

Letter to the Editor

Markedly Elevated Serum Alpha Fetoprotein Is an Indicator of Extrauterine Pregnancy

To the Editor:

Extremely high elevations (>10 MOM) of MS-alpha fetoprotein (AFP) are encountered rarely, and are difficult to interpret if the ultrasound study shows no fetal abnormality. An important cause of extremely high MS-AFP value is extrauterine pregnancy [Cederqvist et al., 1983; Tromans et al., 1984; Bombard et al., 1994]. We report on a case with extremely elevated (>30 MOM) AFP levels in maternal serum at 15 weeks of gestation, which posed a diagnostic problem at the time of screening but was later diagnosed to involve an extrauterine pregnancy.

CLINICAL REPORT

A 32-year-old woman, gravida 4 (para 2 + 1 + 0 + 0) underwent routine serum AFP screening at 15 weeks of gestation in the current pregnancy. In the first pregnancy she had delivered a macerated fetus at 9 months of gestation; in the second pregnancy, lower segment caesarean section was performed at term for fetal distress, the infant dying after 5 days due to fever and cyanosis; the third pregnancy was terminated at 7 months because of an anecephalic fetus. AFP was measured by an enzyme-linked immunoassay using antibodies obtained from Dakopats and a WHO AFP standard, and the level was found to be more than 30 MOM. Level II ultrasonography did not demonstrate any fetal abnormality. The AFP level in the serum was studied at 18 weeks of gestation and was still greater than 30 MOM. Amniocentesis was done at 19 weeks of gestation. Amniotic fluid was blood-stained with the appearance of hemolysed serum. Amniotic fluid AFP was 1.7 MOM. The ultrasound scan repeated 16 days after the amniocentesis showed a biparietal diameter 2 weeks short of the period of amenorrhea, but no fetal abnormality was detected. The patient was followed up in the antenatal clinic as there was evidence of persistently retarded fetal growth. The mother was advised to take adequate bed rest. She reported at 30 weeks of gestation with loss of fetal movements. Ultrasound scan was repeated and showed intrauterine fetal death with severe oligohydramnios and placental degeneration. Cir-

cular densities in the placenta with echospared areas were noticed. Basal plate echogenicity with chorionic plate indentations were present. Pregnancy termination was tried with oxytocin infusion in escalating doses. Following failed medical induction of labor for 3 days, laparotomy was done with a suspicion of abdominal pregnancy and an extrauterine pregnancy involving the broad ligament and left ovary was found. The macerated female fetus had a normal skull and spine, and weighed 300 g.

DISCUSSION

Screening of MS-AFP is mainly done to identify open neural tube defects, chromosome abnormalities and other risks to fetus such as intrauterine death. In cases where the MS-AFP is markedly high, ultrasound studies are undertaken to look for the presence of neural tube and other defects. The absence of apparent fetal abnormality in the event of a raised MS-AFP is a source of great diagnostic concern and confusion. The present case demonstrates that presence of extrauterine pregnancy should be sought in such cases. In the reported cases of extrauterine pregnancy associated with raised MS-AFP, the diagnosis may [Bombard et al., 1994] or may not [Tromans et al., 1984] be confirmed with ultrasound imaging. Our case demonstrates the difficulty in recognizing an abdominal pregnancy on ultrasound imaging even in the presence of a steeply elevated AFP in maternal serum. The amniotic fluid looking like hemolyzed serum and the extremely high MS-AFP were probably due to breakdown of fetomaternal barrier which may have resulted in mixing of maternal blood, amniotic fluid and fetal blood.

Thus, in addition to ultrasound scan, X-ray film of the abdomen should be obtained in cases with markedly elevated AFP and a normal-appearing ultrasound study as suggested by Tromans et al. [1984]. Based on the retrospective biochemical assays in 8 ectopic pregnancies, Grosskinsky et al. [1993] suggested that a low serum progesterone value with a high MS-AFP value are strongly associated with ectopic pregnancy. However, progesterone estimations are not routinely carried out for monitoring pregnancies. Thus, marked elevation of AFP can help in the early diagnosis of an extrauterine pregnancy and improve its management.

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