

OVERSIZED INFANTS:

(Review of Maternal and Foetal Prognosis)

by

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Excessive size of the foetus is an important cause of obstructed labour as a result of the large less malleable foetal head. Jackson (1963) has stated that most women will find a 10 lb. (4500 g.) child too large even with a normal presentation, good uterine action and a normal pelvis. However, Greenhill (1965) is rather optimistic that the mother may be usually delivered successfully if the child does not weigh more than 5000 g. provided the other conditions are favourable. The problems associated with oversized infants have been studied by Koff and Potter (1939), Nelson *et al* (1958), Bolton (1959), Mc Ewan and Murdoch (1966) and Sack (1969). Sack's is particularly an useful study of maternal, obstetric, foetal and new born characteristics of large infants. In a long term follow up of these infants, Sack has found neurological disability in 11.4% and he has emphasised the need for a more enlightened obstetric and paediatric approach to the problem of oversized infants. The purpose of this paper is to establish the nature of maternal and foetal risks in pregnancies complicated with oversized infants. For the purpose of this study, all infants with birth weight of 4000 g. or more have been considered as "oversized".

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Accepted for publication on 9-6-1975.

Material and Methods

Over a period of five years from 1-10-1969 to 30-9-1974, there were 9620 deliveries in Tirunelveli Medical College Hospital, Tirunelveli. Twentyone babies weighed 4500 g. or more (0.22% of all deliveries) and 118 babies weighed 4000 g. or more (1.23%) Eastman and Hellman (1966) have quoted higher incidences of 0.4% for infants weighing 4500 g. or more and 5.3% for infants weighing 4000 g. or more. The largest baby in this study weighed 7000 g. Vertex was presenting in 102 cases and in 16 cases, malpresentations, such as breech 9, face 4 and brow 3 occurred. All cases associated with malpresentations have been excluded from this study. The course and outcome of labour in 9 cases of breech presentation with oversized infants have been reported separately.

Observations

The age and parity are shown in Table I. There were 19 primigravidas and 26 grand multiparas. Eighty-five patients were in the age group between 21 to 35 years. The complications of pregnancy are shown in Table II. Hydramnios was observed in 8 cases, but there was no increase in the incidence of postmaturity and diabetes. The type of delivery is shown in Table III. Two patients died before delivery because of rupture of uterus. Spontaneous vaginal delivery

TABLE I
Age and Parity

Age	PARITY												
	0	1	2	3	4	5	6	7	8	9	10	11	12
20 yrs. & less	4	-	1	-	-	-	-	-	-	-	-	-	-
21-25 years	11	7	4	3	4	-	-	-	-	-	-	-	-
26-30 years	3	5	6	4	5	4	2	-	-	-	-	-	-
31-35 years	1	2	2	4	5	3	2	3	2	1	1	-	1
36-years and over	-	1	2	1	1	-	4	-	-	1	1	1	-

TABLE II
Complications of Pregnancy

	No. of cases
Hydramnios	8
Accidental haemorrhage	3
Placenta praevia	3
Pre eclampsia	3
Previous caesarean section	3
Clinical diabetes	1
Postmaturity	1

TABLE III
Type of Delivery

Type of delivery	No. of cases
Spontaneous delivery	45
Midforceps	14
Vacuum	2
Craniotomy	4
Lower segment caesarean section	27
Classical caesarean section	1
Subtotal hysterectomy	5
Rent repair	2
Died undelivered	2

ensued in only 45 cases. Twenty-eight patients were delivered by caesarean section. The primary indications for caesarean section are shown in Table IV. The complications of labour are shown in Table V. Rupture of uterus occurred in 9 cases. The causes of rupture are shown in Table VI. In cases, the rupture occurred spontaneously as a result of 'unsupervised and unintentional trial labour' at home. In one case of previous classical caesarean section, the pa-

TABLE IV
Primary Indications for Caesarean Section

Indications	No. of cases
Big baby with C.P.D.	8
Uterine inertia unresponsive to pitocin	6
Cervical dystocia	3
Placenta praevia	3
Persistent R.O.P.	2
Foetal distress	2
Failed forceps	2
Failed craniotomy	1
Previous caesarean section	1

TABLE V
Complications of Labour

Complications	No. of cases
Premature amniorrhexis	7
Cord prolapse	1
Uterine inertia	10
Intrapartum sepsis	8
Cervical dystocia	3
Impending rupture of uterus	6
Rupture of uterus	9
Shoulder dystocia	4
Atonic P.P.H.	7

TABLE VI
Causes of Rupture of Uterus

Causes	No. of cases
Spontaneous rupture:	
C.P.D.	4
Grand multiparity	3
Traumatic:	
Forcible shoulder extraction	1
Classical scar rupture:	1

tient was badly handled in a private nursing home for over 48 hours, until the uterus ruptured and the patient's condition deteriorated beyond all hopes for survival. In one case, the rupture was caused by unwarranted forcible attempts to extract impacted giant shoulders.

Shoulder dystocia was encountered four times. Two of them were admitted after delivery of the foetal head at home. These babies weighed 6000 g. and 7000 g. In the later case, forcible attempts to extract the giant shoulders resulted in rupture of uterus prior to admission and the mother died within a few minutes after hospitalisation. Atonic postpartum haemorrhage was present in seven cases. There were four maternal deaths and the details of these cases are shown in Table VII. Twenty babies were lost (2 mace-

TABLE VIII
Perinatal Deaths in Relation to Type of Delivery

Type of delivery	Total P.N. Deaths
Spontaneous delivery	47
Macerated babies	-
Cord prolapse	-
Midforceps	14
Craniotomy	4
Rupture of uterus	9
Caesarean section	38
Failed forceps	-
Failed craniotomy	-
Cervical dystocia	-
Uterine inertia	-

nes, 1957). Excessive size of the foetus may be related to one or more of the following—higher social class, indolent habits, multiparity, excessive size of one or both parents, elderly father, diet, ex-

TABLE VII
Details of Maternal Deaths

Sl. No.	Complications of labour	Type of Delivery	Baby weight	Cause of death
1.	Placenta praevia Type II posterior	L.S.C.S.	4500 g.	Acute dilatation of stomach
2.*	Rupture of uterus due to forcible shoulder extraction (outside)	Died undelivered	7000 g.	Haemorrhage and shock
3.*	Classical scar Rupture	-do-	4000 g.	-do-
4*	Rupture of uterus (C.P.D.)	Subtotal hysterectomy	4000 g.	-do-

*These patients were admitted in moribund condition.

rated, 17 fresh still birth and 1 neonatal death). The causes of perinatal deaths are shown in Table VIII.

Discussion

Eastman and Hellman (1966) have stated that the child at birth rarely exceeds 5000 g. in weight. There are, however, authentic reports of birth of infants weighing 11.3 kg. (Belcher, 1916), 11.0 kg. (Moss, 1922) and 10.8 kg. (Bar-

cessive weight gain during pregnancy, hypothyroidism, pre-diabetes, clinical diabetes, postmaturity, erythroblastosis, etc.

In this study, the birth weight could not be related to social groups since the majority of our hospital patients belong to low socio-economic groups. Miller *et al* (1944) found that the incidence of babies weighing 5000 g. or over was 0.07% in the non-diabetic women, 3.9% in prediabetics and 6.4% in diabetics.

The incidence of clinical diabetes was 2.9% in Sack's series and 1.2% in Mc Ewan's series, compared to 0.98% in the present study. Though it is generally believed that postmaturity is a frequent cause of oversized infants, Koff and Potter (1939) showed that postmaturity was not an important cause of excessive size of the infant.

In general the course of labour resembles that in contracted pelvis of just-minor type (Greenhill, 1965). Dystocia is generally due to the fact that the head becomes not only large, but harder and consequently less malleable with increasing weight (Eastman and Hellman, 1966). In this study, spontaneous delivery ensued in only 44% of cases, compared to 63% in MC Ewan's series. There was no rupture of uterus in the series reported by Mc Ewan and Murdoch (1966), whereas labour was complicated by rupture uterus in 8.8% of our cases.

Shoulder dystocia is a well recognised complication of large infants. Schwartz (1968) found an incidence of 1.7% shoulder dystocia in infants weighing 4000 g. or more, compared to 3.9% in this study. In Sack's series, the incidence of shoulder dystocia was 10% in infants weighing 4500 g. or more compared to 14.3% in this series.

The perinatal mortality was 19.6% in this study and this is much higher than the incidences of 2.9% in Mc Ewan's series and 7.2% in Sack's series. There was no maternal death in Mc Ewan's series. In Sack's series, there was one maternal death among 766 patients delivered of oversized infants. In this study, there were four maternal deaths (3.9%). We feel that most of the maternal and perinatal deaths in this study are due to avoidable factors.

Summary

The course and outcome of labour in 102 patients delivered of infants weighing 4000 g. or more have been reviewed. Spontaneous delivery ensued in only 44%. Over one fourth of the patients were delivered by caesarean section. Rupture of uterus occurred in 8.8%. Shoulder dystocia was encountered in 3.9%. Nearly one fifth of the babies were lost.

Acknowledgement

The author is thankful to Dr. B. Subbiah, M.D., D.C.H., Superintendent, Tirunelveli Medical College Hospital, Tirunelveli and Dr. Mrs. S. Ananthalakshmi, M.D., D.G.O., Reader and Head of the Department of Obstetrics and Gynaecology, for their kind permission to publish hospital records.

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