PREGNANCY AND LABOR IN THE ELDERLY PRIMIPARA

A Study of Over 300 Cases

By James K. Quigley, M.D., Rochester, N. Y.

IT IS hard to understand why childbearing in the elderly primipara has been thought to be so very difficult and so fraught with dire consequences. This opinion prevails quite generally in the medical profession and is shared also by the laity, particularly by the parturient. Yet most of those who have written upon the subject believe, as I shall attempt to prove in this brief presentation, that not only is there little added risk to the mother bearing her first child after thirty years of age, but that the fetal mortality is no higher than that generally encountered.

Few textbooks discuss the subject, possibly because, in the opinion of their authors, labor differs so little in primiparae, young and old, as not to deserve special consideration. Williams[1] says, "Labor is usually more prolonged in elderly than young primiparae, that is after the thirtieth year." According to Ahlfeld it averages seven hours longer in the former though Varnier states that the difference is very much less. At the same time the latter author points out that forceps are much more frequently required in old primiparae.

DeLee[2] says "The best years for women to bear children are from eighteen to twenty-five. With added years the function of childbearing is attended with increasing difficulties although these are all exaggerated in the popular mind. In general it may be said that in older women the pregnancy disorders—hyperemesis, abortion and premature labor—are more frequent. Contracted pelves, usually the justo minor, the infantile or the masculine types, are oftener met. Labor is longer in all three stages, premature rupture of the membranes, cervical and perineal rigidity are more common—indeed the soft parts may be so inelastic that they tear in all directions like old rubber, when stretched. Face, breech and shoulder presentations, occiput posterior positions and deep transverse arrest, are more frequent while the action of the uterus may leave much more to be desired etc., etc. All these retard labor and necessitate frequent recourse to forceps. They increase the danger to mother and child; for the one, lacerations and infections; for the other cerebral injury and death from asphyxia. Postpartum hemorrhage from lacerations and uterine atony have also been noted. Nursing is less likely to be adequate."

This rather gloomy view of the situation is not held by Berkeley and Bonny.[3] "In our experience the course of pregnancy in a woman over thirty years of age differs but little from that in one under thirty. At most the labor is a little prolonged and necessity for operative delivery is rather more frequent."

The percentage of elderly primiparae seen in private practice is much greater than in public ward service. There are several probable reasons why this is so. First, private patients at this age are more apt to be in better financial condition. Second, the generally considered opinion that labor in this class of patients is very apt to

be difficult induces the patient to seek the services of a private physician, usually an obstetrician. Third, early marriages are more common among the less well-to-do. The incidence as found in this series was 234 in 2200 deliveries in my private patients or 10.5 per cent, as against 70 in 4106 ward patients or 1.7 per cent.

Age Grouping.—Rather than consider each age separately I have divided them into three age groups; viz., thirty to thirty-four inclusive, thirty-five to thirty-nine inclusive and those forty years and older. (Table I.)

TABLE I. AGE GROUPING

PRIVATE PATIENTS																	
Age	30	31	32	33	34	35	36	37	38	39	40	41	42	43			
Number of cases	47	34	24	24	21	21	14	18	13	4	8	3	2	4			
Group totals			148					69					17				
WARD PATIENTS																	
Age	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
Number of cases	18	11	6	7	8	5	1	1	2	4	3	1		1	1		1
Group totals			50					13						7			

The number of cases included in the forty and over group is not large enough to consider seriously as a group, but the first two groups are worthy of consideration and the findings in the entire series are significant, particularly if they coincide with those of others who have written upon this subject. The available data concerning my private cases were more detailed than in the public ward cases, so a comparison of the two series is possible only in certain features.

Sex of the Children.—The sex of the children showed a preponderance to the male, 137 to 109; this is similar to Ahlfeld's estimate of 137 to 100 and Hecker's 133 to 100 in elderly primiparae.

Twin Pregnancies.—A greater frequency of twin pregnancies has been attributed to the elderly primiparae. Prinzing gives an incidence of 4.14 per cent (quoted from Spain[4]). "One to every 44 in elderly primipara as compared to 1 in every 224 before thirty" (quoted from Freeland[5]). In this series there were 3, or 1 to 101.

COURSE OF PREGNANCY IN ELDERLY PRIMIPARAE

Toxemia.—Nausea and vomiting and late toxemia of pregnancy are said to occur more often in primiparae over thirty. Of 232 women in this series 108 had no nausea or vomiting, 109 had slight disturbance from this complaint, usually of the morning type only, while 15 suffered to a moderate degree. There were no cases of true hyperemesis and none requiring hospitalization.

Of late toxemia there were one fulminating eclampsia at six months, 7 preeclamptics, 6 cases of moderate severity, and 22 mild cases.

Nausea and Vomiting		*Toxemia*	
None	108 or 46.5 per cent	Mild	22 or 9.0 per cent
Mild	109 or 46.9 per cent	Moderate	6 or 2.5 per cent
Moderate	15 or 6.8 per cent	Preeclamptic	7 or 3.0 per cent
Hyperemesis	0 or 0.0 per cent	Eclampsia	1 or 4.0 per cent

These findings are similar to those of Schulze.[6] The percentage of nausea and vomiting differs little from the general average for all ages, including multiparae; the rate for toxemia, mild and severe, is probably considerably higher; nephritic toxemia, which was included in this series, might account for the higher incidence in older women.

Abortions and Premature Labors.—Interruptions of pregnancy, according to Williams, are more frequent in old primiparae. I do not believe this to be true of this group, for only 20 of the 234, or 8½ per cent, had had early abortions. There were 28 premature labors in this series due largely to toxemia of pregnancy; neither is this incidence of 1 to 11.7 much above the average.

Syphilis.—One patient gave a 4+ Wassermann test and only on going into her history very carefully was it found that she had had interstitial keratitis at the age of twelve, a symptom of congenital infection.

Fibromyomas of the Uterus.—There were only 9 cases in which fibroids were discovered. In 3 the growth was so extensive as to preclude pelvic delivery, and in another while the tumor was not sufficiently large to obstruct, we believed, after a thirty-hour labor, that the uterine musculature was so involved by multiple small fibroids as to prevent cervical dilatation and retraction; these 4 patients were delivered by abdominal section. In the remaining 5 the fibroids were no factor in pregnancy or labor. Fibroids are more common in the primiparae over thirty than in the young primiparae, but no more common than in multiparae over thirty.

Induction of Labor.—Thirty-seven patients responded to simple induction by quinine and castor oil. I believe that labor in these cases was shorter and there was less dystocia than in the labors which started spontaneously. The longest labor was twenty-six hours and thirty minutes, and the shortest was three hours and fifteen minutes, the average being eleven hours forty-five minutes. There were 5 bag inductions, 3 for toxemia of pregnancy, 1 for dry labor with inertia, and 1 in premature macerated fetus (placental infarction). I use the hydrostatic bag to induce premature labor less frequently than formerly in primiparae, because of the uncertainty of its action; furthermore, the infant mortality of labor induced by hydrostatic bags is higher than in spontaneous labor. For these two reasons I do not agree with Spain who suggested routine induction of labor by the hydrostatic bag at the thirty-sixth week in elderly primiparae. Induction by quinine and oil alone or by the Watson method at estimated full term has a distinct place in the management of primiparae, whether young or old.

Contracted Pelves.—Pelvic contraction, particularly of the male or funnel type, is said to be more common in old than in young primiparae. Of the 234 private patients there were 16 with flat pelves, 4 justo minor, and 6 of the funnel type, a total of 26 or 11 per cent.

TABLE II. PRESENTATION AND POSITION

	30-34	35-39	40-46	TOTAL	
Vertex					
L.O.A.	89	46	15	150 – 48.8 %	93.1%
R.O.P.	45	14	3	62 – 20.0 %	
R.O.A.	39	14	3	56 – 18.2 %	
L.O.P.	13	5	1	19 – 6.1 %	
Brow	2	0	0	2 – 0.65%	
Face	1	0	0	1 – 0.32%	
Breech	11	4	2	17 – 5.33%	
Total				307	

Malpresentations and malpositions are supposed to be more frequent in elderly primiparae. In Table II it will be seen that vertex presentations comprised 93.1 per cent of the total as against an estimate of 95 per cent for all cases (Karl Braun 48,449 cases, Schroeder 250,000 cases); a slight decrease in vertex presentations compensated for by an increase in the breech, 5.33 per cent for this series as against 2.7 per cent to 3.11 per cent (Braun, Schroeder). The rate for face presentation is the same as given by these authorities for all cases. Of the vertex presentations there is an increase in L.O.P. positions of 6.1 per cent against 1 per cent, with a probable slight increase in R.O.P. The large percentage of R.O.A. positions is due to the fact that diagnosis of position was made by the house officer at the end of labor rather than at the beginning in the ward cases. In short, the differences in this small series are: an increase in breech presentation of from 3 to 6 per cent and an estimated increase in posterior position of the occiput of 10 per cent.

TABLE III. LENGTH OF LABOR

	30-34	35-39	40-46	ENTIRE SERIES ALL AGES
PRIVATE CASES—207				
Shortest labor	2 hr.	2 hr., 40 min.	7 hr.	2 hr.
Longest labor	51 hr.	48 hr.	26 hr.	51 hr.
Average	15 hr., 24 min.	14 hr., 54 min.	17 hr., 6 min.	15 hr., 20 min.
Spontaneous deliveries no prematures	10 hr., 16 min.	11 hr., 30 min.	15 hr., 54 min.	11 hr., 0 min.
WARD CASES—62				
Shortest labor	5 hr., 35 min.	4 hr.	8 hr.	4 hr.
Longest labor	65 hr.	24 hr., 15 min.	17 hr.	65 hr.
Average	20 hr., 45 min.	16 hr.	11 hr.	19 hr., 12 min.
Spontaneous deliveries no prematures	14 hr., 46 min.	16 hr., 40 min.	12 hr., 28 min.	15 hr., 6 min.

It is in this table of length of labor in elderly primiparae that the surprises are found. I say surprises, for it is generally thought that these labors are unusually long. Eighteen hours are a fair estimate of the length of labor in all primiparae. The average of all cases, in this series, cesarean sections excluded, in the private group is fifteen and one-third hours. Lest it be thought unfair to include aided deliveries (forceps and versions) the duration of labor in the patients delivering spontaneously, excluding premature labors, was still lower; viz., eleven hours. In the ward service a much more conservative policy was pursued and the averages were respectively nineteen and fifteen hours. Edgar[7] reported an average of fifteen hours and forty-five minutes in 30 spontaneous deliveries, and the Tarnier clinic reported seventeen and one-half hours for 111 elderly primiparae. Not infrequently labors are unusually short in primiparae between the ages of thirty and forty; for instance, in the age thirty-six group there were 4 labors totaling only twenty-one and one-quarter hours, an average of five and one-third hours. All were mature infants and all were unaided deliveries. One woman of forty delivered herself of a full-term child in eight and one-quarter hours.

TABLE IV. MODE OF DELIVERY OF 307 BABIES IN PRIVATE AND WARD PRACTICE

	30-34	35-39	40-46	TOTAL
Spontaneous	73 – 36.5%	29 – 35.3%	6 – 25.0%	108 – 35.1%
Forceps				
Low	37 – 18.5%	16 – 19.5%	7 – 29.0%	60 – 19.5%
Mid	62 – 31.0%	17 – 20.7%	6 – 25.0%	85 – 24.4%
High	4 – 2.0%	3 – 3.6%	0 – 0	7 – 2.2%
Cesarean section	13 – 6.5%	17 – 20.7%	5 – 20.8%	35 – 11.4%
Version	6 – 3.0%	0 – 0	0 – 0	6 – 1.9%
Breech delivery	5 – 2.5%	0 – 0	0 – 0	5 – 1.6%

It will be noted that there is a high percentage of forceps deliveries in this report; few of these were difficult, and for the most part were low or low-mid application which were done after it was noted that there was lack of progress after at least two hours in the second stage. My impression is that the characteristics of labor in an elderly primipara are a fairly short, satisfactory first stage, usually with delay in the second stage due either to a thick muscular perineum, or what is more common, to secondary inertia and sometimes to a combination of both. In some instances delivery by forceps was called for because of threatened fetal asphyxia.

Version was done but six times and then for special indications, such as brow presentation, lack of progress after a long time in a posterior occiput where delivery was demanded and cesarean section contraindicated, and in placenta previa.

High Forceps.—Forceps were applied to the unengaged head seven

times; in each case version and abdominal delivery were contraindicated. The fetal mortality of 4 cases or 57 per cent rightly condemns the procedure.

Cesarean Section.—Eleven per cent seems a rather high incidence of abdominal deliveries and yet I have heard the opinion expressed that every primipara over thirty-three or thirty-five years old should be so delivered as an elective measure. Eighteen of these cesarean sections were done only after a test of from eight to fifty-three hours of labor. Of the private case group there were only 9 abdominal deliveries done without a test of labor, as follows:

4 Purely elective	2 Preeclamptic toxemias 2 Funnel pelves
5 After labor had begun	2 Flat pelves 1 Extensive fibroid 1 Cardiac (pulmonary stenosis) 1 Funnel pelvis

Eighteen patients had trial labors of from eight to fifty-three hours, and most of them were real tests of labor; in each case the head remained high and the competing procedures were high forceps, version, pubiotomy and cesarean section. The exceptions to this were: threatened fetal asphyxia in a woman of thirty-eight for whom I am sure the choice of delivery made possible the birth of a living child, twin pregnancy in a toxic mother with premature separation of the placenta, large fibroids low in the uterus in two patients and small multiple growths in one, and primary inertia after thirty-six hours of labor in a woman who had had four spontaneous abortions. There were three cases of flat pelves, one justo minor, and one funnel pelvis; one case of disproportion due to postmaturity. It is only in the remaining six cases where definite indications were lacking that it might be said that elderly primiparity was the chief factor in deciding for cesarean section.

The value of the child to these six women of thirty-five to thirty-eight years is great; in other words, their chances for a living baby are not as good as in the young primipara who may have many pregnancies, and one is not justified in assuming great risks in difficult deliveries. I believe that after a trial labor in uninfected patients, if the choice lay between high forceps, version, or low cesarean section the last method should be chosen. Cesarean section as an elective procedure before the onset of labor is not indicated except in the case that is complicated by some condition which would demand abdominal delivery in any patient, such as placenta previa, contracted pelvis, or premature separation of the placenta. Malpresentation, such as brow or face, or preeclamptic toxemia should indicate cesarean section more frequently than in the young primipara or multipara; in other words, I believe the relative indications are broadened in the elderly primipara.

RELATION BETWEEN STERILITY OR LOWERED FERTILITY AND DYSTOCIA

It has been claimed that women conceiving for the first time several years after marriage are prone to dystocia, because of inertia, slow dilatation, and rigid soft parts due to hypoplasia of the generative organs. The number of years married before conception was not known in many of these cases, but in the 100 private patients from whom this item was ascertained, the following facts were found.

TABLE V. LOWERED FERTILITY AND DYSTOCIA

	MARRIED 1 YEAR OR LESS	MARRIED 5-20 YEARS BEFORE CONCEPTION, AVERAGE 9½ YEARS
No. of cases	39	69
Cesarean sections	6 – 15.1%	9 – 15.0%
High forceps	2 – 5.1%	0
Mid forceps	9 – 23.0%	22 – 36.0%
Low forceps	6 – 15.1%	10 – 16.4%
Spontaneous	16 – 41.0%	20 – 32.6%
Average duration of labor	14 hr., 12 min.	16 hr., 24 min.
Infant mortality	5 – 12.5%	2 – 3.2%

There are two chief differences in these two groups: first, in the woman married five years or more before her first conception the labor was longer, and second, forceps were resorted to more frequently in the same class.

Weight of Babies.—The average weight of all babies, excluding prematures, was 7 pounds 8½ ounces, which would not corroborate the view that first babies born to older women were unusually large.

TABLE VI. LACERATIONS AND RESULTS

PERINEUM		CERVIX	
No laceration	46	Intact	49
Episiotomy	57	1° stellate, unilateral, bilateral	102
1° laceration	45	2° stellate, unilateral, bilateral	36
2° laceration	57	3° stellate, unilateral, bilateral	12
3° laceration	1		

Results:

fine	104	
good	82	meaning no relaxation of pelvic floor at all.
moderate	20	meaning some degree of relaxation discoverable on examination but without symptoms.

Laceration or the necessity for episiotomy may be slightly more common in elderly primiparae than in young primiparae, though I believe the difference to be trifling. The results, however, were quite good.

Dry labor is mentioned as a complication of these labors. This cannot be considered very seriously when we find an average length of 11.6 hours for 82 cases. This is between three and four hours shorter than the general average of the entire series. The percentage of spontaneous deliveries in the dry labors was the same as that for all labors; there were fewer cesarean sections and more forceps deliveries.

TABLE VII. AVERAGE DURATION IN 82 DRY LABORS OF ELDERLY PRIMIPARAE

30-34	35-39	40-46	ALL AGES
11.1 hr.	11.8 hr.	13.8 hr.	11.6 hr.
DELIVERIES IN THESE DRY LABORS			
Spontaneous	15	11	3	29 – 35.5%
Low forceps	13	7	0	29 – 24.4%
Mid forceps	21	4	1	26 – 31.7%
High forceps	0	2	0	2 – 2.4%
Cesarean section	0	5	0	5 – 6.0%

Infant Mortality.—There were 12 deaths in 237 cases, or 5 per cent. This includes premature births. Five babies were dead before the beginning of labor (4 toxic cases and 1 placental infarction), 1 at six months, 1 at seven, 2 at eight months, and 1 at full term. These were macerated at birth. Of the remaining 7, 3 were delivered by high forceps, one was a breech delivery, one a placenta previa and finally eight months twins of a toxic mother with separation of the placenta.

SUMMARY

There still exists a more or less widespread feeling that childbearing in elderly primiparae is accompanied by a complicated pregnancy and a difficult labor, with an increased risk for the child.

There is a much higher percentage of elderly primiparae in private than in public hospital service.

The findings in this series of 234 private and 70 ward cases did not show more nausea and vomiting; did not show a higher percentage of twin pregnancies (1 to 101); did not show larger babies than the general normal (7½); did not show a higher incidence of abortions or premature labors; did not show more fibromyomas than in multiparae of the same age, and did not show a fetal mortality above the general average. Dry labors, if frequent, were shorter than those when the membranes ruptured later. The findings did not show an increase in the length of labor; as a matter of fact, the labors were shorter than in all primiparae by an appreciable length of time.

They did show a slight increase in toxemia of pregnancy, an increase in number of cases of funnel pelves, only a slight increase in unfavorable presentations and positions, an increase in the necessity for cesarean section, but a few abdominal deliveries were done with elderly

primiparity as a sole indication (the cases of contracted pelves would have demanded cesarean section had the woman been a young primipara).

There still is a small group of cases of first stage dystocia in which long labor will not dilate the cervix; many of these are due to primary inertia and only a few, in my opinion, to rigidity of the cervix. In some of these cases cesarean section should be done (6 cases in this series).

The usual dystocia seen in this series came after a satisfactory short first stage, with delay in the second stage due to inertia usually, but sometimes to a rigid pelvic floor. This explains the frequent resort to low or mid-low forceps extractions; the results as far as fetal mortality or condition of the pelvic floor was concerned were good. Elderly primiparae seldom have satisfactory lactation.

CONCLUSIONS

The management of labor in elderly primiparae is no different from that in young primiparae. A large proportion of these cases will permit of delivery through the pelvis, 89 per cent in this series. In only 2.9 per cent of these patients was the age of the patient the sole factor in deciding for abdominal section and, then, after a trial labor. Two measures; viz., analgesia during the first and second stage and the low cervical section facilitates a thorough trial labor after which it will be found that many patients, such as were formerly subjected to elective cesarean section, can be delivered by the pelvic route.

While pregnancy and labor in the woman having her first child after thirty carries with it an added risk to the mother and her baby, this hazard has been very much overestimated.

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26 South Goodman Street.

AMERICAN ASSOCIATION OF OBSTETRICIANS, GYNECOLOGISTS AND ABDOMINAL SURGEONS*

FORTY-THIRD ANNUAL MEETING

NIAGARA FALLS, CANADA, SEPTEMBER 15, 16, 17, 1930

THE PRESIDENT, DR. EDGAR A. VANDER VEER, IN THE CHAIR

(Continued from March issue)

The Elderly Primipara. Her Pregnancy and Labor. A Study of Over Three Hundred Cases, by DR.. JAMES K. QUIGLEY, Rochester, N. Y.
(See page 234, February issue.)

DISCUSSION

DR. R. D. MUSSEY, ROCHESTER, MINN.—Dr. Quigley's observations on more than 300 first births by women more than thirty years of age should relieve the elderly primipara of her fear. However, as the age of the primipara advances toward forty years and more, the hazards to mother and infant are increased. Statistics gathered by the Children's Bureau of the Department of Labor show that among mothers who are less than twenty or more than forty years of age, maternal and infant death rates are higher. If I remember correctly, about 3 per cent of Dr. Quigley's patients were more than thirty-five years of age and that the large majority of his patients were between thirty and thirty-five.

The first factor is lowering of physiologic reserve. After thirty-five athletes usually lose in competition. Second, there is more or less replacement of the muscular tissue of the lower uterine segment and of the pelvic floor by fibrous tissue. Third, fibromyomas are more prone to develop in these patients. Twelve per cent of white women who are nearing the age of forty years have fibromyomas. Fourth, in this group hypertension is more evident. All of these factors add somewhat to the hazard of the mother and of the infant as the age of the mother increases.

Dr. Quigley appropriately brought out the fact that the necessity for cesarean section is increased among elderly primiparas; this is true because the elderly primipara is more likely to have fibromyomas. Several of Dr. Quigley's patients had fibromyomas. Another factor which gives weight to the advisability of cesarean section is that the age of these women lessens greatly the chances of their having other children if the first child is lost in a trial labor.

In a group of 1500 cases my colleagues and I found 48 primiparas (roughly 3 per cent) aged thirty-five years or more. Of these 48 patients, 7, or about a seventh, had fibromyomas; 17, or a little more than a third, had systolic blood pressures of 140 mm. of mercury or more, at some time in the course of pregnancy;

*The current volume of the Association Transactions will contain the complete discussions which cannot be presented here for lack of space, as well as those papers which were unsuited to the pages of this JOURNAL because of their purely surgical character.

10 of these had enough albumin in the urine to be of significance, and 6 had to be hospitalized on account of preeclamptic toxemia. None of the group had eclamptic convulsions.

Dr. Harper has given an excellent, rather idealistic description of the application of forceps. There is no question but that the medical students should be taught that only cephalic forceps should be applied. However, there are several points that may be brought out in connection with application of forceps and with the other methods that may be used. If the head is arrested in the inlet there is usually some reason for this arrest; usually it is either because there is more or less contraction of the inlet, or because of malposition of the head. With an adequate pelvic inlet, unruptured amniotic membranes, and arrest of descent of the head, version may be the method of choice. If the inlet is moderately contracted, the membranes ruptured, the fluid drained out, and the uterus contracted, either application of forceps or conservative delay may be indicated. Members of an Association like this must remember that those who are taking care of the greatest number of obstetric cases are general practitioners, or, rather, those who are not, as a rule, especially trained in obstetrics. The emphasis must be laid on conservative measures of treatment for labor; these consist in delay, administration of sedatives and induction of analgesia. In many instances what would be a very difficult case for application of forceps will become a very easy forceps delivery when delay has permitted further descent and rotation of the head.

I do not think much difference from Dr. Welton's opinions on maternal morbidity can exist. I agree that a temperature of 100.4° F., for two consecutive days following the first twenty-four hours, does not prove true morbidity. However, it seems to be the best standard that has been reached. I believe that Dr. Welton's suggestion in regard to the formation of new standards should be very carefully considered by this Association and by obstetricians in general.

DR. ARTHUR H. BILL, CLEVELAND, OHIO.—I agree with Dr. Harper except that I would say that a true cephalic application can be and should be made in every case and this method should be taught to students and residents who are learning obstetrics. Our test as to the proper application is this: After the forceps are applied we insist that the anterior edges of the blades should be parallel to and equally distant from the lamboid sutures. If this is the case we have a true cephalic application. Between each traction we check this to be sure that there is no slipping of the blades and that we constantly maintain this application throughout the whole delivery.

The important question is when the forceps are to be used and when not to be used. There has been considerable discussion of the inlet arrest of the head. I dislike very much to hear a discussion of the kind of application that should be made in inlet arrest. I feel that the sooner we stop experimenting with forceps designed for the inlet arrest, the better off we will be. We should not use high forceps. I believe that podalic version has replaced high forceps. To classify these methods I would draw a line through the pelvic inlet and should say forceps are indicated when the head has passed through the inlet, but when the head is arrested in the pelvic inlet or is above it, podalic version is the procedure of choice, and the only instance where high forceps should be used is the rare case in which the uterus will not relax sufficiently to allow podalic version to be performed. Even these cases may be avoided because for the most part they are neglected cases where a podalic version could have been performed earlier in the labor. I would especially emphasize my opinion that the sooner we stop discussing how to do high forceps and devising new means for doing so, the sooner will better obstetrics be performed. I am thoroughly convinced that there is greater damage done by high forceps, than by podalic version.

DR. E. A. SCHUMANN, PHILADELPHIA, PA.—My own experience has been in accord with Dr. Quigley's, though I should say that in elderly primipara my percentage of nephritic toxemia has been rather greater. I am more than in accord with him as regards the apparently high percentage of cesarean sections and I think he really did not emphasize that point sufficiently. The older the primipara the more important becomes the baby. One should never follow the statement which has been made in high places that first babies are experiments to determine the proportion or disproportion of the head, because elderly primipara will not attempt a second child if the first has been lost. Therefore, I think the elderly primipara should be protected, and if it is felt that fatal damage may result from vaginal extraction, great care should be taken. Having very decided views upon the matter of the test of labor, I am rather in discord with this subject. A test of labor, in my experience, has resulted so frequently in rupture of the membranes, making the moment of election for cesarean section impossible, that I have come to believe that the skilled specialist should be able to determine for himself the probabilities of successful pelvic delivery before labor is instituted. I would myself be inclined to err on the radical side and perhaps do an elective cesarean section in a woman who might otherwise deliver herself rather than to have delivery fail in one patient where the moment of election has passed and in whom a traumatic and difficult labor followed, with the probable loss of the child.

Dr. Bill has so thoroughly covered Dr. Harper's paper that there is little to add except to remind the audience that Dr. Harper used one expression, "stern necessity." My own experience with all transverse arrests is that those cases that have not been under the care of an obstetrician during the early stages of labor come in with a head moulded out of proportion, the membranes ruptured long since, the patient probably febrile and the opportunity for anything but a high forceps, or perhaps podalic version, long since past. In these cases with the uterus in tonic contraction, podalic version is rather a risky operation except in the hands of masters. It should be practiced in a greater proportion of cases than it is, but it is in these cases usually that high forceps must be done. Most of us cannot apply the ordinary instrument accurately to the sides of the fetal head, especially if there be marked deflection. However, these cases are rare. At the University of Pennsylvania we have been using the Barton forceps, but only in the neglected type of high transverse arrest which I have described. Sometimes the application of a Barton forceps is a matter of great difficulty and gives us great concern lest the lower uterine segment rupture.

DR. J. F. BALDWIN, COLUMBUS, O.—I heartily approve of the opposition to high forceps. We do not at our hospital permit high forceps without a previous consultation. Generally the man who wants to use them is a man of immature judgment or little experience. I usually prefer cesarean section. But the surgeon should be thoroughly, conscientiously, honestly convinced that cesarean section is the best procedure in individual cases before it is advised. It is done altogether too frequently now all over the country.

DR. I. W. POTTER, BUFFALO, N. Y.—The trouble with the elderly primipara has always seemed to me to be that she had a fibroid uterus and if we consider that she has a fibroid uterus, or a toxemia of late pregnancy, after the first stage of labor why not deliver her by elective version? When I heard such papers on forceps, I am inclined to think more and more of the elective version. The forceps operation for me has got to be a very simple affair. I do not like high forceps, nor forceps applied with the head arrested at the brim. I have done a great many cesarean sections, probably more than you would agree should have been done, but I do not think the average elderly primipara should be left to herself after the first stage of labor is over, she should be delivered and I do feel that the elderly

primipara with a breech presentation should be sectioned. I think that is one of the indications for the use of cesarean section.

DR. C. S. BACON, CHICAGO, ILL.—The difficulty with changing our definition of morbidity is in the uncertainty that would arise about the statistics. If we wish to call cases morbid that are judged morbid by the practitioner, then we bring in the subjective element, and we have no agreement among different men. One practitioner will find 1 per cent or 2 per cent and another will find 10 per cent or 20 per cent. If we use the index of temperature, there is no possibility of having any disagreement. I quite agree with Dr. Welton that temperature is not alone sufficient but I think it would be unfortunate to give up entirely the practice of using the temperature index to judge results of different clinics.

In the discussion of dystocias in elderly primiparae as well as the dystocias that lead to forceps, attention has been given chiefly to the difficulties at the pelvic inlet. I believe that more frequent than difficulties at the inlet are those difficulties in the dilatation of the cervix. The cervix dilates with perhaps less readiness in the case of elderly primipara and the long labor is usually due to the slow dilatation.

The same thing is true in determining upon the use of forceps. High forceps with a small inlet should not be thought of. The most difficult question to decide is whether the cervix is going to dilate when labor is allowed to go on a sufficient length of time. It would seem that in this discussion the question of the readiness of dilatation should always be given an important place.

The Kielland forceps in any position of the head is, I believe, the forceps of choice. It can be applied to the head in a transverse position as well as in the oblique. This instrument is only for the midforceps operation and the low forceps but never for the high forceps.

DR. QUIGLEY (closing).—Dr. Harper more particularly made a plea for cephalic application of forceps. I do not believe in high forceps as a rule but in a multipara, when the membranes have ruptured, the Barton forceps does wonderful work with a cephalic application, in a transverse arrest in the brim.

I think Dr. Welton struck a note that we all appreciate because we have all been working at this problem of morbidity and not getting anywhere with it. I suppose that started with the idea of perhaps comparing the morbidity in the different methods of examination, rectal, vaginal, etc. The true morbidity of any patient depends upon her condition six months after delivery.

In my paper I tried to make it clear that there is a certain group of patients, elderly primipara, who should have a test of labor. I am certainly unable to prejudge any woman with a normal sized pelvis, without any complication such as toxemia or fibroids, and I do not think there is any way to know what is going to happen unless we give them a test of labor. If we section them without a test of labor we would be doing an unnecessary number of such operations, because we have been agreeably surprised sometimes in seeing a head engage after trial labor. As to Dr. Potter's version at the end of the first stage of labor, I would not do it. I think I would do a section on that patient if the head does not come down.

DR. HARPER (closing).—I did not come here to "sell" high forceps as an operation. I rarely do the operation. I think it has no place except in the occasional case where a well-molded head has been down in the pelvis for hours, where the membranes have ruptured, where there is some retraction, and where version is out of the question. One has to do the occasional high forceps; but, in inlet arrest version is unquestionably the procedure of choice.

No more did I come here to "sell" the Barton forceps. And although Dr. Quigley believes the Barton to be a wonderful instrument, I dislike the thought of

what may happen when that anterior blade, inserted posteriorly, is swung around to the front. Under the circumstances, cord prolapse and partial placental separation are without doubt possible dangers.

I would stress the imperative necessity of teaching the idea that a cephalic application must be secured. I believe it is possible in every case. My students are advised that when an operative case is finished and the child bears forceps-pressure marks over other than the malar prominences, something other than a true cephalic application has been secured and that the case has been by so much imperfectly managed.

Dr. Polak spoke about developing the obstetric conscience. No bigger contribution can a teacher make than to strive constantly to develop this same "obstetrical conscience" on the part of those in his charge. Any full-grown can deliver a mother of a seven-pound baby one way or another; but little real credit accrues unless it is done properly. If our papers and our teaching are not idealistic, we will get nowhere along the line of lowered obstetric morbidity and mortality even with forty White House Conferences.

If our students are sent out appreciating the value of cephalic application in every case and knowing how to make it, there will be far fewer men fifteen years hence making poor applications and doing correspondingly poor obstetrics.

When forceps are used, of course the blades should be applied to the sides of the baby's head, and they should remain there until the head is about to be born. And when the latter event transpires, there should be no evidence of their having been placed anywhere else than at the sides of the fetal head.