormality except for the finding of a fetus papyraceous.

Case 2

A 36-year-old patient, primigravida after IVF, was referred to our observation at 36 weeks gestation because of intrauterine demise of one fetus. Sonographic examination showed a well-grown alive fetus and a dead one with growth corresponding to 32 weeks (femur length = 59 mm). Two separate placentas and a thick septum were detectable. Coagulation parameters were in the normal range. Delivery was accomplished one week later by cesarean section. The alive neonate (birthweight of 3300 g) did well with normal laboratory tests and neurological examination. The dead twin (birthweight of 2800 g) revealed the degenerative features of a recent death and no malformations. Pathological findings displayed two separate placentas without detectable vascular communications.

DISCUSSION

Second- and third-trimester death of one fetus in a twin gestation heralds significant problems for clinical management. Morbidity for the mother, related to coagulopathy, and for the surviving cotwin, related to vascular disruptions due to thromboplastin-rich blood from the deceased sibling, are important risk factors. The likelihood of development of pathological consumption of coagulation factors increases after a lapse of time (5 weeks on average) [6]: it can be predicted by current laboratory tests and successfully treated. Vascular damage in the surviving twin, on the other hand, is not detectable in utero, unless gross anatomical damage is present. It is therefore extremely important to obtain accurate information pertaining time of fetal demise, zygosity, and related risk of placental anastomoses.

In our experience, early demise of one fetus in a monochorionic monoamniotic pregnancy has triggered coagulation factors consumption after 9 weeks from diagnosis, with contemporary sonographic finding of fetus papyraceous, which should not be biologically active. In our second case, aggressive obstetrical management has prevented maternal complications, whereas the detection of a dichorionic pregnancy has been a reassuring parameter for what concerns postnatal outcome of the surviving sibling.

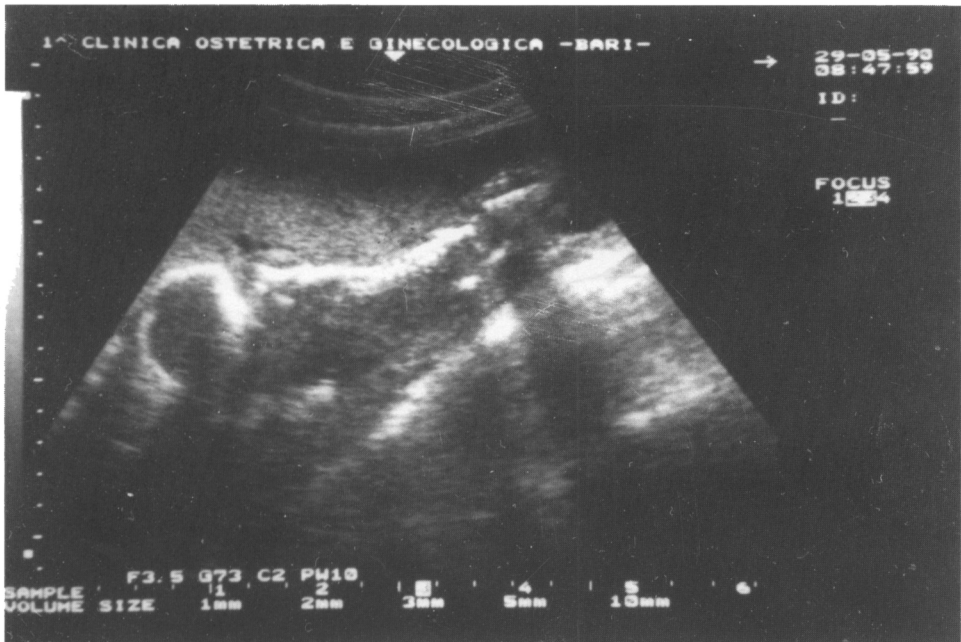


Fig. 1. Sonographic sagittal view of the dead fetus, showing cranial vault and spine.

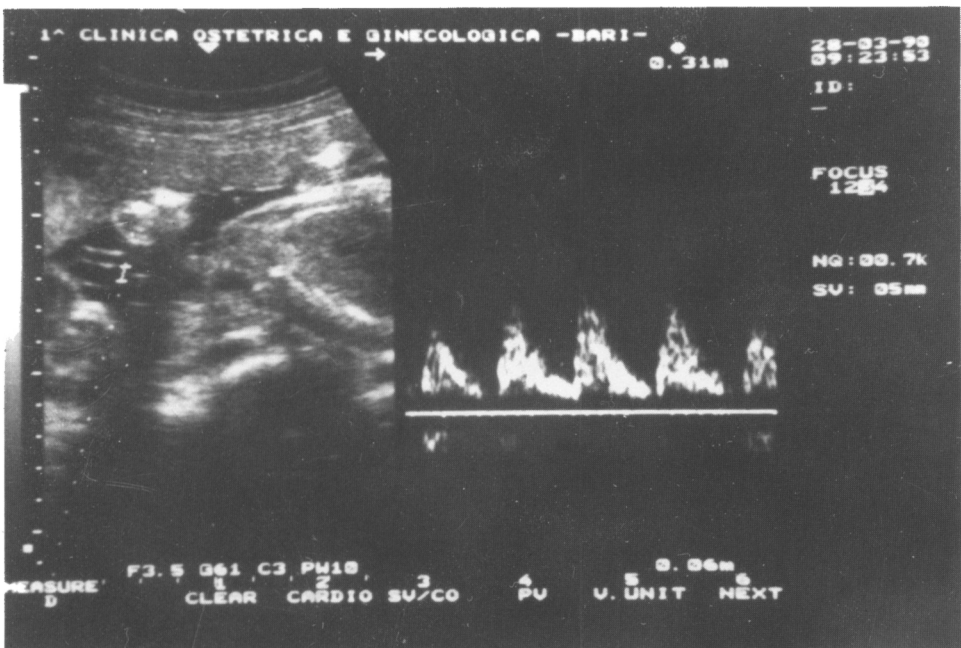


Fig. 2. Doppler blood flow recording of the umbilical artery of the surviving twin at 24 weeks gestation.

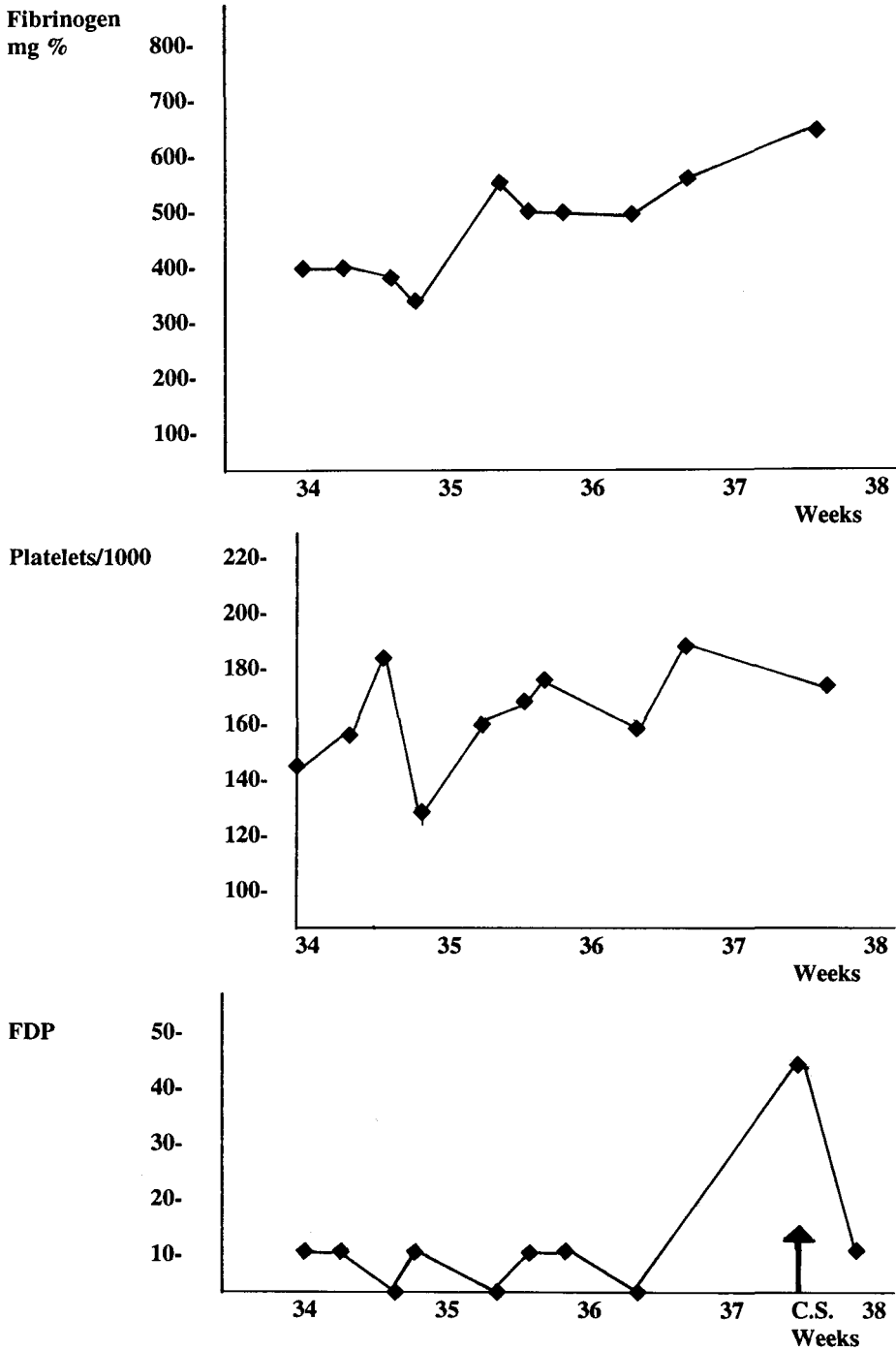


Fig. 3. Case 1: Maternal coagulation parameters.

As reported by the literature [7], heparin administration to the mother does not protect the fetus from the onset of coagulopathy. It is also remarkable to note that, in our first case, a sudden increase in FDP levels, notwithstanding heparin treatment, has prompted immediate delivery of a normal infant [1].

It is therefore our opinion that, where maternal coagulopathy is present, and if there is high likelihood of placental anastomoses, delivery of the surviving twin is the most reasonable option to prevent vascular disruptions and neurological damage.

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