OBSTETRICAL COMPLICATIONS IN THE GRANDE MULTIPARA

P. G. Roose, B.Sc., M.B., Ch.B., *Registrar, Department of Obstetrics and Gynaecology, University of Cape Town and Cape Provincial Administration*

All too frequently the impression is held that a primigravid patient will experience a difficult delivery as opposed to the multipara, who has 'done it before'. Pregnancy, however, is one exception where practice does not make perfect. Moreover, the multipara is probably more important to the community; she is the more skilled housekeeper, she is the mother of more children and it may be taken as an axiom that mothers cannot be replaced. When Solomons[11] referred to multiparae as 'dangerous' he was not exaggerating. That is borne out by this study, which is a review of 551 grande multiparous patients, constituting the total number of such patients admitted to the obstetrical units of the University of Cape Town during the year 1958. For this purpose the term 'grande multipara' is defined as a multiparous woman who has had 8 or more viable gestations.

A comparison has been made with the incidence of complications in the remainder of the patients attended to at the same obstetrical units over the same period of time and under the same obstetrical management, viz. those who have had 7 or less viable gestations.

ANALYSIS OF CASES

During the year 1958 the total number of deliveries reviewed was 7,684 and, of these, 551 were grande multiparae, which gives an incidence of 7·17%. Of the 551, 74·6% were 'booked' cases, i.e. had received antenatal care at the clinics. However, the antenatal care in some cases was inadequate owing to default on the part of the patients.

Patients attended to included both Whites and non-Whites, the latter being further divided into Malay, Coloured and Bantu. In the studied series the distribution was: Coloured 64%, Malay 16%, Bantu 14%, White 6%. As it is as yet not possible for most non-White maternity patients to be treated in private hospitals, the majority of cases in whom obstetrical

complications requiring admission to hospital have arisen are seen in this unit.

Parity, age distribution and weight distribution are outlined in Table I. The youngest patient in the group was 24 years old,

TABLE I. PARITY AND AGE DISTRIBUTION AND WEIGHT IN 551 GRANDE MULTIPARAE

Age (years)	22–25	26–30	31–35	36–40	41–45	46–50
%	0·2	11·4	28·2	38·1	18·5	3·6
Parity (Number)	8	9	10	11	12	13–19
%	31	23	19·	8	8	11
Weight (lb.)	90–100	101–150	151–175	176–200	201–250	251+
%	0·5	45	27	15·5	10·25	1·75

and the oldest 50 years. The highest parity was 19 in a 43-year-old patient. The weights of the patients varied from 90 lb. to 344 lb. (Only 411 of the group had their weights recorded. The others were all admitted as 'emergencies'.)

The significant frequency of the occurrence of complications in grande multiparous patients is shown and compared with the other patients in Table II.

TABLE II. COMPARATIVE STATISTICS OF MATERNAL COMPLICATIONS

	551 Grande Multiparae		*7,133 Remaining Patients*	
	No.	*%*	*No.*	*%*
Hypertension of unknown aetiology	168	30·5	716	10
Eclampsia	6	1·1	29	0·4
Antepartum haemorrhage				
Abruptio placentae	57	10·3	169	2·3
Placenta praevia	17	3·9	63	0·88
Postpartum haemorrhage	53	9·6	419	5·9
Abnormal presentations				
Breech	44	8	206	2·9
Transverse, face, brow	12	2·2	60	0·8
Twins	22	4	108	1·5
Prolapse of the cord	12	2·2	51	0·71
Caesarean section	48	8·7	372	5·2
Maternal death	1	0·18	3	0·06

Hypertension

'Hypertension of unknown aetiology' included all cases whose blood pressure was 140/90 mm. Hg or more, with or without albuminuria. It was not always possible to distinguish a case of pre-eclampsia from one of essential hypertension, and likewise it was not possible to ascertain whether or not a patient with essential hypertension had superimposed pre-eclampsia. There were 2 cases with albuminuria only and 1 with gross oedema only. These were not included in this group. From the raised incidence shown in Table II, it appears that grande multiparity is a factor in the toxaemias of late pregnancy. However, it must be borne in mind that pre-existing hypertension occurs more commonly with grande multiparity. Age and obesity as well as parity are probable associated factors in this increased incidence; the correlation is shown in Table III, which demonstrates the steadily in-

TABLE III. TOXAEMIA/HYPERTENSION IN THE 551 GRANDE MULTIPARAE RELATED TO AGE AND WEIGHT

Age (years)	Under 31	31–35	36–40	41+
% Hypertension	19·6	23·1	28·5	48·3
Weight (lb.)	100–150	151–175	176–200	200+
% Hypertension	16·1	29·6	30·6	48

creasing incidence of hypertension as age and weight increase. There were 6 cases of eclampsia in the studied group. Peckham[9] stated that, while pre-eclampsia increased with parity, eclampsia was predominantly a disease of primiparity.

Antepartum haemorrhage. The incidence of *abruptio placentae* was significantly high in the grande multiparae—10·3% as compared with 2·3% in the remaining group. Of these cases, 35% were associated with toxaemia or hypertension and 28% resulted in stillbirth. The only 3 cases in the grande multiparous series who developed hypofibrinogenaemia did so as the result of abruptio placentae. As expected, the incidence of *placenta praevia* was about 4½ times as great in the grande multiparae as in the remainder. Peckham[9] found that this complication increased directly with parity. Cases included in this group were only those proved on antepartum examination or by Caesarean section to be placenta praevia. The foetal mortality rate here was 25%.

Postpartum haemorrhage. This was defined as 20 oz. or more. Of the 53 cases in the multiparous group, only 5 were caused by retained placentae; 9 followed on a severe accidental antepartum haemorrhage; 21 (or 40%) of the cases occurred in patients with hypertension. There are a number of theories to account for the high incidence of postpartum haemorrhage in grande multiparae, e.g. lack of calcium through frequent child-bearing, causing poor coagulability and poor muscle contractability; impaired action of the myometrium due to aging, scarring and exhaustion; arteriosclerotic changes in the uterine blood vessels, which therefore do not seal off effectively.

Malpresentations. Various authors have shown some differences in the incidence of specific complications. Schram[10] found no increase in malpresentations in his review of grande multiparae. In contrast, Peckham[9] showed that transverse lie was 10 times as common in the para-10 as in the primigravida. In this present series the increase of malpresentations generally was found to be about threefold. Breech presentations in grande multiparae were 8% as compared with 2·9% in the others, while transverse, face and brow presentations taken together were found to be 2·2% as compared with 0·8%. There was no significant increase in the incidence of cases delivered in the occipito-posterior position, which was 3% amongst the grande multiparae and 2·4% amongst the others.

Prolapse of the cord. This was encountered 3 times more frequently in the studied group, which corresponds very closely to the incidence, and increased incidence, of malpresentation. The foetal mortality in the cases with prolapse was 33·3%.

Prolonged labour. The number of previous labours is no absolute indication that the duration will be shorter in a multiparous patient, but there is a trend in that direction. Of the grande multiparae 3% had prolonged labours, i.e. 48 hours or more. An analysis of the duration of labour is given in Table IV. Of the 16 cases of prolonged labour, 10

TABLE IV. DURATION OF LABOUR IN 551 GRANDE MULTIPARAE

Hours	Up to 6	6–12	12–18	18–24	24–48	48+
%	34	29	16	10	8	3

were due to uterine inertia, all with large babies; 3 were due to persistent occipito-posterior positions; 1 was a breech presentation; 1 developed a Couvelaire uterus after abruptio placentae: and 1 had a ruptured uterus with a baby weighing 10 lb. 4 oz. Oxorn[8] found that 10% of grade multiparae had labours lasting longer than 18 hours and this, he says, supports the opinion of Jeffcoate[4] that uterine inertia is mainly a problem of primigravidae.

Ruptured uterus. This is a very real and dangerous complication amongst grande multiparae. There were 5 cases in the series, 4 of whom had Caesarean hysterectomies and 1 was repaired. Of these, 1 was a spontaneous rupture diagnosed as such, one was found coincidentally when a Caesarean section was to be performed for prolonged labour and foetal distress, 1 was found at Caesarean section for disproportion, 1 was a

partial rupture in a case of obstructed labour and failed forceps, 1 was a rupture which occurred during labour following previous Caesarean section. The high incidence of rupture suggests that the uteri of grande multiparae have undergone some changes which predispose them to this accident. Microscopic sections of the uterus show the myometrium largely replaced by hyalinized involuted blood vessels, the myometrium surrounding which contains little elastic tissue.[8] Eastman[2] states that in grande multiparae the myometrium is probably weakened and may be liable to rupture during subsequent pregnancies. There have probably been small tears in the myometrium during previous labours, leaving weak spots. The abnormal stress of labour associated with malpresentations or large babies would appear particularly hazardous.

Cardiac lesions. It is interesting to note that there were 10 patients with cardiac lesions in the series. They were delivered of viable infants and were all discharged with no apparent detrimental cardiac effects resulting from pregnancy. Only one patient developed gross cardiac failure before delivery, but after the birth of a 5-lb. live baby her condition improved rapidly. This, however, is not stated in order to encourage grande multiparity in cardiac patients!

OPERATIVE INTERFERENCE

Forceps

The small number of forceps deliveries was remarkable. These comprised only 2% of the studied group, whereas of the comparison group they comprised 5·2%. Of the latter, 65% were primiparous patients. From the figures it appears that when obstetrical surgery is required in grande multiparae it is of a major type.

Caesarean Section

The incidence of Caesarean section was high; amongst the grande multiparae it was 8·7%, the comparison group showing an incidence of 5·2%. The following is a list of indications:

	Cases
Placenta praevia	15
Cephalo-pelvic disproportion	11
Toxaemia	6
Previous Caesarean section	4
Diabetes	3
Incoordinate uterine action	2
Malpresentation	2
Prolapse of the cord	2
Abruptio placentae	1
Foetal distress	1
Previous colpoperineorrhaphy with amputation of the cervix	1

Only one classical section was done, the rest being lower-uterine-segment operations. Excluding the repeat sections the incidence was 8%. It is interesting to note how multiparity is no guarantee against disproportion, as shown by the 11 sections performed for this reason. Skill is required for suspecting and diagnosing disproportion in grande multiparae. Any variation from the normal should be regarded with adequate suspicion. Previous Caesarean operations had been performed in 13 cases, in only 4 of which it was necessary to repeat the operation. The incidence of Caesarean section found by other authors varies somewhat. Barnes[1] reported one of the highest rates, viz. 6·2%. Peckham[9] found that operative deliveries were highest in primigravidae; thereafter the incidence decreased to a minimum in para-4 and -5, whence it rose once more but, he says, never as high again as in primigravidae.

Caesarean hysterectomy was performed in 6 cases, the indications being as follows:

	Cases	
Ruptured uterus	4	(see above)
Couvelaire uterus	1	
Placenta accreta in the presence of pre-eclampsia	1	

MATERNAL MORTALITY

Only one maternal death occurred in this series of studied grande multiparae—an incidence of 0·18%. The corresponding incidence in the comparison group was 0·06%. Figures given by various authors differ. Nelson and Sandmeyer[7] found a maternal mortality of 0·1%, Miller[6] 0·17%, Schram[10] 0·2%, Eastman[2] 0·42%, Peckham[9] 0·42%, Krebs[5] 0·68%, Oxorn[8] 0·9%. Eastman[2] found that in para 1-5 the mortality ranged from 0·35%-0·37% but rose to 1·17% in para-9. The effect of increasing parity on maternal mortality rises abruptly from the 8th parity.

Table V shows an analysis of maternal mortality related to age and parity as shown in statistics of 1940.[12]

TABLE V. MATERNAL DEATH RATE PER 10,000 DELIVERIES BY AGE AND PARITY *

	Under 20	*20–24*	*25–29*	*30–34*	*35–39*	*40+*	*Total*
Para 8+	—	—	48·1	42·5	59·3	62·9	55·1
Para 2–7	9·5	11·0	21·3	26·5	44·4	69·5	25·9
Para 1	16·8	21·4	27·2	57·1	95·3	174·3	28·2

* Adapted from Yerushalmy *et al.*[11] and based on 255,727 deliveries.

Oxorn,[8] following the maternal death rate in grande multiparae, noted the marked reduction in incidence during the years 1943-1952. This he attributed to better antenatal care, the use of antibiotics, and the availability of blood for transfusion.

FOETAL STATISTICS

Large babies. Nelson and Sandmeyer[7] found a significant increase in the proportion of large babies amongst those born of grande multiparae. This finding is confirmed in Table VI, which shows an analysis of infant weights in the present studied group. A similar analysis in the comparison group was not done.

TABLE VI. WEIGHT DISTRIBUTION OF INFANTS OF GRANDE MULTIPAROUS MOTHERS

Weight (lb.)	Under 5½	5½–8	8–10	10+
%	16	54	26	4

Prematurity. There was an incidence of 16% in the studied group as compared with 8·4% in the others—a significant increase.

Stillbirths. The stillbirth rate in the grande multiparous group was markedly higher, viz. 7·9% as compared with 2·9% in the others. These figures conform with those of Eastman,[2] who found the stillbirth rate with the 9th pregnancy and above to be more than twice that in the lower pregnancy brackets. The likelihood of neonatal deaths with the 9th confinement and later is also substantially greater than with any previous one.

CONCLUSION

The grande multipara is frequently an obese, overtired, hypertensive woman who has borne more than her fair share

of children and their burdens. Because of the dangers she faces, Matthews G. Duncan in 1865 stated that such a woman may become a threat to herself and her unborn child. She is older than her sister who has borne but one or two children and apart from her pregnancies she also suffers the infirmities of her age. The greatest care is required in attending such a patient. The sense of false security into which both the patient and the doctor may so easily be lulled is great. It is most important that the accoucheur should recognize the potential hazards in these cases and deal with them with the alertness and judgment they demand. Delivery should be undertaken in a hospital. After regular antenatal care the patient should be told to come in to hospital immediately labour begins so as to give the accoucheur ample time for final assessment. Treatment of hypertension should be active and prompt. Haemorrhage in these patients should be treated vigorously long before there is any deterioration in condition, for they are unable to combat shock well. For this reason it is advisable to treat antenatal anaemia when it is first detected so that the patient may be as fit as possible by the time she is due for delivery. Should disproportion be diagnosed, it is probably far less hazardous to subject the patient to a Caesarean section than to adopt an expectant approach which might result in a ruptured uterus.

Grande multiparae should receive special instruction about contraception; in fact Eastman[2] goes a stage further when, because of the high maternal and foetal mortality and the social importance of the mother of a large family, he even advises sterilization. However, George and Power[3] do not accept grande multiparity as an indication for such a radical procedure.

More important is the need for every obstetrician to realize that the grande multipara is not an easy patient, and that thorough understanding, alertness and judgment on his part will make the fate of these patients far happier and less hazardous.

SUMMARY

A series of 551 cases of grande multiparity has been reviewed. The comparative incidence of obstetrical complications has been quoted and the increased maternal and foetal hazards studied. The total incidence of complications is considerably higher than in patients of lower parity.

No details of treatment have been given but broad principles in the care of such patients have been suggested.

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