PROLONGED PREGNANCY—A CORRELATION WITH DEVELOPMENTAL ERRORS

By

VINITA SALVA, M. J. JASSAWALLA AND D. N. PATEL

SUMMARY

This paper studies the correlation between prolonged pregnancy and developmental anomalies. Of the malformations studied, congenital talipes equinovarus, congenital dislocation of the hip, Down's syndrome, and cleft lip and cleft palate are more common in patients with prolonged gestation.

Introduction

Modern obstetrics has been marked by an increasing emphasis on perinatal morbidity, mortality and the factors that may affect them. To the practising obstetrician, the problem of post-datism constantly recurs and often served as an indicator of some abnormality either in the mother, child or in the process of labour.

This paper studies the correlation between prolonged pregnancy and developmental anomalies.

Material and Methods

All babies born over a period of 14 months, at the Nowrosjee Wadia Maternity Hospital, Bombay, were studied with regards to the presence/absence of congenital anomalies (Duration of study: 1st January 1982 to 31st March 1983).

The relationship between congenital malformations and prolonged pregnancy was studied in those mothers, who were postdated, provided their dates could be accurately established.

A detailed record of the mother's medical and obstetric career was also studied.

Results

During this period, there were 166 malformed babies in a total of 10,000 live births (1.66%). Of these 166 neonates, 44 were associated with a prolonged gestational period.

5% of the malformed postdated fetuses were associated with a maternal age over 31 years. Postdatism as such, however is known to be more predominant in younger mothers.

Studies conducted by Evans *et al* (1963) have shown a higher incidence of postdatism in primis. In the current study the developmental anomalies in the postdated groups were in no way related to parity. 32.6% of the patients were primis, 25.6% second gravidas and 32.6% being third gravidas.

5 of the postdated mothers who delivered malformed fetuses i.e. 11.6% had a past bad obstetric history while 2 pati-

From: Nowrosjee Wadia Maternity Hospital, Parel, Bombay 400 012.

Accepted for publication on 18-3-87.

ents (4.6%) had a recurrent malformation. Only 1 patient had a history of genetic disorder in the family.

In the current pregnancy, 8 out of 44 patients (18.2%) presented with a hypertensive disorder of pregnancy while 4 patients had hydramnios (9.1%). Only 1 patient had a history of threatened abortion in the current pregnancy. None of the patients had a history of antenatal exposure to infection, drugs or X-rays.

Both congenital malformations and prolonged gestation are known to be associated with malpresentations (Nesbitt, 1955) and 10 patients (22.7%) of our study group had an abnormal presentation (8 breech presentations and 2 face).

Table I shows the mode of delivery. The incidence of operative intervention was 14%. Except for 1 section performed for foetal distress which resulted in a baby with congenital pneumothorax, the remaining cases of operative intervention resulted in babies with anomalies compatible with life.

Of the 44 births, 5 were stillborn (11.4%) while in the 39 liveborn, the neonatal death rate was 16% (Table II).

TABLE II
Perinatal Outcome

Outcome	No. of cases	Per cent
Live births	39	88.6
(Neonatal deaths)	(7)	(15.9)
Still births		
Fresh	4	9.1
Macerated	1	2.3

Though postdatism as such, is associated with a higher percentage of babies weighing over 3 kg in our study only 9% of the babies were over this weight since

TABLE I
Mode of Delivery

	No. of cases	Per cent
Spontaneous	38	86.4
Forceps	2	4.5
Lower segment caesarean section	3	6.8
Craniotomy	1	2.3
	44	100

TABLE III
Birth Weight

Weight in kg.	No. of babies	Per cent
Upto 1.5	5	11.4
1.6-2.0	5	11.4
2.1-2.5	13	29.5
2.6-3.0	17	38.6
3.1-3.5	4	9.1
	44	100

TABLE IV
Types of Congenital Malformations
(N = 44 babies)

	No. of cases involved	% involved
Central nervous system	11	25.0
Cardiovascular system	2	4.5
Respiratory system	3	6.8
Genito-urinary system	8	18.2
Skin	2	4.5
Neck	3	6.8
Down's syndrome	6	13.6
Oro-facial anomalies	11	25.0
Limb defects	10	22.7

most malformed babies have a birth weight lower than that expected for their gestational age group.

Discussion

The malformations themselves were classified both systemwise and as to whether they occurred singly or in association with other anomalies.

25% babies had a central nervous system malformation of which only 2 occurred by themselves. There were 4 cases of anencephaly in the entire series of 166 congenital malformations in the total births of which only 1 was postdated. This may be due to the fact that anencephaly is often associated with hydramnios which in itself can cause premature labour.

Of the 44, postdated malformed babies, 6 had Down's syndrome as compared with 10 babies with Down's syndrome in the remaining 122 non-postdated group. Thus Down's syndrome has a ratio of 3:1 in prolonged pregnancy as compared with normal gestation.

Cleft lip and cleft palate were twice as common in the post-dated babies with a ratio of 2:1 and 12:7 respectively.

Of the total recorded cases of congenital talipes equinovarus and calcaneovalgus, 7 were in the post-dated babies i.e. talipes is 1½ times more common in prolonged gestation. One of the factors said to aggravate talipes is raised intrauterine pressure against the fetal limbs (Dunn, 1976) as is seen in postdated cases where the decreased liquor amnii causes the fetal limbs to press against the uterine musculature.

One in every 700 postdated birth was associated with congenital dislocation of the hip as compared with 1:2500 in the non-postdated group giving a ratio of 7:2 in the postdated babies as compared to non-postdated babies.

Conclusion

Developmental errors are found to occur more commonly in the group of patients with prolonged gestation. Of the malformations studied, only talipes could be possibly directly aggravated by postdatism while the cause and effect relationship of the other disorders needs further study. The integrity of the fetal pituitary adrenal axis in Down's syndrome as a possible factor leading to prolonged pregnancy needs elucidation.

All postdated babies should be routinely scrutinised for congenital dislocation of the hip and talipes, as these deformities are fairly common in the postdated group and are easily correctable if detected in the first week of life.

Acknowledgement

We thank the Dean, Nowrosjee Wadia Maternity Hospital, Bombay for permission to conduct the study.

References

1. Dunn, P. M.: British Medical Bulletin, 32: 71-76, 1976.
2. Evans, Koeft, Morley: Am. J. Obstet. Gynec. 85: 701, 1963.
3. Nesbitt, R. E. L.: J. Obstet. Gynec. Survey, 10: 311, 1955.