

ANENCEPHALIC PREGNANCIES IN A MALAYSIAN HOSPITAL

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INTRODUCTION

ANENCEPHALY is a common and interesting fetal abnormality. Recent attention has been concentrated on the early antenatal diagnosis of this malformation and such reports are many. However, more basic studies on the relationship of anencephaly to demographic factors like maternal, fetal and geographical factors are few. These have been mainly from the west. Hence, a study of anencephalic pregnancies from the tropical region seems appropriate.

MATERIALS AND METHODS

A retrospective analysis of all anencephalic fetuses delivered at the Maternity Hospital, Kuala Lumpur, Malaysia, from January 1973 to April 1977 was carried out. Data recorded included maternal data, fetal data, labour data and complications during the antepartum period and during labour. Other associated abnormalities of the fetus at birth were also recorded.

RESULTS

Incidence

During the study period, there were 73,307 hospital deliveries out of which 40 were anencephalic pregnancies. The incidence of anencephaly in this study was thus 0.55 per 1000. The incidence was higher in the Chinese (0.77 per 1000) compared to the Indians (0.53 per 1000) and the Malays (0.35 per 1000). It was interesting to note that all patients were third class hospital admissions, that is, they were in the lower social status group.

Maternal Data

Maternal age and gravidity. Table I shows that there is no obvious pattern between the age and gravidity to incidence of anencephaly. This is true for the primigravidae, multigravidae and grand-multigravidae. The majority of patients were multigravidae (75%).

Table I
Anencephalic pregnancies in relation to maternal age and gravidity

Age group (years)	Gravidity					
	1		2-4		5+	
	No.	%	No.	%	No.	%
<20	4	10.0	1	2.5	-	-
20-24	4	10.0	8	20.0	2	5.0
25-29	2	5.0	6	15.0	3	7.5
30-34	-	-	2	5.0	2	5.0
35-39	-	-	-	-	4	10.0
40 and above	-	-	-	-	2	5.0

Time of diagnosis. Of the 40 patients, the diagnosis was made only at delivery in 30 (75%) patients. Only 6 (15%) patients were diagnosed antenatally. Four (10%) patients were diagnosed during labour before delivery. Of the 22 booked patients, the incidence of antenatal diagnosis of this fetal malformation was 27%.

Maternal complications. During pregnancy, pre-eclampsia was present in 4 out of 37 patients (10.8%), and polyhydramnios was present in 8 out of 37 patients (21.6%). In 3 patients, there was no record of whether these complications were present or not. During labour, shoulder dystocia was present in 2 (5%) patients. Both these fetuses weighed less than 2950 gm at birth. There were no patients with post-partum hemorrhage. Maternal injuries encountered during delivery were minor. These included first degree perineal tears in 4 (10%) patients, second degree perineal tears in one (2.5%) patient and minor labial tears in one (2.5%) patient.

Duration of pregnancy. As shown in Table II, 19 (57.6%) patients delivered at term. Eight (24.2%) pregnancies were pre-term out of which, 5 were complicated by poly-hydramnios. Six (18.2%) patients were post-term; none of these patients had polyhydramnios.

Duration of labour. The mean duration of labour was 10 hours 4 minutes. Of the 35 patients included, 11 (31.4%) laboured for less than 6 hours, 11 (31.4%) between 6–12 hours, 8 (22.9%) between 12–18 hours, 4 (11.4%) between 18–24 hours, and one (2.9%) for more than 24 hours.

Mode of delivery. As shown in Table IV, vaginal delivery was achieved in 35 out of 38 patients (92.0%). Caesarean section was done in 3 (8.0%) patients; one for a big breech, one for a shoulder presentation, and one for an impacted face presentation. Two patients who delivered before arrival in hospital were excluded. The majority (60.5%) of the vaginal deliveries were spontaneous cephalic.

Fetal data

Fetal presentation in labour. The presentation was cephalic in the majority of the anencephalic fetuses – 23 (60.5%). Other presentations included breech (21.1%), face (15.8%) and shoulder (2.6%).

Table II

Duration of pregnancy in anencephalic pregnancies*

	Duration of pregnancy (weeks)							
	<36	36–	37–	38–	39–	40–	41–	42+
No.	7	1	–	5	4	7	3	6
%	21.2	3.0	–	15.2	12.1	21.2	9.1	18.2

* out of 33 patients

Mean duration of pregnancy (Table III). The overall mean duration of pregnancy was 38.8 weeks. For those with polyhydramnios, it was 36.1 weeks and for those without polyhydramnios, it was 39.5 weeks. Those patients with polyhydramnios therefore had a shorter duration of pregnancy.

Table III

Mean duration of pregnancy in anencephalic pregnancies

Overall ¹	—	38.8 weeks
Those with polyhydramnios ²	—	36.1 weeks
Those without polyhydramnios ³	—	39.5 weeks

NB ¹out of 33 patients

²out of 7 patients

³out of 26 patients

Labour data

Onset of labour. The onset was spontaneous in 38 (95%) patients while labour was induced in 2 (5%) patients at 35–40 weeks, for the relief of symptoms secondary to polyhydramnios.

Table IV

Mode of delivery in anencephalic pregnancies*

Mode of delivery	No.	%
Spontaneous cephalic	23	60.5
Spontaneous face	4	10.5
Spontaneous breech	1	2.6
Assisted breech	5	13.2
Breech extraction	1	2.6
Forceps	1	2.6
Caesarean section	3	8.0

* out of 38 patients

Sex of fetus. It was interesting to note that in this study, the anencephalic fetuses were more commonly males (22–55%) than females (18–45%). The ratio of male to female fetuses was thus 1.22: 1.

Fetal birth weights. The mean birth weight was 2028.5 gm. Most (57.5%) of the fetuses weighed

more than 2000 gm at birth; 12.5% were below 1000 gm in weight (Table V).

Table V

Birth weight of fetus in anencephalic pregnancies		
Birth weight (gm)	No.	%
<1000	5	12.5
1000-	9	22.5
1500-	3	7.5
2000-	10	25.0
2500-	10	25.0
3000-	2	5.0
3500-	0	0
4000 and above	1	2.5

Viability of fetus. Half of the fetuses were live births and the other half were stillbirths. Of the stillbirths, 5 (12.5%) were macerated and 15 (35.5%) were fresh. All 20 live births ended as perinatal deaths.

Other associated abnormalities. In 3 (7.5%) instances other abnormalities were present. These were exomphalos and absence of one limb in one fetus; encephalocele, polydactyly and hydrops in one fetus; and meningomyelocele in one fetus.

DISCUSSION

The incidence of anencephalic pregnancies in this study (0.55 per 1000) is lower than reported figures from the west which vary from 0.76 to 2.43 per 1000 (Cassady, 1969; Fedrick, 1970; Honnebier and Swaab, 1973; Janerich, 1972).

The relationship of maternal age and gravidity to incidence of anencephalic pregnancies in this study does not conform to the described 'U' shaped relationship, i.e., among primigravidae, the younger the mother, the higher the risk; while among the multigravidae, the older the mother, the greater the risk (Fedrick, 1970; Janerich, 1972). However, this pattern is not invariably found.

Polyhydramnios occurred in only 21.6% of our patients compared to reports of 51.5% (Milic and Adamsons, 1969) and 73% (Honnebier and Swaab, 1973). This is an important association as it is seen that the mean duration of pregnancy is markedly shortened in its presence, in this study as well as others (Honnebier and Swaab, 1973; Milic and Adamsons, 1969).

Although the relationship of prolonged pregnancy to anencephaly has been stressed, the incidence of prolonged pregnancy in this malformation has varied from 2.3% to as high as 40% (Cassady, 1969; Honnebier and Swaab, 1973; Milic and Adamsons, 1969). It is therefore not an invariable relationship. Nevertheless, the majority of patients go into spontaneous labour, 95% in this study compared to about 78% in others (Honnebier and Swaab, 1973; Milic and Adamsons, 1969).

The problem of shoulder dystocia during vaginal delivery of an anencephalic fetus has, in our opinion, been overstressed. This complication occurred in only 2 patients in this study. There has been no mention of this complication in other reports (Cassady, 1969; Honnebier and Swaab, 1973; Milic and Adamsons, 1969).

Although most studies have indicated a female predominance over males in the fetuses delivered in the ratio 3:2 or 3:1, this study showed a male predominance over female in the ratio 1.22:1. It indicates therefore that it is not always true that anencephalic fetuses are more commonly female.

The low incidence of antenatal diagnosis of this malformation in this study has made us aware that we should be more acute in our clinical suspicion of this malformation. The present trend of research into its early antenatal diagnosis seems justified. In our hospital, we hope to pursue this aspect of the problem when we acquire our ultrasonic scanner and when the facilities for alpha-fetoprotein estimations are increased.

SUMMARY

A retrospective analysis of 40 anencephalic pregnancies seen in a Malaysian hospital is presented. The incidence was 0.55 per 1000. The relationships of this fetal malformation to racial and social class factors, maternal factors, labour and delivery characteristics and fetal factors are presented. The results are discussed in the light of available reports.

REFERENCES

- Cassady, G., (1969), "Anencephaly. A 6 year study of 367 cases". *Amer. J. Obst. & Gynec.*, **103**: 1154-1159.
- Fedrick, J., (1970), "Anencephalus: Variation with maternal age, parity, social class and region in England, Scotland and Wales," *Ann. Hum. Genet. Lond.*, **34**: 31-37.
- Honnebier, W.J., and Swaab, D.F., (1973), "The influence of anencephaly upon intrauterine growth of fetus and placenta and upon gestation length," *J. Obst. & Gynaec. Brit. Cwllth.*, **80**: 577-588.
- Janerich, D.T., (1972), "Anencephaly and maternal age." *Amer. J. Epidem.*, **95**: 319-325.
- Milic, A.B. and Adamsons, K., (1969), "The relationship between anencephaly and prolonged pregnancy," *J. Obst. & Gynec. Brit. Cwllth.*, **76**: 102-111.