THE GRANDE MULTIPARA*

BY

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Introduction

A grande multipara is usually defined as a pregnant woman who has had five or more previous viable babies. Some have restricted the term from seventh pregnancy onwards.

The importance and risks of pregnancy and labour of grande multipara have been emphasised by various authors. With increase of age some medical disorders as hypertension, renal disease, heart disease, diabetes might give rise to serious complications unless carefully looked for. Certain serious obstetrical complications, as rupture of the uterus, mostly occur in grande multipara. Cephalo-pelvic disproportion might be a contributory factor in this serious complication. One may be misguided with an idea that the grande para cannot go in for cephalo-pelvic disproportion. Its importance has been emphasised later. Abnormal lie or unstable lie of foetus might occur at term in women of high parity. The other complications of pregnancy and labour, as antepartum haemorrhage, morbid adhesion of placenta, post-partum haemorrhage, increase with increment of parity, particularly in the grande multipara group of patients.

The question of increase in maternal mortality in higher parity groups has been stressed by many authors, although we could not confirm it, as will be seen later.

When we turn to the prognosis for the foetus, as it is affected by parity, it is evident that perinatal mortality rate increases from fifth pregnancy. It becomes urgently important to enquire why and what factors are responsible for the high toll, which these women pay in childbearing.

In this series 1,068 cases of grande multipara have been analysed from Chittaranjan Seva Sadan Hospital for Women, Calcutta, from one year record (1952-1953), where the writer worked.

Incidences

Total number of cases of grande multipara in the year 1952-1953—1,068.

Total number of confinements in the same year—13,240.

Incidence of grande multipara—8.06 per cent.

Total number of primiparae confined—3,212.

Incidence of primiparae confined —24.2 per cent.

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TABLE I

Series	Total no. of cases.	Parity				
		5	6	7	8	9 & above
Chittaranjan Sevasadan.	1,068	101	117	236	227	387
Tombarns'	306	—	—	46	36	89
Eastman's	3,964	—	—	—	1,151	2,813

N. B. In our series we had, 19th para — 1 case.
18th para — 1 case.
16th para — 1 case.
15th para — 3 cases.

TABLE II

Incidence of Complications

Feeny's 518 cases		Present series of 1,068 cases.		
1. Malpresentations:	No.	1. Malpresentation:	No.	Percent
(a) Breech presentation:	33	(a) Breech Presentation:	41	3.8
(b) Oblique lie:	14	(b) Occipito-posterior:	21	1.9
(c) Presentation & Prolapse of cord:	14	(c) Complex presentation:	4	0.3
2. Postpartum haemorrhage:	17	(d) Transverse lie.	7	0.6
3. Disproportion:	14	(e) Cord prolapse:	4	0.3
4. Rupture of uterus:	6	(f) Face presentation:	7	0.6
5. Obstetric shock:	7	2. Haemorrhages:—		
6. Precipitate labour:	2	(a) Placenta previa:	32	2.9
Barns' 306 cases.		(b) Accidental— haemorrhage:	24	2.2
1. Malpresentations:		(c) Postpartum— haemorrhage:	33	3.0
(a) Transverse lie:	12	3. Disproportion:	18	1.6
(b) Breech presentation:	10	4. Rupture of the uterus:	10	0.9
(c) Brow presentation:	1	5. Anaemia:	20	1.8
(d) Cord prolapse:	3	6. Pre-eclamptic toxaemia:	12	1.1
2. Postpartum haemorrhage:	25	7. Obstructed labour:	8	0.7
		8. Eclampsia:	4	0.3
		9. Heart failure:	4	0.3
		10. Hydramnios:	7	0.6
		11. Twins:	31	2.8
		12. Triplets:	1	00.9
		13. Prolapse uterus	3	0.2

TABLE III

Incidence of Operative Interference with Indications

(Own series)

Operations	No.	Percent	Indications	
1. Forceps	22	2.05	(a) Prolonged 2nd stage of labour	12
			(b) To cut short 2nd stage of labour	4
			(c) Foetal distress ..	5
			(d) Maternal distress ..	1
2. Lower segment caesarean section	20	1.8	(a) Central placenta previa	7
			(b) Cephalo-pelvic disproportion	10
			(c) Repeated malpresentation	1
			(d) Cervical dystocia .. (After amputation of cervix)	1
			(e) Repeat section ..	1
3. Manual removal of placenta ..	20	1.8	Postpartum haemorrhage with retained placenta.	
4. Internal podalic version ..	7	0.6	(a) Complex presentation ..	3
			(b) Cord prolapse ..	4
5. Craniotomy	9	0.84	(a) Obstructed labour ..	2
			(b) Disproportion ..	6
			(c) Hydrocephalus ..	1
6. Subtotal hysterectomy ..	9	0.84	(a) Rupture of the uterus	
7. Suturing of classical caesarean scar	1	0.9	(a) Rupture through the classical section scar.	

Pregnancy and its Complications

The incidence of confinements in grande multipara at the hospital is much less than that in primiparae. But the incidence of complications is either higher or almost equal in comparison with the primiparae. The importance and risks of multiparity especially after 5th pregnancy cannot be overemphasised; this is more so because of the common impression that labour is easy in a multipara.

The abortion rate is increased. The definite cause of this is difficult to ascertain. Hyperemesis is usually uncommon. Hypertensive heart disease has been greatly emphasised by Eastman, but in this series its importance has not been noticed so much. Majority of pre-eclamptic toxaemias are superimposed on essential hypertension. The incidence of twin pregnancy was 2.8 per cent. The onset of labour was premature in many cases resulting in higher neonatal death rate.

Two other conditions, antepartum haemorrhage and anaemia, deserve special mention due to the seriousness of the conditions.

Antepartum Haemorrhage

In 36 per cent of cases of antepartum haemorrhage we could not ascertain the cause. The incidence of placenta previa was much higher, 2.9 per cent. The diagnosis of pla-

centa previa was labelled after feeling the placenta through the cervical os. The incidence of accidental haemorrhage in this series is 2.2 per cent. Pre-eclamptic toxaemia was associated in 0.91 per cent. The incidence of antepartum haemorrhage is commoner in multiparae. It is possibly because multiparous pregnancies are much commoner.

Anaemia with Pregnancy

For so long anaemia was the commonest cause of maternal death in our country. With gradual improvement of socio-economic factor and organisation of antenatal care the incidence is gradually coming down. Even so the incidence is very high. In this group it is 1.4 per cent. In anaemic mothers labour is usually premature. Although with the reduction of the severity of anaemia the maternal death rate has come down, premature births still hold the high toll of neonatal death rate.

Labour and its Complications

In 91.7 per cent of cases the labour was normal. The duration of labour varied from 4 to 14 hours. In two of the cases labour was short of precipitate labour. As there was no injury either to the mother or to the baby these have been grouped under normal labour. One remarkable feature was noticed, once the cervix dilated and the head came in touch with the pelvic floor the next part of labour was very easy. Episiotomy was performed in all cases of breech deliveries and also where episiotomy had been done previously. The incidence of abnormal labour was 8.2 per cent, requiring some sort of interference. Uterine inertia was remarkably absent in the present series.

Disproportion and Abnormal Presentations

Abnormal presentations are the commonest abnormality in our series and in Feeny's series it is the second commonest occurrence. In Barns' series abnormal lie is the commonest. The cause of the malpresentation possibly is related to anteflexion of the gravid uterus, due to the lax and pendulous abdomen, the consequence of excessive child-bearing. A further factor, may be compensatory lordosis with high pelvic inclination. High inclination of the pelvic brim produced by lumbar lordosis will favour a slow start of labour and late engagement of head. Backward rotation of the occiput may occur due to deflexion of foetal head caused by the foetal spine lying against the projecting maternal spine.

It is still held widely that the abnormality most characteristic of the grande multipara is a contracted pelvis. It is difficult to understand how a patient with a well formed pelvis and with a good obstetric history can develop an abnormality. In Bryan Williams' (1947) series there was clinical evidence of a small inlet or cavity in 9 cases. In his series X'ray pelvimetry shows one case with normal measurements, 3 cases of slight contraction, 2 cases of moderate contraction and 2 cases of severe contraction.

In our series X'ray was not done and external measurements did not

TABLE IV

Incidence of Rupture of the Uterus

Authors	Period	No. of deliveries	No.	Rupture	Spontaneous				Traumatic	
				Incidence	Due to caesarean section scar		Due to other causes			
					No.	Percent	No.	Percent	No.	Percent
Sheldon	1918-34	47,554	26	1:1829	5	19.2	4	15.3	17	65.4
Morrison and Doglus	1920-43	65,916	45	1:1465	17	37.7	5	11.1	23	51.2
Delfs and Eastman	1920-45	53,574	53	1:1010	10	18.8	17	32.1	26	49.1
Bell, Barney and Melody	1925-41	69,391	23	1:2756	13	56.6	2	8.7	8	34.7
Dugger	1931-41	3,18,103	105	1:3029	34	32.2	26	25.1	45	42.6
Brierton	1932-46	1,11,753	57	1:1961	26	45.6	21	36.8	10	17.6
Present series	1952-53	1,068	10	9:1000	1	00.09	8	00.7	1	00.09

reveal any abnormality. Past history of 8 cases suggested the presence of contracted pelvis from the beginning of the patient's child-bearing life. In 6 cases the patients were admitted with obstructed labour and the baby was dead.

Aetiology of Pelvic Contraction

It is said by many authors, that minor degrees of osteomalacia occur in Great Britain. Leyland Robinson states, "although true osteomalacia is rare in this country, there are minor grades of disturbance which escape recognition."

Browne (1942) states, "in the depressed industrial areas of England and Wales it is probable that minor degrees of this disease are more common than is generally supposed."

Bryan Williams found only one case admitted in the Walton Hospital in 10 year period.

In spite of these views, however, there is little evidence about the occurrence of mild form of osteomalacia. The aetiological factors responsible for the development of osteomalacia are supposed to be deficiency of calcium, phosphorus and vitamin D.

Dutt (1936), in our part of the world, says mild forms are common and difficult to diagnose and that they may give more trouble than established cases.

Preston Maxwell gives details of the Chinese diet in cases suffering from osteomalacia and it seems probable diet may be the causative factor.

Tronssean (quoted by Balmer) who first called osteomalacia in 1868 the "rickets of the adults" said that there exists in pregnant women a kind of rickets of which osteomalacia may be considered a more advanced degree. All this evidence seems to support the view that a mild form of osteomalacia does occur in Britain and produce pelvic contraction and difficult labour.

In India, we find a belt of osteomalacia running through certain areas, as, United Provinces, Central Province, Punjab and Delhi. The purdah system leading to lack of sunshine has been blamed, although there is excess of sunshine in these parts. Over and above, we have found pelvic contraction in multiparous women who work in the field in broad sunshine. In this series cases have been presented, mostly from West Bengal where osteomalacia is not prevalent.

One striking feature is that, the cases which gave rise to difficulty come from depressed social class. In none of these cases gross pelvic abnormality recognisable by clinical examination could be found out.

Rupture of the Uterus

Rupture of the uterus is the most dangerous complication amongst the grande multipara group. It occurs once in 1500 deliveries, but in our series it is very high, 9 per thousand. The incidence apparently looks very high, but if it is reckoned against total population, even amongst total deliveries, it would be much less. In our country there is no zonal system of calculation.

The incidence of rupture of the uterus increases with parity. It is difficult to explain why this should

TABLE V.

England and Wales: 1946 to 1949

Number of Previous Children.

Total	0	1	2	3	4	5	6	7	8	9	10	11
1.13	1.18	1.84	1.05	1.30	1.61	2.06	1.80	2.20	2.0	3.11	3.34	5.08

Maternal mortality rates per thousand confinements (Own series 1952-53).

Number of Previous Children.

Total	0	1	2	3	4	5	6	7	8	9	10 & over
7.5	—	11.5	1.8	0.4	1.6	5.6	3.7	7.4	3.7	6.4	6.6

TABLE VI

Still-birth Rates per Thousand Total Births in Higher Parity Groups. All booked cases. Aberdeen Maternity Hospital, 1938-1951.

Parity	4 to 6		7 & above	
Cases at risk	2,466		597	
	Cases	Rates	Cases	Rates
1. Mature, causes unknown ..	10	4.1	3	5.0
2. Trauma & Asphyxia ..	10	4.0	9	15.1
3. Premature, cause unknown ..	25	10.1	6	10.1
4. Toxaemia ..	7	2.8	3	5.0
5. Antepartum haemorrhage ..	18	7.3	10	16.8
6. Deformity ..	12	4.9	5	8.4
7. Maternal diseases ..	6	2.4	4	6.7
8. All others ..	11	4.5	2	3.4

Still-birth rates per 100 births among grande multiparae groups. (Own series)

Total Confinements: 1068 (1952-1953)

Total number of Still-births: 74.

Parity	7		8		9		10		11 & over	
No. of cases	353		227		183		137		168	
	Cases	Per cent	Cases	Per cent	Cases	Per cent	Cases	Per cent	Cases	Per cent
1. Unknown causes	3	.8	5	2.2	4	2.1	8	5.8	7	4.1
2. Antepartum haemorrhage	2	.5	1	.4	4	2.1	0	0	4	2.3
3. Toxaemia	1	.2	2	.8	1	.5	0	0	2	1.2
4. Deformity	0	0	2	.8	1	.5	2	1.4	4	2.3
5. All others	4	1.1	6	2.4	4	2.1	6	4.3	1	1.6
Total cases	10	2.6	16	6.6	14	7.6	16	11.5	18	11.5

occur. This is probably because the uterine wall becomes thinned due to repeated child bearing. In the present series all the ruptures were during labour and spontaneous excepting in one case where the uterus was ruptured during performance of internal podalic version. Once there was rupture of a classical caesarean scar; there was no rupture in lower segment caesarean cases. In none of our cases was there a previous history of uterine injury or operation except one. All these followed obstructed labour.

Post-partum Haemorrhage

In the present series there were 33 cases of post-partum haemorrhage.

Robinson (1930) and Bethel Solomons (1934) stressed the tendency of these patients to bleed after delivery. Very recently Krebs (1956) mentioned in his paper that the incidence of post-partum haemorrhage in grande multiparity was a rarer complication. This might be due to prophylactic use of oxytocics. The definite cause in these cases is difficult to explain. The haemorrhages are mostly from the atonic uterus. At one time it was thought that calcium lack in consequence of repeated child bearing produces defective coagulation. This argument is no longer tenable.

A more likely explanation is the impairment of the action of the uterus from excessive and repeated child-bearing, over-distention of the uterus from overweight babies and also twin pregnancies delaying proper retraction of the uterus.

From 1954 prophylactic oxytocics are being used judiciously, particularly in these groups of cases and the incidence of post-partum haemorrhage has become less and less.

Maternal Mortality

Maternal mortality increases rapidly with higher parity. Bethel Solomons and Bryan Williams stressed that maternal mortality increases with higher parity. Eastman found mortality rate increases far more steeply from the ninth pregnancy onwards.

In the year 1940 to 1945 in England and Wales maternal mortality was 2.48 per thousand in primigravidae and then fell for the next three or four pregnancies. The curve however rose after the fifth, until at or over ten pregnancies it reached the figure of 6.33 per thousand.

To come to more recent statistics maternal mortality rates of married women per thousand legitimate births according to the number of previous children are illustrative.

Our series remarkably differs from the above mentioned series. In this the primipara gives the highest mortality rate. This is due to the higher incidence of eclampsia, pre-eclamptic toxaemia of pregnancy and anaemia of pregnancy. Our highest mortality besides primiparae is in groups of tenth para and over. In this group the main causes of death were rupture of the uterus, post-

partum haemorrhage and severe anaemia.

Perinatal Mortality

With the increment of parity, particularly from the 5th pregnancy onwards, the foetal and neonatal death rate also increases. This fact has been stressed by various authors. Eastman has emphasised the use of contraceptives to prevent higher foetal and maternal deaths in grande multiparae. He has gone as far as advocating ligation of the tubes.

In the present series there were 74 still-births and 26 neonatal deaths.

Our series shows that the foetal death rate increases with the increment of parity, the unknown group being the maximum.

In the neonatal death rate series of 18 cases we could not find out the causes, but in other 8 cases prematurity, intractable diarrhoea and intra-cranial haemorrhage were the main causes.

Summary

All the available papers have been discussed and the findings of other authors have been compared with the present series. In this series breech is the most common abnormal presentation. Incidence of anemia is very high, although less than in primigravid patients. There were 10 cases of ruptured uterus. Incidence of post-partum haemorrhage is very high. The incidence of placenta previa is greater than accidental haemorrhage. Disproportion was elicited in 18 cases.

series but less than in primigravidae.

Maternal mortality is higher in grande multiparae in the present

Perinatal mortality is very high.

Conclusion

1. It is evident from this paper, a grande multipara does not represent an easy obstetrical case, but one which require utmost alertness and judgement.

2. Serious complications, like rupture of the uterus, antepartum haemorrhage and post-partum haemorrhage, are commoner in grande multiparous groups. Rupture of the uterus is uncommon amongst primigravidae.

3. Considering the various complications that the grande parae may develop, all patients should be confined in the Hospital with ready availability of blood.

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