

HEART RATE PATTERN OF A HYDROCEPHALIC FETUS DURING CEPHALOCENTESIS

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Summary: Antepartum heart rate recording was performed prior to, during and after cephalocentesis of a hydrocephalic fetus.

Signs of fetal distress appeared only after withdrawal of about half of the intraventricular fluid volume, and subside slowly after cessation of the procedure.

Key words: Hydrocephalus, Cephalocentesis, Monitoring.

INTRODUCTION

There is limited knowledge about heart rate pattern of malformed fetuses undergoing various intrauterine surgical procedures.

Reported is a case of a hydrocephalic fetus monitored during cephalocentesis.

CASE REPORT

A 26 year old gravida 3, para 2, was admitted for an elective cesarean section at 39 weeks of gestation. She gave a history of two previous cesarean sections due to cephalopelvic disproportion. During the present pregnancy an ultrasonic scanning was performed at 23 weeks of gestation. The biparietal diameter was 64 mm which is compatible with the 50 percentile of 25 weeks of gestation. No other measurements were performed.

On admittance a huge cystic mass was found and ultrasonography revealed a hydrocephalic fetus. The cranial diameter was 150 mm. A cephalocentesis was decided upon in order to enable a safe repeated cesarean section.

Fetal heart rate was monitored for 20 minutes prior to the procedure using an HP 8030 cardiotocograph. Then an 18-gauge needle was introduced under ultrasonic vision and 1760 cc of fluid were slowly withdrawn over 36 minutes. Fetal heart rate recording continued throughout the procedure. At the end of the cephalocentesis a cesarean section was performed and a female infant weighing 2800 g was delivered. The baby died after 5 minutes. Another 1000 cc of intraventricular fluid were found in the post mortem.

Reviewing the fetal heart records it was seen that prior to the cephalocentesis that baseline

heart rate was 140 per minute with accelerations and normal short term beat to beat variability (fig. 1). at the first 15 minutes of the cephalocentesis the same pattern was observed. Afterwards a mixed pattern of decelerations and accelerations appeared (fig. 2) and this was followed by a constant severe bradycardia and reduced short term beat to beat variability (fig. 3). At this stage the needle was withdrawn and a slow recovery of fetal heart rate was observed (fig. 4).

Due to psychological reasons the patient did not record fetal movements on the strip, but she told us later that she had perceived such movements during the cephalocentesis.

DISCUSSION

Atraumatic delivery and early shunting are the treatment of choice in hydrocephalic fetuses at term (^{1, 2}). Cesarean section or cephalocentesis are usually performed to enable safe delivery.

In our case the hydrocephalic head was of enormous size and a cephalocentesis was necessary prior to the cesarean section.

Recently early fetal shunting was reported in very few animal and human case reports (^{3, 4, 5}).

Fetal cardiovascular reaction to such procedure is of interest especially in the light of recent reports of a higher incidence of heart rate abnormalities in malformed fetuses (^{6, 7}).

Birnholtz and Frigoletto (³) found no change in cardiac rate rhythm while withdrawing 40 cc of fluid. Clewell *et al.* (⁵)

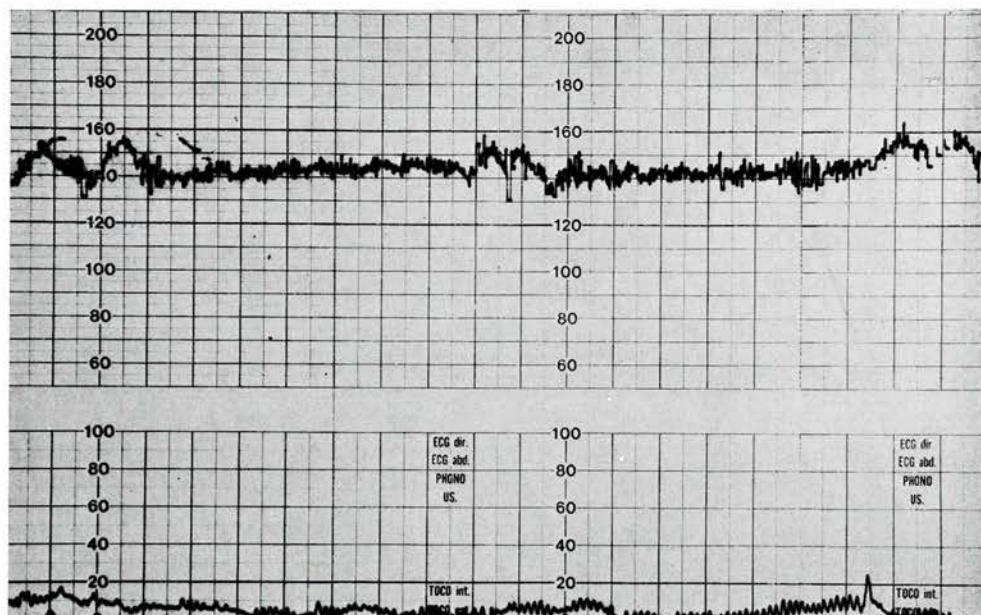


Fig. 1. — Fetal heart rate pattern prior to cephalocentesis.

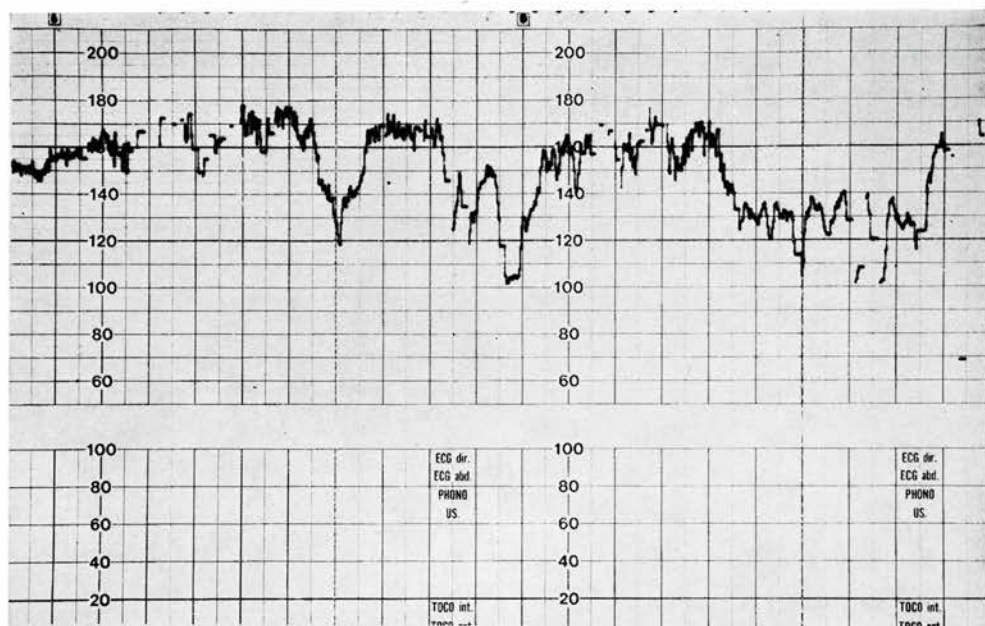


Fig. 2. — Fetal heart rate half way through cephalocentesis.

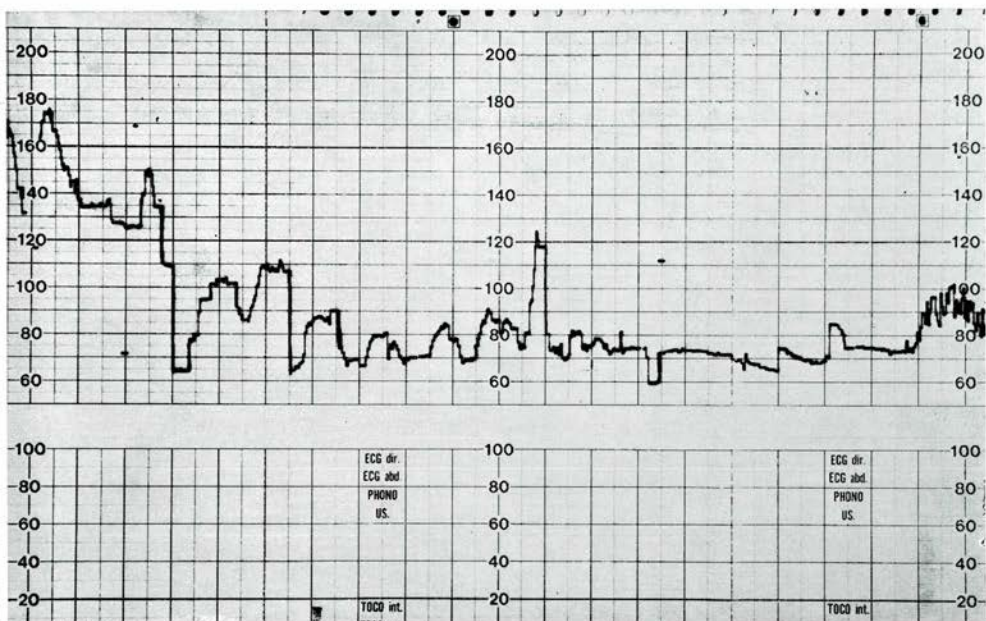


Fig. 3. — Fetal heart rate pattern at the end of cephalocentesis.

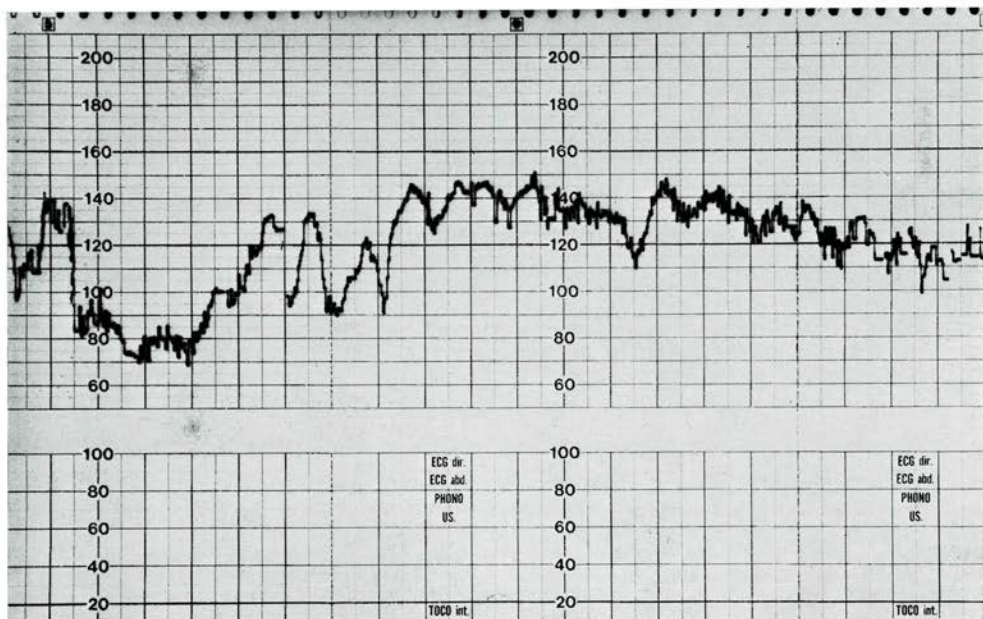


Fig. 4. — Fetal heart rate after the cephalocentesis.

note a stable pattern following the shunting.

The case presented here differs from other reports as the hydrocephalus was huge and amount of fluid withdrawn was enormous. It is of interest to note that despite a severely affected brain, the heart pattern was normal prior to and during most of cephalocentesis procedure. Signs of fetal distress appeared only at a later stage and subside gradually after cessation of the cephalocentesis. It could be suggested that a moderate change in the intracranial pressure of hydrocephalic fetuses has no harmful effect on their heart activity.

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TOPICAL TREATMENT OF VULVAR DYSTROPHIES WITH PROGESTERONE

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Summary: The Authors have studied the topical use of progesterone gel in the treatment of vulvar dystrophies.

The results compared with those obtained previously with testosterone propionate pointed out the positive effects even of the progesterone, which has to be the first therapeutical approach for all the types of vulvar dystrophies, reserving to serious and resistant cases the treatment with testosterone propionate.

Present knowledge of the receptorial situation of the vulvar tissue (^{1, 2, 3}) and also the studies and experiments of Jasionowski (^{4, 5}) and our own (⁶) induced us to treat vulvar dystrophy with topic progesterone. These studies follow our experience with propionate testosterone and therefore permit us a comparative analysis of the results.

The efficacy of propionate testosterone is notable in the topical treatment of

vulvar dystrophies (characterised by a defect of epithelial regeneration) for its stimulating action on the sebaceous glands and of the fibroblasts of the derma, because of a vasodilation and of a regularisation of the epidermal differentiation.

From the receptorial study, the picture of vulvar dystrophy seems to be correlated to a modification of the regulatory hormonal mechanisms. Therefore the therapeutic effects of progesterone and testos-