

3. The 106 maternal deaths which occurred in the 25-year period were studied as carefully as the case records permitted. It was considered that haemorrhage (before delivery, during caesarean section or caesarean hysterectomy, or early in the post-partum period) was responsible for one-half of the deaths; renal failure for one-quarter; and other causes, including eclampsia, puerperal infection, and apoplexy, for the remaining quarter. In a noteworthy proportion of the haemorrhage cases it was stated that the blood which had escaped per vaginam failed to clot or that non-clotting blood was found in the wall of the uterus, in the peritoneal cavity, between the layers of the broad ligament, or behind the peritoneum. Although shock was stated to have occurred in many of the fatal cases, it is obvious, in the light of recent knowledge, that haemorrhage was the most important factor in the causation of this condition.

4. Age in relation to maternal death.—Under 20 years, 1; 20 to 24, 3; 25 to 29, 19; 30 to 34, 27; 35 to 39, 37; 40 and over, 19.

5. Parity in the fatal cases.—Primigravidae, 19; multiparae 2 to 5 inclusive, 28; multiparae 6 to 9 inclusive, 33; tenth and later pregnancy, 26.

6. Fate of the foetus.—3,310 cases yielded 3,256 foetuses. The fate of 3,271 was noted in the records: 1,445 stillbirths and 176 neonatal deaths. The foetal loss, then, was 1,621 in 3,271, or just 50%. The loss in severe accidental haemorrhage was 100%.

Summary

Haemorrhage, renal failure, and foetal asphyxia render accidental haemorrhage a serious or potentially serious condition.

In the severe case of accidental haemorrhage the bleeding is of a special type—that is, due to a fall in blood fibrinogen. The clinical manifestations of this clotting defect are described.

The pathogenesis of anuric renal failure is presented in brief.

A scheme of treatment for the mild, moderate, and severe case of accidental haemorrhage is suggested. In Dublin, over the past two years, the results of this treatment have been most encouraging.

Notes relating to splanchnic block and to the Schneider and Shea tests for fibrinogen deficiency are included.

A summary of the statistics of accidental haemorrhage in Dublin over the 25-year period 1929–53 is presented.

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THE NATURE AND SOME HAZARDS OF OBSTETRICS IN GENERAL PRACTICE

BY

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Few details have been published of the midwifery of general practitioners. For information concerning its nature and results I analysed the records for seventeen years (1935–51) of a group practice. Although five partners dealt with most of the abnormal cases, altogether eight principals and four assistants were concerned in the obstetrics.

Nature of the Work

Quantity of Midwifery.—During the seventeen years 2,911 confinements were attended (this figure ignores attendances made solely to suture perineal tears)—2,241 were “booked” cases, the patients having engaged us to attend, and 670 were “emergency” ones, which we attended in response to requests from midwives.

Ratio of Booked to Emergency Cases.—Before 1948 two-thirds of the confinements were booked and one-third emergency, but since the financial obstacle to engaging a doctor was removed that year by the National Health Service our booked cases have been doubled and the emergencies decimated. The ratio of booked to emergency cases is now 50 to 1. The total midwifery undertaken now corresponds to 16 confinements per 1,000 patients.

Parity of Cases.—The mothers in the analysis were divided into three classes—primiparae, secundiparae, and “other” multiparae. Ordinarily, secundiparae are included with other multiparae, but, though they may behave similarly, they are not “mothers of many children.” The analysis provided an opportunity of comparing secundiparae with “other” multiparae. The analysis showed that, excluding a few cases in which parity was not recorded, 48.5% of the booked cases and 71.9% of the emergencies were primiparae. Secundiparae (14.0%) and other multiparae (14.1%) contributed equally to the emergency total, but more mothers booked a doctor for their second confinements than for subsequent ones (Table I).

TABLE I

	Primiparae	Secundiparae	Other Multiparae
Booked cases (2,241)	48.5%	34.7%	16.8%
Emergency cases (670)	71.9%	14.0%	14.1%

Parity and Abnormality.—By taking “normal” to mean a spontaneous vertex delivery of a live baby, with no haemorrhage or other intrapartum complication, and recording as “abnormal” all deliveries not satisfying these criteria, it was found that primiparous confinements were abnormal more than twice as often as multiparous ones (Table II). Abnormal labour occurred among the booked patients in

TABLE II.—Percentage of Normals in 2,241 Booked Cases

	Primigravidae	Secundiparae	Other Multiparae
Normal with no perineal tear	49.7%	68.9%	76.9%
Normal but with tear or episiotomy	23.2%	19.2%	11.0%
Total normal	72.9%	88.1%	87.9%

27.1% of 1,086 primiparae, in 11.9% of 764 secundiparae, and in 12.1% of 391 other multiparae. Of 432 abnormal booked cases, 294 (68.1%) were primiparae. If episiotomies and tears are counted as abnormal, then 50.3% of booked primiparae showed some abnormality.

Frequency of Abnormalities in 2,241 Booked Cases.—Breech deliveries occurred as often in booked primiparae (3.7%) as in secundiparae (3.5%), but the incidence of forceps differed greatly with parity. The forceps incidence was 17.4% in booked primiparae, 3.5% in secundiparae, and 2% in other multiparae (Table III). Of 107 secundiparae who had been delivered at their first confinement with forceps, only eight (7.2%) required forceps at the second delivery. Since the size and shape of the pelvis are virtually constant, this suggests that the cause for needing forceps in the first confinement was in over 90% of cases not attributable to an abnormal bony pelvis. Shoulder presentation was encountered in 0.72% of other multiparae, but more rarely in primiparae and secundiparae. Face presentations were met in 0.46% of primiparae and 0.13% of secundiparae, but did not occur in other multiparae. There were no triplets. The incidence of twins in secundiparae (1 in 50) was higher than in primiparae (1 in 90) or in other multiparae (1 in 80).

TABLE III.—Comparative Frequency of Abnormalities in 2,241 Booked Cases

	Primiparae	Secundiparae	Other Multiparae
No. of cases	1,086	764	391
Forceps deliveries	17.4%	3.5%	2.0%
Breech	3.7%	3.5%	2.6%
Shoulder presentations	0.28%	0.13%	0.72%
Face presentations	0.46%	0.13%	Nil
Caesarean sections	1.4%	0.65%	1.0%
Transferred to hospital	2.85%	2.1%	2.05%
Frequency of eclampsia	1 in 217	None	None
(approx.) of foetal abnormality:			
Twins	1 in 90	1 in 50	1 in 80
Hydrocephaly	1 .. 540	1 .. 380	1 .. 200
Anencephaly	1 .. 220	1 .. 255	1 in 200

Indications for Forceps

To determine why the need for forceps was so much greater in primiparae than in multiparae, I investigated the various indications for intervention in 575 booked and emergency forceps deliveries.

Several indications may exist in one case—for example, a prolapsed cord and foetal distress, complicating an occipito-posterior position with a contracted pelvis—so that it is difficult, if not impossible, to ensure that the indications were always tabulated under the correct heading. The indications were placed under five headings. These were: (1) uterine inertia and/or rigid perineum; (2) occipito-posterior positions (right, left, or persistent); (3) transverse arrest of the head; (4) disproportion (narrow outlet, contracted pelvis, large baby); and (5) distress or disease (a miscellaneous group including maternal exhaustion, eclampsia, cardiac disease, and foetal distress when not secondary to or accompanied by malpresentation or disproportion) (Table IV).

TABLE IV.—Indications for Forceps in 575 Cases

	No. of Cases	Inertia or Rigid Perineum	Occipito-posterior	Transverse Arrest	Disproportion	Distress or Disease
Primiparae	473	48.8%	24.1%	12.1%	9.3%	5.7%
Secundiparae	56	34.0%	44.6%	3.6%	10.7%	7.1%
Other multiparae	46	23.9%	47.8%	8.7%	15.2%	4.3%

The outstanding discovery from this analysis of indications was that inertia and/or rigid perineum accounted for 48.8% of primiparous forceps deliveries, for 34% of those in secundiparae, and for only 23.9% of those in other multiparae. Taking these figures in conjunction with those

(already given) for incidence of forceps in primiparae (17.4%), in secundiparae (3.5%), and in other multiparae (2.0%), inertia and perineal rigidity were responsible for forceps being used in 8.6% of all booked primiparae, in 1.1% of secundiparae, and in 0.48% of other multiparae.

But inertia was also recorded, and often contributed to the need for forceps, in many cases that were grouped under the headings of malpresentation, disproportion, and foetal distress. It is therefore clear that inertia and rigid perineum together explain the higher incidence of forceps in primiparae and probably also the higher incidence of abnormal labour in primiparae. Uterine inertia is the primigravida's greatest enemy.

Declining Use of Forceps

If an effective and safe alternative method of dealing with uterine inertia had been available, a large number of the forceps deliveries might have been rendered unnecessary. But since about 1948, when the National Health Service was introduced, it has struck me that the frequency and difficulty of forceps deliveries have been diminishing—and this despite a sharp increase in the total amount of midwifery undertaken. Other doctors and midwives have had the same impression, and in his recently published survey of general practice Stephen Taylor (1954) stated that "in manipulative obstetrics . . . the need for intervention is declining."

To confirm the correctness of this impression, I calculated the incidence of forceps and caesarean section in our practice for the last nineteen years. The years were divided into five periods: (1) "pre-war" (1935-9), (2) "wartime" (1940-4), (3) "post-war-pre-N.H.S." (1945-June, 1948), (4) "early N.H.S." (July, 1948-1951), (5) "later N.H.S." (1952-3).

In every period the total forceps rate rose or fell in agreement with the rate for primiparous forceps deliveries. These two rates declined during the war, increased in the post-war period, subsided after the N.H.S. was introduced, and continue to decrease. The total forceps incidence has dropped from 8.4% in the "post-war-pre-N.H.S." period to 4.1% in 1952-3, and the primiparous rate for the same periods has fallen from 20.1 to 9.7% (Table V).

TABLE V.—Incidence in Forceps in 2,710 Booked Cases

	Primiparae			Secundiparae			Other Multiparae			Total		
	No.	For- ceps	%	No.	For- ceps	%	No.	For- ceps	%	No.	For- ceps	%
1935-9	220	47	21.4	122	8	6.6	48	3	6.3	390	58	14.9
1940-4	322	50	15.5	166	4	2.4	67	2	3.0	555	56	10.1
1945-June, 1948	214	43	20.1	177	10	5.65	299	5	1.7	690	58	8.4
July, 1948-1951	330	49	14.8	299	5	1.7	202	3	1.9	831	57	6.9
1952-3	155	15	9.7	150	4	2.7	164	0	—	469	19	4.1

Explanations for Declining Forceps

An increase in caesarean sections would reduce the number and difficulty of forceps cases, but the latest figures show a decrease: 1935-9, 0.5% of 390; 1940-4, 1.9% of 555; 1945-June, 1948, 0.5% of 455; July, 1948-1951, 2.1% of 831; 1952-3, 0.6% of 469. Only three mothers had caesarean sections in the last two years—two for placenta praevia and one for severe toxæmia—none for dystocia.

The relative increase in the number of bookings of the less forceps-prone secundiparae and other multiparae would lead to a fall in the total forceps rate, but it leaves unexplained the decline in primiparous forceps deliveries. Incidentally the number of our secundiparous patients (150) in the last two years nearly equalled the total of primiparae (155); this "shift to the right" might herald a decline in the post-war marriage and baby boom.

A more conservative attitude on the part of the obstetrician could explain a reduction in forceps cases, but we have not altered our attitude, have never held that primiparity *per se*

was a good indication for intervention, and the decline in the use of forceps is not limited to our cases, but is general.

Shortening of labour resulting from quicker dilatation with pethidine, and the relief of suffering afforded by nitrous oxide and pethidine, lessen maternal distress. In so far as distress is responsible for the use of forceps—only a small percentage of the indications (Table IV)—analgesics may have contributed to the decline.

Better antenatal care, correction of malpresentations before labour, and induction of labour before the baby becomes excessively large—these could explain some cases, but our medical and surgical inductions have been much fewer in the last four years than they were during the post-war period.

The disappearance of rickets and increased rate of growth of the younger generation, assisted by supplements of milk, vitamins, and the school-meal service, suggest possible improvement in development of the pelvis of those who are now becoming mothers. A larger pelvis should mean a less difficult labour, but the low rate of recurrent forceps (7.2%) and the figures for disproportion (Table IV) suggest that a small pelvis explains only a minority of forceps deliveries.

The main reason, however, for the decline seems to be the increasing youth of primiparae.

Maternal Age

The ages of the booked primiparae were calculated for the five periods used in investigating the decline in forceps. Mothers were divided into six age groups (Table VI). Before the war only 23% of the booked primigravidae were under 25; this proportion increased to 34.5% in the post-war period, and by 1952-3 it had reached 60.4% (Table VI). The youngest primiparae, those under 20, increased from 3.8% in the post-war period to 14.8% in 1952-3.

TABLE VI.—Age of Booked Primiparae

	Under 20	20-24	25-29	30-34	35-39	40 and Over
1935-9	2.3%	20.7%	43.1%	25.0%	7.1%	1.8%
1940-4	1.6%	29.7%	38.4%	20.0%	10.0%	0.3%
1945-June, 1948	3.8%	30.7%	36.8%	15.1%	12.7%	0.9%
July, 1948-1951 ..	9.5%	47.9%	24.8%	11.4%	4.9%	1.5%
1952-3	14.8%	45.6%	26.6%	9.7%	3.3%	—

Forceps Incidence and Maternal Age

The influence of age on parturition is perceptible throughout child-bearing years (Table VII). The incidence of forceps rises progressively with advancing age, so that, com-

TABLE VII.—Percentage of Forceps Deliveries in Different Age Groups

	Under 20	20-24	25-29	30-34	35-39	40 and Over
Primiparous forceps	6%	10.3%	17.0%	25.2%	35.5%	54.5%
Secundiparous forceps	—	1.5%	1.8%	5.5%	7.7%	—

pared with the forceps rate in primiparae under 20 (6%), the rate is six times greater (35.5%) in those aged 35-39 and nine times greater (54.5%) in those aged 40 and over.

The rate also increases with age in secundiparae, but at a lower level, the rate for secundiparae aged 35-39 (7.7%) being little higher than the rate for the youngest group of primiparae.

The Maternal Risk

Since abnormal midwifery is commonest in primiparae, especially elderly ones, most maternal deaths might be expected to occur in primigravidae. But we have had no maternal deaths among 1,241 booked primiparae, nor among 555 booked other multiparae, including mothers who were transferred to hospital. The only two booked cases in which

the mothers died were among the 914 secundiparae, and one of these died from a non-obstetric cause. This was a mother who in 1935 (before the days of sulphapyridine or penicillin) developed a temperature on the sixth day after delivery, was transferred to hospital with pneumonia, and died on the seventeenth day. The other death occurred in 1943, when a mother in a nursing-home died apparently from obstetric shock. The maternal mortality rate for our booked cases between 1935 and 1953 was 0.007% (2 out of 2,710).

Among the 670 emergency cases there were five maternal deaths, three of them occurring before the last war, when the standard of antenatal care was lower and unqualified midwives were numerous.

The first of these deaths, in a nursing-home in 1936, was that of a 4-para aged 35, who weighed 23 stone (137 kg.); the baby's head was still above the brim when she was fully dilated; internal version was performed and she was delivered, as a breech, of a 10½-lb. (4.9-kg.) baby. Two and a half hours later she collapsed and failed to rally. She was thought to have died from pulmonary embolism.

The second fatality, in 1937, occurred ten minutes after the doctor arrived at the house. The cause was post-partum haemorrhage complicating a retained placenta. Her parity was not recorded, but she was said to have been very anaemic during pregnancy.

The third victim, in 1938 (parity not recorded), was confined at home and had a 13-lb. (5.9-kg.) baby. The midwife delivered the head, but was unable to deliver the shoulders. One and a half hours elapsed before the doctor arrived and completed the delivery. Two hours afterwards the mother collapsed, and she died after a further ninety minutes. Death was attributed to a pulmonary embolism.

The fourth death was in 1941. A 3-para in a nursing-home had a normal delivery but collapsed and died five hours later. When first seen by the doctor she was moribund. Post-mortem examination showed death to have resulted from pulmonary embolism secondary to femoral thrombosis.

Lastly, in 1948, a 35-year-old primipara, in a nursing-home, collapsed thirty hours after delivery and was transferred to hospital but died shortly afterwards. The hospital pathologist performed necropsy and attributed death to fulminating septicaemia. We were not convinced of the correctness of this diagnosis, and it was suggested by Professor Chassar Moir that the collapse may have been due to multiple small emboli of amniotic fluid debris entering the maternal circulation via the placental sinuses—a syndrome described by Steiner and Lushbaugh (1941) in America.

One feels that with better antenatal care the first three of these deaths could have been prevented, but, since more deaths occurred among the unbooked mothers than among the booked ones, search was made to see if the loss of babies was, like that of mothers, greater in emergency cases than in the booked.

The Foetal Risk

Booked and Emergency Foetal Loss

The comparative foetal loss was ascertained for booked and emergency forceps and breech deliveries over a period of fifteen years (1935-49). By 1950 the booked cases had increased, and the emergencies decreased, so much that they had become too unequal to justify comparison. The years 1950-1 were therefore excluded from the calculation.

TABLE VIII.—Corrected Stillbirths and Neonatal Deaths Among 545 Booked and Emergency Forceps Deliveries

	1935-9	1940-4	1945-9	1935-49
Booked forceps ..	7%	1.7%	1.2%	3.0%
Babies lost ..	(4 out of 57)	(1 out of 58)	(1 out of 82)	(6 out of 197)
Emergency forceps ..	9.3%	4.8%	7.9%	7.2%
Babies lost ..	(10 out of 108)	(6 out of 126)	(9 out of 114)	(25 out of 348)

Forceps Deliveries.—There was a steady and progressive decline in the foetal loss of the booked cases during the fifteen years: only two babies were lost out of the last 140 booked forceps deliveries. This improvement may be further evidence of easier deliveries and stronger babies. The foetal loss for the booked forceps cases (3%) was less than half that for the emergency forceps deliveries (7.2%) for the whole period (Table VIII).

Breech Deliveries.—Four babies were lost out of 58 booked breech deliveries—only two were stillborn, the other two being premature babies who died when a few days old. The uncorrected foetal loss for booked breech deliveries (6.9%) was considerably less than half the loss for emergency breech cases (18.2%) (Table IX).

TABLE IX.—*Corrected Stillbirths and Neonatal Deaths Among 146 Booked and Emergency Breech Deliveries*

	1935-9	1940-4	1945-9	1935-49
Booked breech ..	5.3%	10.0%	5.3%	6.9%
Babies lost ..	(1 out of 19)	(2 out of 20)	(1 out of 19)	(4 out of 58)
Emergency breech ..	31.8%	12.8%	14.8%	18.2%
Babies lost ..	(7 out of 22)	(5 out of 39)	(4 out of 27)	(16 out of 88)

War-time Emergency Foetal Loss

During the war expectant mothers residing in heavily bombed areas were removed for their confinements to emergency maternity units in safer regions. Many London mothers came to one of these units, the Grove, on the outskirts of Reading. They were brought to Reading about the thirty-sixth week of pregnancy and stayed in hostels until the confinements took place. Although we attended their confinements only in response to requests from midwives, these cases differed from other emergencies because during the last weeks we attended to their antenatal examinations, arranging for medical inductions or performing surgical inductions when necessary. In this respect they resembled booked cases. It is noteworthy that our loss of babies for emergency forceps and emergency breech deliveries was lowest during the war, when we were attending the Grove cases, who comprised 57% of our war emergencies.

Foetal Loss in Breech Deliveries

Although a breech extraction may be difficult more often in primiparae than in multiparae, our figures show that the breech foetal loss was much lower (9.1%) in primiparae than in multiparae (18.2%) (Table X). In the latter we were sometimes called too late to save the baby.

TABLE X.—*Corrected Stillbirths and Neonatal Deaths in 135 Booked and Emergency Breech Deliveries of Known Parity*

	Primiparae	Secundiparae	Other Multiparae
Foetal loss ..	9.1%	16.7%	18.2%
	(7 out of 77)	(6 out of 36)	(4 out of 22)

Foetal Loss in Domiciliary and Nursing-home Confinements

The proportion of women confined in nursing-homes who were primiparae was greater than in domiciliary confinements, so for fair comparison the foetal loss was estimated only for primiparae. The uncorrected loss among 1,071 babies born to booked primigravidae (including twins, but excluding the babies of 27 primiparae who were transferred to hospital) was twice as great (5.7%) in domiciliary cases as in nursing-home ones (2.5%) (Table XI).

TABLE XI.—*Uncorrected Stillbirths and Neonatal Deaths Among 1,071 Babies Born to 1,059 Booked Primiparae*

	Domiciliary	Nursing-Home
Foetal loss ..	5.7%	2.5%
	(15 out of 263)	(20 out of 808)

Discussion

Maternal mortality, stillbirths, and neonatal deaths in this country have diminished since the introduction of the National Health Service. The plan whereby normal midwifery is conducted by midwives, and abnormal midwifery is dealt with in hospitals by specialists, with general practitioners acting as intermediary, appears to be satisfactory. This discussion suggests ways of further lessening certain hazards.

Risk of an Inexperienced Obstetrician

A single practitioner with 3,000 patients would, at a birth rate of 16 per 1,000, conduct 48 confinements each year. The number of abnormal ones would depend mainly on parity and maternal age: the fewer primiparae, the fewer abnormal. But fewer abnormal cases would mean less experience. The latest figures suggest he would have yearly only four or five forceps and one or two breech deliveries; skill is acquired only with practice, and experience in abnormal midwifery is obtained only after qualifying. An inexperienced doctor who enters a single practice is unlikely to become, and an experienced one unlikely to remain, very proficient with the annual quota of four forceps and one breech delivery—or even less with a smaller practice.

The remedy recommended is threefold: (1) Group practice:—In such practices doctors who dislike or are worried by midwifery can hand over their confinements to obstetrically minded colleagues. The aggregate normal and abnormal midwifery in a six-partner practice will offer good experience for two obstetricians. (2) Former obstetric house-surgeons entering general practice should join a group practice, ensuring them adequate experience to retain and develop their skill and helping them to raise the standard of obstetrics in general practice. (3) Maternity units or hospital beds for general practitioners:—In maternity units practitioners can attend their own patients, particularly primiparae, when social conditions prevent a domiciliary confinement.

Stallworthy (1952) published the results of a year's work in four units. There were no maternal deaths among 1,097 cases, the forceps rate was 8%, and the uncorrected foetal mortality rate was 22 stillbirths per 1,000.

For 1950 and 1951 the figures for Dellwood Maternity Unit (in which many of our confinements took place) were 906 confinements, no maternal deaths, a forceps rate of 2.2%, and 12 stillbirths per 1,000. Up to 1954 almost 7,000 mothers had been safely delivered in Dellwood since the last maternal death in 1936. As over 100 experienced and inexperienced practitioners have attended these patients, the credit for this wonderful record belongs to the staff midwives. With alert experienced midwives who work as a team, who are prompt to call for medical assistance, and who are willing to offer tactful advice to inexperienced obstetricians, inexperience matters little provided the practitioner is not too proud to heed the advice.

Risk of Inadequate Antenatal Care

Under the National Health Service practitioners are free to decide the number, frequency, and nature of their antenatal examinations, provided these include an initial examination and another about the 36th week. Sometimes the frequency and thoroughness are unsatisfactory, and occasionally patients are told at the end of the examination at the 36th week, "There is no need to come and see me again." The dangers of toxæmia, eclampsia, disproportion, and post-maturity are thus ignored. A more serious omission is the failure of some doctors to test the blood pressure, which is an omission as dangerous as driving a car with defective brakes, and equally certain to lead to preventable accident or tragedy—sooner or later.

To impress doctors with this fact and to make them remedy this omission, unopened and unread medical journals and ministerial pamphlets are useless, but pressure from the patients might be effective. Patients should, through the

press or radio, be informed that the blood pressure is tested during pregnancy to detect the onset and development of toxæmia, which is dangerous to mother and baby, and which may deteriorate into eclampsia, the principal cause to-day of maternal deaths. They should be told that regular testing of the blood pressure, either by midwife or doctor, or by both, is essential—particularly in the second half of pregnancy—and that if they develop swollen fingers or feet the testing is vitally important. If the midwife fails to do the test, they should visit their doctor. If the doctor fails, they should draw his attention to his oversight, and if he does not respond to the hint, or attempts to dismiss the test as being unnecessary, they should seriously consider changing their obstetrician.

Risk of Post-partum Haemorrhage

Only one of our maternal deaths, the emergency case in 1937, occurred from post-partum haemorrhage. Her case emphasizes the need for diagnosing and treating anaemia (from which she suffered) during pregnancy. That there was but one death from haemorrhage was largely due to the speed with which we in Reading have for many years been able to obtain blood transfusion; without that the toll would have been considerably higher.

Sometimes patients have lost between two and three pints (1 and 1.5 litres) of blood, but their immediate condition—colour, pulse, and blood pressure—seems satisfactory. One is tempted not to give a transfusion, forgetting that such patients will be liable to sepsis, white-leg, and weeks or months of tiredness due to anaemia. Having already spent one or two hours with the patient, one is loath to send for the flying squad, knowing that one is expected to wait and watch while the transfusion is given. It is only courtesy to wait, but the thought of a further one or two hours' delay, a crowd of patients waiting at the surgery, and many visits to do, prompts one to take a risk.

If the flying squad did not expect one to remain, but said, "Don't bother to wait if you are in a hurry," all desirable transfusions would probably be arranged, with benefit to patients.

Risk for the Baby

The foetal loss was (1) lower in booked cases than in emergencies, (2) lowest in emergencies during the war, (3) lower in nursing-home than in domiciliary primiparae, (4) lower in primiparous breech deliveries than in multiparous. The obstetricians were the same, but the midwives varied. Knowing, in booked cases, that we wished to be present at the delivery, they would not delay sending for us. Hoping to deliver without help in emergencies, they waited—sometimes too long—before sending.

In the absence of visible meconium, midwives sometimes neglect auscultation of the foetal heart. Their detection of foetal distress is therefore delayed, and medical assistance is summoned too late to save the baby's life.

With limited and lucky previous experience of breech delivery, some midwives were unable to deliver extended arms. Doctors were called in time with primiparae; but with more rapid multiparae the baby was sometimes half-born (and dead) before we arrived. In case of unexpected extension of the arms or difficulty in delivering the head, it is wise for doctors to attend all breech births—primiparous and multiparous.

The many emergencies in the Grove, and the lowest foetal loss in war emergencies, coincided. Apart from the explanation concerning antenatal care, nursing-home midwives, in the Grove and elsewhere, were more reliable than domiciliary ones in auscultating the foetal heart, and the presence of telephones minimized delay in obtaining assistance. In years to come domiciliary midwives should have radio-equipped cars for summoning rapid assistance.

With marked foetal distress, a speedy forceps delivery at home may save a foetal life which would be lost by delay in moving the patient to hospital. Hence the need for general-practitioner obstetricians adept in using forceps.

Risks of Early Rising and Pulmonary Embolism

It is feared that mothers may get up too soon at home. Mothers kept in bed for eight days following confinement usually need assistance, as they stagger on their feet. Their trouble is rising too late, not too soon. To benefit from early rising they should be standing out of bed not later than the third day, before they have lost their previous muscle tone.

Whenever the sirens sounded during the war all mothers in the Grove who had reached the second day of the puerperium walked unassisted downstairs to shelter in the basement. They appeared to benefit, not suffer, from this early ambulation, having few complications and involuting unusually quickly.

The routine at Dellwood was changed three years ago. Mothers remain in bed for two days, stand out on the third morning, and have a bath later that day. On the fourth day onwards they go to toilet whenever they wish. Previously the first bath was on the seventh day. Well over 1,000 mothers have tried and applauded the new regime. Pyrexia and phlebitis are both rare, involution is accelerated, and the mothers appear fit to go home quite two days earlier than formerly—an economic advantage.

The diminished occurrence of phlebitis means less danger of pulmonary embolism (to which, rightly or wrongly, three maternal deaths were attributed). Even supposing early rising did cause an increase in prolapse—which is not true (Atlee *et al.*, 1953)—better far be alive with a prolapse than dead with a pulmonary embolism. There is many a good woman now lying in her grave because she was kept lying too long in her bed after an operation or confinement.

Summary

The obstetric records of a group practice were analysed; in 17 years 2,911 confinements were attended—2,241 were booked, 670 were emergencies. The proportion of booked cases has increased greatly since the National Health Service.

Mothers were divided into primiparae, secundiparae, and "other" multiparae; 48.5% of booked and 71.9% of emergency cases were primiparae.

The incidence of each abnormality—forceps, breech, shoulder and face presentations, caesarean sections, eclampsia, twins, and foetal abnormalities—was calculated for the three classes. The respective forceps rates were 17.4%, 3.5%, and 2.0%.

The indications for forceps vary with parity: in primiparae uterine inertia is mainly responsible.

The need for forceps is decreasing: the youth of primiparae is suggested as the main reason. Tables show the declining ages of primiparae and the effect of maternal age on forceps incidence.

Seven maternal deaths are described: the booked maternal mortality rate was 0.007%. The loss of babies was (1) less in booked than in emergency cases, (2) low in wartime emergencies, (3) higher in multiparous than in primiparous breeches, and (4) lower in nursing-home than in domiciliary confinements.

The risks of an inexperienced obstetrician, inadequate antenatal care, post-partum haemorrhage, early rising and pulmonary embolism, and danger to the baby are all discussed. Suggestions are made for lessening these hazards.

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