PRENATAL DIAGNOSIS, VOL. 10, 473–475 (1990)

SHORT COMMUNICATION

SUCCESSFUL INTRAUTERINE THERAPY OF A LARGE FETAL OVARIAN CYST

C. GIORLANDINO*, M. RIVOSECCHI†, E. BILANCIONI*, P. BAGOLAN†, A. ZACCARA†, C. TARAMANNI* AND A. VIZZONE‡

Department of Ultrasound and Perinatal Medicine, Artemisia Medical Centre; †Department of Pediatric Surgery, Bambino Gesù Hospital, Rome; ‡Department of Obstetrics and Gynecology, II University, Tor Vergata, Rome, Italy

SUMMARY

Fetal ovarian cysts can be managed in different ways, depending upon their size and clinical course: conservatively, by open surgery or by postnatal transabdominal puncture.

However, in cases of large cysts detected antenatally and affecting the ongoing pregnancy, *in utero* transabdominal puncture can be undertaken, without increase of risk.

A case of such a puncture at 30 weeks gestation is reported.

KEY WORDS Ovarian cyst *In utero* therapy Echoguided puncture Fetal therapy

INTRODUCTION

Routine prenatal ultrasound has led to a considerable increase in the diagnosis of neonatal ovarian cysts: up to 1976 there were only 71 reported cases in the literature (Alvear and Rayfield, 1976), whereas in more recent series there were 54 in 11 years, most of them completely asymptomatic.

Regarding postnatal management, fairly general agreement exists about conservative treatment of small cysts (2 cm in diameter) (Debeugny *et al.*, 1989). However, there is still debate about the best treatment of cysts of larger dimensions (5–6 cm in diameter or more): some authors (Ikeda *et al.*, 1988) perform timely surgical intervention, while others advocate conservative management, with ultrasound-guided transabdominal puncture (Eggermont *et al.*, 1988).

We present here a case of an *in utero* puncture of a large (8 cm) ovarian cyst which caused signs of fetal cardiac failure.

CASE REPORT

A 25-year-old woman at 30 weeks' gestation was referred to our department for routine antenatal ultrasound. This revealed a 5·2 cm cystic mass in the posterior area of the fetal abdomen. Kidneys and bladder were normal and the mass was thought to belong to the ovary.

In the following 2 weeks this mass showed a considerable increase, up to 8 cm in diameter. At the same time there was evidence of fetal cardiac failure, as

Addressee for correspondence: Claudio Giorlandino, c/o Artemisia, Viale Liegi 49, 00198 Rome, Italy.

0197–3851/90/070473–03$05.00

Received 27 February 1990
Revised 22 March 1990
Accepted 29 March 1990

demonstrated by the increase in diameter of the umbilical cord as well as by the occurrence of ascites. In consideration of these findings as well as of the early gestational age (30 weeks), fine needle aspiration of the mass was undertaken.

By transabdominal amniocentesis, 0·4 mg of succinylcholine (Pavulon®) was administered parenterally in the fetal gluteus muscle, in order to obtain complete immobilization.

Fifteen min later, under ultrasound guidance, an 18 G needle was inserted into the cyst, resulting in the collection of 100 ml of sero-haemorragic fluid: 5 ml of tetracycline solution (Reverin®) was injected in order to obtain a tissue reaction leading to sclerosis. Cytologic evaluation showed the presence of cyst-lining epithelial cells.

After this procedure the fetus underwent 2 h of cardiotocographic monitoring, which demonstrated complete absence of spontaneous uterine activity. Subsequent ultrasonography showed no more evidence of the cyst and birth followed spontaneous delivery at 40 weeks' gestation: birth weight was 3700 g and Apgar scores at 1 and 5 min were 8 and 10 respectively.

On postnatal ultrasonography at the age of 2 months, there was evidence of a small ovarian cyst (3 cm in diameter) which completely disappeared 2 months later: the child is now doing well and she shows no signs of the intrauterine intervention. An ultrasonogram taken at the age of 10 months confirmed the complete involution of the cyst.

DISCUSSION

The origin of ovarian cysts is far from clear-cut: some authors (Pryse Davies and Dewhurst, 1971) have drawn attention to an excessive stimulation of the fetal ovary by maternal hormones, others (Bergqvist *et al.*, 1984) to the finding of oestradiol producing ovarian cysts in premature babies suggesting negative feedback mechanism with ovarian hyperstimulation. Furthermore, some reports in the literature indicate a possible relationship between ovarian cysts and hypothyroidism (Rizzo *et al.*, 1989; Jafri *et al.*, 1984).

In our case, postnatal management of the ovarian cyst included three different possibilities: waiting for spontaneous involution, surgical operation, and ultrasound-guided transabdominal puncture.

It is obvious that the treatment of choice depends on several factors, such as size and the clinical course: torsion or respiratory distress (Ahmed, 1971; Avni *et al.*, 1983) invariably demand prompt surgery. *In utero* aspiration was thought to be of no advantage, provided that successful drainage was possible just after birth (Nussbaum *et al.*, 1987). However, there is evidence that in the presence of clinical and/or echographic signs of deterioration, as in our case, antenatal aspiration can be successfully undertaken as well. This is particularly true when this procedure is carried out in relatively early pregnancy (30 weeks' gestational age), when the fetal abdomen is quite small (about 9·5 cm in diameter) and the cyst is large enough (8 cm) to prevent movements within the abdomen itself.

We believe that this manoeuvre has no more risks than intrauterine drainage for hydronephrosis. Furthermore, it enables spontaneous delivery and may prevent recurrence and postnatal torsion.

REFERENCES

Ahmed, S. (1971). Neonatal and childhood ovarian cyst, *J. Pediatr. Surg.*, **6**, 702.

Alvear, D.T., Rayfield, M.M. (1976). Bilateral ovarian cysts in early infancy, *J. Pediatr. Surg.*, **11**, 993.

Avni, E.F., Godart, S., Israel, C., *et al.* (1983). Ovarian torsion cyst presenting as a wandering tumour in a newborn: antenatal diagnosis and postnatal assessment, *Pediatr. Radiol.*, **13**, 169.

Bergquist, C., Esscher, T., Lindgren, P.G., *et al.* (1984). Cystic ovaries in a pre-term newborn infant, *Z. Kinderchir.*, **39**, 403.

Debeugny, P., Huillet, P., Cussac, L., Bourgeot, F., Bonnevalle, M., Parsy, P., Bayart, M.C. (1989). Le traitement non opératoire systematique des kystes de l'ovaire du nouveau-né, *Chir. Pediatr.*, **30**, 30.

Eggermont, E., Lecoutere, D., Devlieger, H., Jaeken, J., Vandenberghe, K., Marchal, G. (1988). Ovarian cysts in newborn infants, *Am. J. Dis. Child.*, 142.

Ikeda, K., Suita, S., Nakano, H. (1988). Management of ovarian cyst detected antenatally, *J. Pediatr. Surg.*, **5**, 432.

Jafri, S.Z., Bree, R.L., Silver, T.M., Ouimette, M. (1984). Feta ovarian cysts: sonographic detection and association with hypothyroidism, *Radiology*, **150**, 809.

Nussbaum, A.R., Sanders, R.C., Benator, R.M., Haller, J.A., Dudgeon, D.L. (1987). Spontaneous resolution of neonatal ovarian cysts, *Am. J. Roentgenol.*, **148**, 175.

Pryse Davies, J., Dewhurst, C.J. (1971). The development of the ovary and uterus in the foetus newborn and infant. A morphological and enzyme histochemical study, *J. Pathol.*, **103**, 5.

Rizzo, A., Gabrielli, S., Perolo, A., Pilu, G., Cacciari, A., Domini, R., Bovicelli, L. (1989). Prenatal diagnosis management of fetal ovarian cysts, *Prenat. Diagn.*, **9**, 97.