

EVALUATION OF GRAVIDAS WITH A PREVIOUS BABY WITH CNS DEFECT USING USG

AMARNATHI BIIDE

SUMMARY

The present study of 113 gravidae for recurrence of congenital defects of the CNS in subsequent pregnancies, and the role of oral antenatal supplementation of folic acid in their prevention was evaluated in a retrospective observational study undertaken at the clinic for special ultrasonographic scanning for foetal malformations at the Nowrajee Wadia Maternity Hospital, Mumbai. The present study revealed an incidence of recurrence of CNS malformation in 6.48% of cases. The malformation most likely to recur was hydrocephalus. Besides anenaphaly, hydrocephalus and spina bifida, other neural defects and miscellaneous other malformations were detected in 6 cases (5.3%) each. Routine malformations scans during pregnancy in high risk cases may obviate the need for an amniocentesis. Lastly, the importance of the role of folic acid in the prevention of CNS abnormalities has been stressed in this study.

INTRODUCTION

Congenital defects of the foetal neural system is one of the most common, and the most devastating defects. Ultrasonography has played an increasingly important role

in their prenatal diagnosis. In the present prospective study we tried to look at the varieties of neurological anomalies in the past pregnancy, and their recurrence in the current pregnancy. We tried to correlate the type of defect seen earlier and the one detected in the index pregnancy and the accuracy of high resolution USG in the prenatal diagnosis in this high risk group.

*Nowrosjee Wadia Maternity Hospital, Parel,
Mumbai 400 012.*

MATERIAL & METHODS

A woman with a previous history of a congenitally abnormal child becomes a case at a higher risk of development of anomaly in subsequent pregnancies. A total of 113 such cases registering at our hospital were scanned in a special 'Malformation session' run in the hospital. There the patients were scanned carefully using a high resolution USG machine. The initial scan was carried out at 18 - 20 weeks or at the first visit, in case of the patient registering later than 18-20 weeks. Follow-up scans were carried out if needed a 3.5 MHz convex sector probe was used. The Wipro GE 3200 advantage USG machine was utilised. A detailed organ specific examination was carried out using a checklist. Careful records of the case were maintained and the cases followed up till delivery. The USG diagnosis was confirmed with an autopsy wherever appropriate and possible. The USG finding of normalcy was also confirmed at delivery.

RESULTS

A total of 113 women with a previous neural anomaly were studied. 108 of these was available for follow up. A distribution of the defects seen in the past pregnancy were as shown in Table I.

Anencephaly formed the most common prenatal defect seen in such women at 45.1%. The miscellaneous group comprised of two cases each of encephalocoele and omphalocoele with meningocele, and one case each of holoprosencephaly, microcephaly, craniosynostosis.

6 patients were found to be having congenital neurological defects again. This gives a recurrence risk of $6/108 = 5.56\%$. Table 2 shows the recurrence of the defects.

Though anencephaly with or without spina bifida is the most common defect encountered in the previous pregnancy, the recurrence risk was found lower than in cases of hydrocephalus. There was one case of congenital abnormality missed on ultrasonography. This baby had isolated dextrocardia with a

TABLE I
NEUROLOGICAL ANOMALIES IN THE PREVIOUS PREGNANCY

Congenital Defect	No. of cases	Percentage
Anencephaly	51	45.1
Hydrocephalus	39	34.5
Spina bifida	11	9.7
Neural tube defect	6	5.3
Miscellaneous	6	5.3
Total	113	100.0

TABLE II
RECURRENCE OF THE DEFECTS

Defect in the previous pregnancy	Defect in the present pregnancy
Anencephaly	Absent right palm and fingers
Hydrocephalus	Hydrocephalus & spina bifida
Previous 2 anencephaly	Hydrocephalus & spina bifida
Hydrocephalus	Hydrocephalus
Anencephaly & spina bifida	Anencephaly

TABLE III
EFFECT OF FOLIC ACID SUPPLEMENTATION
ON THE RECURRENCE RATE

Folic acid supplementation at conception	Total cases	Cases with CNS defect
Supplementation given	44	1
Supplementation not given	22	4
Data unavailable	42	1

TABLE IV
ACCURACY OF USG FOR DETECTION OF CNS ANOMALIES

Abnormal Scans	Abnormalities found	PPV
6	6	100%
Normal Scans	Abnormalities found	NPV
107	1*	93%

PPV = Positive predictive value

NPV = Negative predictive value

* Baby was found to be having uncomplicated dextrocardia at birth and was discharged in a healthy condition.

