

# THE Journal of Obstetrics & Gynaecology of India

VOL. X, NO. 4

JUNE 1960

## THESE TWENTY-FIVE YEARS

by

M. K. KRISHNA MENON, B.A., M.D.,

*Director,*

*Institute of Obstetrics and Gynaecology,*

*Govt. Hospital for Women and Children, Madras-8;*

*Professor of Obstetrics & Gynaecology,*

*Madras Medical College, Madras.*

Sir Winston Churchill in an address to the Royal College of Physicians in 1914 remarked, "The longer you can look back the further you can look forward". It is always instructive and stimulating to compare the results of our present work with what it was in the past and more intriguing to guess the future.

These twenty-five years have been monumental in history and in medicine. It saw the birth of chemotherapy, closely followed by the antibiotics, the establishment of organised blood transfusion services, improvements in anaesthesia and

surgical procedures and the harnessing of atoms into medicine. The impact of such advances could not but affect the ultimate results in medical science. Obstetrics had also its share and in this paper I have attempted to evaluate how far we, here in this hospital, benefited from such useful advances.

Whatever be the nature of advances in obstetrics its result is always best assessed by the maternal and perinatal mortality rates. Hence a comparison of the maternal and perinatal mortality rates over these years and how the reduction, if any, has been brought about will be an interesting study.

A paper presented on 30-1-59 at the 25th anniversary meeting of the Obstetric and Gynaecological Society of South India with Dr. Sir A. L. Mudaliar, founder President of the Society, in the chair.

Due to certain practical difficulties and deficiency in our records, I regret I am unable to give an account of all the 25 years, year by year.

That would have been most desirable but I am afraid it is not to be. The next best I could do was to take the records of the first five years since the inception of our Society (1934-1938), both years inclusive, and compare them with those of the five years 1953-1957. This approach has the added advantage in that during 1934-1938, we had no antibiotics, no blood transfusion service, chemotherapy was just beginning to be made available and the prodromal stage of the second world war had set in. 1953-1957 period saw the complete establishment of antibiotics and chemotherapy, the organisation and establishment of blood transfusion service, the development of anaesthesia and refinements in surgical technique. These two periods therefore should give interesting results on comparison. It is my aim to compare these two five-year periods and to demonstrate how these developments have affected the obstetric service of this hospital.

pregnancy in the two periods under review. It also shows the maternal mortality rate and perinatal death rate per 1,000. The enormous increase in the number of deliveries is obvious and I am unhappy to state that in 1958 the total number of deliveries is higher still, 12,060.

One of the greatest achievements of ante-natal care in advanced countries has been the reduction of maternal mortality to such low levels that there is a tendency in certain countries to extend the period of maternal death to include all deaths under one year from the date of confinement. Numerous clinics report series of 1,000 mothers delivered without a single death. Maternal deaths can be attributed directly to complications of pregnancy and labour and in some to associated conditions which complicate pregnancy, e. g. anaemia, tuberculosis, heart disease, etc. In our country, especially, associated conditions play a prominent role in the causation of maternal death.

TABLE I

Year	No. of deliveries	Maternal death rate per 1,000	Perinatal death rate per 1,000
1934	3,355	20.8	136
1935	3,740	17	131
1936	3,654	14.7	120
1937	4,082	17.9	130
1938	4,225	16.2	125
1953	8,419	7.9	79
1954	9,494	7.8	81
1955	11,112	8.1	103
1956	11,360	8.2	101
1957	11,319	5.3	90

#### *Maternal and Perinatal Mortality*

Table I shows the number of deliveries after the 28th week of

All of us are aware of the extreme degree of malnutrition in the lower class of pregnant women; debilitating diseases like tuberculosis,

dysentery, malaria, kala-azar and a host of other conditions are still rampant. The result is that during pregnancy many a woman is found suffering from a combination of diseases, some unassociated and others resulting from pregnancy. While international classification of maternal deaths demand a primary single factor as a cause of death, I am convinced, for us here, that it often becomes extremely difficult to fix the blame on a single factor as the cause of death. I believe that "multiple causes of death" will suit our conditions better.

From Table I can be gathered the improvements we have made both in maternal mortality and perinatal mortality. It is very heartening to note the significant reduction in both groups but our present rate is high when compared to those in the teaching hospitals in the west. We have our extenuating circumstances, for few patients attend ante-natal clinics regularly. Most of our deaths are from emergency admissions. These non-booked cases constitute 80% of hospital deliveries. A good percentage of these deaths are due to associated conditions.

Let us now try to find out what factors have contributed to this reduction and how this present result has been achieved. During 1934-1938, puerperal infection, ante-partum and post-partum haemorrhage, eclampsia and anaemia accounted for nearly 75% of all maternal deaths, while, during 1953-1957, puerperal infection, eclampsia and ante-partum and

post-partum haemorrhage accounted only for 25% of total deaths. The deaths from anaemia continue to menace us and I regret to state that still 20% of our deaths are from anaemia while in another 20% it is a contributory cause. As the preventable causes of death due to pregnancy are brought under control the associated causes are now taking on more importance. It is worth noting this changing trend in maternal mortality.

#### *Perinatal Deaths*

The term perinatal deaths include all deaths, ante-partum, intrapartum and first week deaths. It is an index also of the efficiency of the obstetric service. No doubt the causes vary, obstetric trauma, asphyxia, prematurity, infection and congenital abnormalities account for the maximum number of deaths. Maternal causes like toxæmia, anaemia, ante-partum haemorrhage, diabetes and fevers play an important role in its causation. Improvements in obstetric service will result in lowering the perinatal mortality.

During 1934-1938 the gross perinatal mortality rate was 148/1000. It fell to 90/1000 in 1953-1957. The corrected perinatal mortality for 1958 was 60/1000. This reduction has been mainly in the group of deaths due to asphyxia, obstetric trauma and infection. While our incidence of toxæmia, ante-partum haemorrhage and prematurity has not shown any reduction during these years our perinatal death rate has shown a significant drop. I cannot claim that our care of the premature infant has resulted in a significant reduction in the mortality rate

but I am glad to state that we have now available a specialised paediatric service to help us to look after the new-born. It has therefore to be assumed that our improved results are mainly due to improvements in obstetric management. The tendency to avoid difficult and hazardous vaginal delivery, to replace it by caesarean section has certainly paid handsome dividends here. I have to point out at the same time, which I will emphasise later that our caesarean section rate is still modest and there are many who consider us too conservative in this respect. Our rate is less than 2%. Apart from this, changes in obstetric technique also have played their part and these will be discussed when operative deliveries are considered.

It is not possible for me to go into all the ante-natal complications and show you how changing trends in treatment have given us better results. I shall discuss only three important ante-natal complications, namely placenta praevia, accidental haemorrhage and eclampsia.

#### *Placenta Praevia and Accidental Haemorrhage*

Table II shows the number of cases of placenta praevia, accidental haemorrhage and eclampsia during

the two five-year periods and the maternal mortality rate.

During 1934-1938 there were 161 cases of placenta praevia with a maternal mortality rate of 9.5%. During 1953-1957 there were 291 cases with a death rate of 2.7%. In the old days it was the routine to resort to active lines of treatment, irrespective of any factor, as soon as a patient was admitted with ante-partum haemorrhage. Conservative management as we know it to-day was not practised. Vaginal examination on admission was imperative. Pregnancy was then terminated by artificial rupture of membranes, bleeding was attempted to be controlled by vaginal plugging, the uterus was stimulated by fractional doses of pituitrin, in suitable cases Willett's forceps application. Braxton Hick's version, manual dilatation of cervix and internal podalic version and in major degrees of placenta praevia even tearing through the placenta and bringing down a foot, were all established procedures. Patients were bled white and to replace the lost blood all that was available was glucose saline or gum saline. Caesarean section was a dreaded operation as in these cases its mortality was high. The result was a mortality rate of 9.5%

TABLE II

Year	Placenta praevia		Accidental haemorrhage		Eclampsia	
	Total no.	Mortality %	Total no.	Mortality %	Total no.	Mortality %
1934-1938	161	9.5	288	5.6	375	16.2
1953-1957	291	2.7	887	1.8	736	4.2

which was considered good in those days. The caesarean section rate was 8.6% with a mortality rate of 16.2%. To-day it is a different tale. If the baby is premature and bleeding not profuse, conservative management is undertaken. Vaginal examination is done only when it is decided to undertake active lines of treatment and that too after having alerted the operation theatre in case a major degree of placenta praevia is identified or profuse bleeding occurs indicating immediate caesarean section. Major degrees of placenta praevia are dealt with by caesarean section, preferably lower segment, minor degrees by artificial rupture of membranes and stimulation of uterine action by a controlled intravenous drip of pitocin, 2½ units in 500 ml. of 5% glucose. At times, Willett's forceps is used and even in milder degrees of placenta praevia caesarean section is resorted to occasionally if response to induction is poor and bleeding continues. I need hardly add that the first thing that is done to all these patients now on admission is blood transfusion. With this line of treatment our mortality rate has come down to 2.7%. The caesarean section rate for placenta praevia is 38.2%, mortality rate 2%. It could be improved further if patients come in earlier instead of in a moribund condition and more blood is made available in time.

The same remarks hold good for accidental haemorrhage. The mortality rate has fallen from 5.8% to 1.8%. We are now aware of the coagulation defects and renal failure which are likely to develop in the severe cases, conditions which were

not emphasized in 1934-1938.

#### *Eclampsia*

Eclampsia still continues to be a major obstetric problem. Its incidence in 1934-1938 was 2.6% while in 1953-1957 it was still 1.7%. The treatment of eclampsia has been and is essentially conservative, sedation by all known methods and, in cases not responding to treatment, termination of pregnancy by artificial rupture of membranes. On these lines the maternal mortality rate during 1934-1938 was 16.2%. The advent of new sedatives and hypotensive drugs improved maternal mortality. Treating a very large number of cases we learnt that control of convulsions alone is not sufficient to improve maternal mortality in eclampsia but the major causes of death—pulmonary oedema, hyperpyrexia, renal failure and shock—have to be controlled. The advent of the chlorpromazine group of drugs with properties which help to control all these dangers have improved our results. Even in spite of sedation in some patients the fits continue to persist. While in the earlier years these cases were dealt with by artificial rupture of membranes, from our experience we now make bold to recommend lower segment caesarean section under local anaesthesia if the cervix is unaffected and the head unengaged. With the present line of management, namely sedation with chlorpromazine, diethazine and pethidine according to a planned schedule and judicious employment of caesarean section in cases not responding to treatment, we have been able to reduce the mortality to 2.2% in the latest series of 402 cases. I

may be permitted to consider this as a major achievement.

### Forceps

Application of forceps is the most common obstetric operation. Its incidence varies in different institutions and with different obstetricians because of the different opinions regarding its indications. During the years 1934-1938 the total number of forceps deliveries was 1426, an incidence of 7.0%. In these years forceps delivery was resorted to only on definite indications, namely either foetal distress or maternal distress or both. The dread of puerperal infection, especially following an operative delivery, and the heavy maternal mortality associated with such infections made it imperative that the obstetrician resort to operative delivery only on the strictest of indications. This attitude of mind, while inevitable, resulted in serious complications to the infant in that severe asphyxia, intracranial damage and neonatal deaths, from prolonged labour took a heavy toll of the infant at birth. The dread of infection and shock in caesarean sections especially done late in labour made the obstetrician avoid caesarean section and prefer high forceps to abdominal route delivery. It was not uncommon in these days to put on forceps with the head still high, the greatest diameter not having gone through, and combine the operation with manual dilatation of the cervix in cases of prolonged obstructed labour. Perforation was resorted to if attempts at delivery failed. The aim was to avoid caesarean section as maternal mortality

was high in caesarean section.

The advent of antibiotics, chemotherapy and blood transfusion, rendering marked degree of safety to the mother not only in vaginal operations but for caesarean sections done even late in labour, the better understanding of the problems of asphyxia in the new-born, the appreciation of the aftermath of obstetric trauma to the mother and child brought about a change in the indications and technique of forceps delivery. These changing trends affected us also and falling in line with modern obstetrics the policy of the hospital also was revised. Emphasis is now laid on :

(1) Avoidance if possible of forceps application on living babies if the greatest diameter of head has not gone through the brim.

(2) Once a head has come on the pelvic floor even if there is no maternal or foetal distress, delivery by forceps, if maternal efforts have not been successful in completing delivery within half to one hour. The term elective or prophylactic forceps has been used to indicate delivery by forceps when there are no strict indications and indicated forceps when it is applied only on indication. The reason for prophylactic forceps is the appreciation over years of the damage that could be done to a baby's head if it is left on the perineum for a long time and also to the pelvic floor by continued pressure of the head. In modern obstetrics, foetal or maternal distress is not permitted to develop. As a result of this attitude, our incidence of forceps delivery during 1953-1957 was 8.4%, the perinatal mortality from forceps

delivery 12.6% as compared to 22.3% during 1934-1938. It was so high that it was and is, in

TABLE III

Period	Incidence percentage	Total no. of forceps deliveries	Perinatal mortality percentage	Maternal mortality percentage
1934-1938	7.0	1,427	22.8	4.6
1953-1957	8.4	4,269	12.6	0.7

I need hardly add that in a training hospital the incidence of operative deliveries is bound to be higher than in non-teaching institutions. This large reduction in perinatal deaths is mainly due to the avoidance of high forceps. It is realised that the perinatal mortality rate of 12.6% is high but it includes all cases. Most of these cases are emergency admissions brought in from outside after long hours of labour.

#### *Failed Forceps*

One of the features of modern obstetrics is the almost total disappearance of "failed forceps". During 1934-1938 there were 98 failed forceps with a maternal mortality of 33.3% and perinatal mortality of 96%. The changing trend has been to replace difficult vaginal deliveries by abdominal caesarean section and hence the category of failed forceps has become a rarity.

#### *Breech Deliveries*

De Lee once remarked: "Let me see a man conducting a breech delivery and I can give his obstetric rating." For long and even today an obstetrician is to a great extent assessed by the way he conducts a breech delivery. The foetal mortality from breech deliveries is cer-

most clinics, the rule that every attempt must be made to convert it into a vertex by external version during the ante-natal period. For no particular reason external version was not practised as a routine during the years 1934-1938 in this hospital; nor for that matter even now. The management was to deliver the breech from below unless there was a contra-indication in the form of a contracted pelvis when caesarean section was resorted to. Spontaneous breech delivery was hoped for but most of the cases were dealt with by breech extraction under general anaesthesia. Assisted breech delivery as we know it to-day was not a favoured procedure. In fact during the years 1934-1938 the incidence of breech extraction in 471 deliveries was 68%. The gross foetal mortality in breech delivery exclusive of prematurity, twins, placenta praevia, maternal toxæmia and hydramnios was 33.2%. During 1953-1957 there were 684 uncomplicated breech deliveries, and the gross total perinatal mortality excluding the above mentioned factors was 13.5%.

This is a very definite improvement, and what is more, if we split the last five years into year by year, one sees a progressive decrease

TABLE IV

Period	Total no.	Perinatal death rate %	Maternal death rate %	Caesarean section rate %	Breech extraction rate %
1934-1938	471	33.2	1.2	2	68
1953-1957	684	13.5	—	1.2	21

in perinatal mortality and during the last year it was 8%. This improvement could be due to two factors: (a) by increase in caesarean section rate, and (b) better technique or conduct of breech delivery.

It will be observed that in 1934-1938 the incidence of caesarean section for breech presentation was 2%. In the last five years the caesarean section rate was 1.2%. I am therefore convinced that the increase in caesarean section rate cannot account for the better results and hence it could be only due to the better technique of management. We have realised that assisted breech delivery gives better results than extraction. Our extraction rate has fallen to 21%. Hence, after a careful assessment of all factors, the decision is first taken whether a breech is to be delivered by vaginal route or caesarean section. Once a vaginal route delivery is decided upon, the breech is allowed to be born normally and assistance rendered in delivering shoulders and aftercoming head. It is almost a routine to induce anaesthesia by pudendal block as the breech distends the vulva and extraction is undertaken only when there is a definite indication. Non-engagement of the breech in labour, large baby, insufficient dilatation of cervix are

all taken as warning signs which may require caesarean section. Except for this, our technique of delivery as such has not undergone any change. However, we realise that most of the aftercoming head in a properly conducted breech delivery can be delivered by Marshall Burns technique aided if necessary by gentle supra-pubic pressure. We do not apply forceps as a routine to the after-coming head. But once the aftercoming head is well in the cavity and the simple technique mentioned fails the forceps is resorted to. This is not however common. I realise that even now our perinatal mortality in breech delivery is high. Other clinics have reduced it to 5-8% by resorting to a caesarean section rate of 10-12% for breech presentation. I must state here that I have made no attempts to correct the perinatal mortality rate. This rate of 13.5% includes all cases brought in from outside after long hours in the second stage. I have no doubt that were these patients in hospital prior to or at the onset of labour, suitable treatment could and would have been undertaken to save the baby. These types of cases constitute nearly 60% of the breech deliveries. A lot of improvement is still necessary. My only excuse is we are a teaching and training hospital and it has to

be admitted that a higher perinatal mortality may be the price we have to pay for the training.

#### *Internal Podalic Versions*

This is an obstetric art. The incidence of this particular obstetric operation has come down considerably.

the results.

#### *Rupture Uterus*

This is a very dangerous complication occurring in pregnancy and labour. While rupture in pregnancy is mainly the result of previous operation scars on the uterus giving way, in labour the major cause is prolonged and obstructed labour and trauma.

TABLE V

Period	Total no	Perinatal mortality rate %	Maternal mortality rate %
1934-1938	277	45.2	8.3
1953-1957	370	42.8	1.3

During 1934-1938 its incidence was 1.2% and associated with a maternal mortality of 8.3% and perinatal mortality rate 45.2%. In those days indications were many as caesarean section had a higher maternal mortality. An unengaged head was dealt with by high forceps or internal podalic version and extraction. In shoulder presentations it was the rule if the uterus was not tonically contracted. At present the indications are usually shoulder presentation with full cervical dilatation and enough liquor in the uterus and for a second of twins.

One remembers the days of Potter of Buffalo who delivered 90% of his cases by internal podalic version and the remaining 10% escaped version as they delivered before Potter appeared on the scene. We have indeed travelled a long way since then. Our incidence of this operation is now only 0.6%. But I am glad to state that this change has improved

Without going into the aetiological aspect of the problem I wish to point out that, during the years 1934-1938, almost all cases of rupture in labour were treated on conservative lines, namely delivery from below followed by packing of the rent in the uterus and treating the patient for shock and infection. Hysterectomy, if possible, was avoided as being more dangerous. The result was, out of 56 cases 42 died, a mortality rate of 75%. Of ten cases submitted to hysterectomy eight died. The years 1953-1957 saw a radical change in the management of these cases. The policy now is that all cases of complete rupture or suspected rupture, where vaginal delivery is not easy, are submitted to laparotomy. Hysterectomy or, under rare circumstances, suturing the rent and sterilisation are the lines of treatment adopted. I need hardly add that this operation is undertaken only when sufficient blood is available for transfusion. Shock and haemorrhage are

thus combated and antibiotics look after the infection. The result is that of 88 ruptures during this period 13 were lost, a mortality rate of 14.7%.

I do not propose to go into a discussion on the aetiology of these ruptures, whether they were avoidable or not. At the moment, I am concerned only in pointing out how the changing trends in treatment have benefitted us. At the same time I cannot help pointing out that such a large incidence of rupture occurring on a single obstetric service is a bad reflection on its ante-natal and intra-natal care. I blame none but point out that of these 88 ruptures 62 were brought into hospital after rupture. Of the remaining 26, 15 were due to scars of previous caesarean section giving way, five due to trauma and in the rest the rupture occurred in normal unobstructed labour in multi-gravidae. In modern obstetrics rupture uterus is preventable and is a rarity except when a caesarean scar gives way. We are still far away from such a happy state of affairs and hence we can console ourselves to some extent in that we have reduced the mortality rate due to this complication.

#### Caesarean Section

The improvements in technique and anaesthesia, the advent of antibiotics and blood transfusion have

given to major surgery a degree of safety never dreamt of before. With the safety there came into being a very great increase in the number of caesarean sections. Indications for caesarean section were modified and multiplied, difficult vaginal deliveries were replaced by caesarean section and it has become the habit to resort to caesarean section as the easiest method to get out of any obstetric difficulty. Many farsighted conservative obstetricians have written sorrowfully and worryingly against this intrusion into obstetrics by these obstetric surgeons.

During 1934-1938, the incidence of caesarean section was 1.1%.

During 1953-1957 its incidence was only 1.9%. This incidence, even though almost double that in 34-38, is well below the incidence in the majority of teaching hospitals in India and abroad, in spite of the fact that our maternal and perinatal mortality rates stand comparison with any institution in India. I say India because we have here other extenuating circumstances not existing in the west which make caesarean section more hazardous and our cases not comparable with those in the west. With the changing trends we find our swing to the lower segment operation; while in 1934-1938 its incidence was 30% in the 1953-1957 series its incidence is 85.5%. Quite

TABLE VI

Period	Total no.	Maternal mortality rate %	Classical section		L.U.S.		Rate
			No.	Mortality %	No.	Mortality %	
1934-1938	233	10.5	166	8.3	67	14.4	1.1
1953-1957	1000	2.7	145	3.4	855	2.5	1.9

a number of undergraduates and post-graduates of recent years have left this hospital without having seen a classical operation.

The mortality rate in the 1934-1938 series was 10.5%, in the 1953-1957 series it was 2.7%. Compared to modern standards it is high. I do not propose to dissect the cause of this mortality but wish to point out that insufficient amount of blood, non-availability of the blood at the proper time, have accounted for some deaths. It is not at all uncommon to find recorded on case-sheets; "Blood not available, so saline started". In my opinion these are avoidable deaths.

"We are all aware of the advances which have made it possible to reduce the foetal and maternal mortality to the levels which have been reached today, adequate prenatal care, improvements in operative technique and antisepsis, improved anaesthesia, the availability of blood for transfusions and antibiotics. The unwillingness to risk mother and baby by obstetric manoeuvres from below has also contributed to the reduction in maternal mortality rates. One wonders sometimes whether the principle has not been applied a little too enthusiastically. It would indeed be wise to do caesarean sections only on those patients in which it could be proved that caesarean section was absolutely necessary. Since this cannot be done we can reduce the foetal and maternal mortality only by doing

caesarean section on some cases in which caesarean section would probably have not been necessary. It is this "probably" which causes the difficulty. It is necessary to estimate the possibility of real trouble as accurately as possible with all the scientific means at our disposal. When we do this we will achieve what our betters achieved through art and add to this what science denied them but has granted us".

#### *Manual Removal of Placenta*

Twenty-five years ago this was considered a first class major obstetric operation and none but the senior obstetricians would do it and, if possible, every attempt was made to avoid it. The reason was that this procedure was associated with a very high maternal mortality and morbidity, shock, haemorrhage and infection being the main causative factors. In the absence of bleeding the placenta was permitted to remain in utero for hours and days together and forcible attempts at Crede's expression for a non-separated placenta was a common procedure. Our figures show that during 1934-1938 there were 124 cases of manual removal, an incidence of 0.6% and a mortality rate of 19.3%.

With the advent of antibiotics and blood transfusion and a better understanding of the physiology of the third stage of labour, it came to be an accepted procedure to avoid Crede's expression when a placenta was not

TABLE VII

Period	Total no.	Incidence %	Maternal mortality %
1934-1938	124	0.6	19.3
1953-1957	703	1.8	2.9

separated, to remove a placenta manually if it cannot be expressed within an hour of delivery even in the absence of bleeding and earlier if bleeding was present, and supplement the procedure with blood transfusion and antibiotics. As a result of this attitude, during 1953-1957, there were 703 manual removals, an incidence of 1.8% with a mortality rate of 2.9%. This mortality has all been among patients brought in from outside after delivery, bleeding and exsanguinated by haemorrhage with the placenta still in utero, most of them almost moribund. I would, however, like to sound a note of warning. While in certain American Clinics manual removal of placenta is considered a conservative method of management of third stage of labour, the obstetrician must be fully aware of the dangers of manual removal and its specific indications. The safety offered by transfusion and antibiotics should not be made the excuse for discarding well established obstetric principles.

#### *Post-partum Haemorrhage*

This is an obstetrician's nightmare. Years ago haemorrhage contributed to nearly 20% of all maternal deaths. Twenty-five years ago we had no efficient oxytocic like ergometrine, methergin, etc. Pituitrin was available and the B.P. preparation, injectio ergot liquidum. Blood transfusion as a service was unknown. The treatment of atonic haemorrhage was

therefore to inject pituitrin, inject ergot liquidum and continue to massage and squeeze the uterus. If the bleeding persisted cardiac stimulants were given, bimanual compression, uterine packing and vaginal packing were all resorted to after hot intra-uterine and vaginal douching, procedures which added more shock in a shocked patient. Saline or gum saline was given intravenously and sub-mammary saline was always given which, if the patient survived the haemorrhage, was incised and let out as pus, a few days later, in a number of cases. I remember once on night duty after the whole drill had been gone through and the patient continued to bleed, when I informed Dr. Mudaliar and asked for further advice, the answer came back "watch and pray". To-day it is a different tale. We have efficient and powerful oxytocics, a blood transfusion service and we have methods of avoiding shock and haemorrhage. The prophylaxis of post-partum haemorrhage starts in the ante-natal period and in modern obstetrics the maxim is no patient should be lost from haemorrhage. Blood coagulation defects in obstetrics is a new concept and its treatment with transfusion of blood, plasma, fibrinogen has saved lives which were all lost twenty-five years ago. The incidence of post-partum haemorrhage in 1934-1938 was 4.9% with a mortality rate of 8.3% while in 1953-1957 has been 1.4% with a mortality rate of 3.8%

TABLE VIII

Period	Total no.	Incidence %	Maternal mortality %
1934-1938	336	4.9	8.3
1953-1957	731	1.4	3.8

According to modern standards it is still high but we have a small consolation because most of these deaths have occurred in patients brought from outside having lost considerable amount of blood. This is one of the results of inco-ordinated domiciliary and institutional midwifery. Anaemia continues to take a heavy toll of our patients. 20% of maternal deaths are now due to anaemia and in another 20% it is a contributory cause. This does not, however, mean that there has been no improvements in our management of the condition. It only shows the shifting trends in maternal mortality.

The dread of puerperal infection is no more. 30-40% of maternal deaths in 1934-1938 was due to infection. Today with chemotherapy and antibiotics puerperal infection as such offers no problem. It now accounts for less than 5% of our deaths. Perhaps the safety afforded by antibiotics may make the obstetrician a little careless of the elementary principles of asepsis and antisepsis. This is something to guard against for no type of therapy can replace good asepsis and antisepsis. I have attempted to point out the improved results of the obstetric service in this hospital during the last five years. Advances in radiology have helped the obstetrician to a great extent in the proper management of complications by early diagnosis and appropriate treatment. Pelviradiography in all women with suspect pelvic contraction or disproportion, radiopelvimetry, soft tissue radiography to locate the placenta are some of the advances in radiology which were not available to the obstetricians during 1934-1938. These advances have

helped us to a considerable extent in adopting proper treatment at the right time.

Anaesthesia and analgesia in obstetrics have also undergone considerable change. Chloroform and C<sub>2</sub>E<sub>3</sub> mixture which formed the main mode of anaesthesia in 1934-1938 period do not find a place in hospital practice now. The present tendency is to use pudendal block anaesthesia as far as possible for all vaginal deliveries, be it a forceps or breech delivery. For caesarean sections if general anaesthesia is used, it is mainly gas and oxygen supplemented by ether. Local infiltration anaesthesia is employed in suitable cases. Due to the rush in delivery rooms, analgesia in labour is not a routine. But where it is employed we are now partial to a combination of chlorpromazine and pethidine.

Better understanding of the physiology of the foetus and problems of foetal anoxia have resulted in improvements in the management of asphyxia neonatorum. The hot and cold bath, the rigorous beating up of obstinate non-breathing babies, various types of artificial respiration and injections of the famous Scheel's fluid and other stimulants rarely find a place in modern management of asphyxia. Asphyxiated babies are now gently handled, kept with the head down, the throat is cleaned of mucus by suction through rubber catheter, oxygen is administered intranasally, or intragastric or in some cases after laryngeal intubation. Rigorous methods of artificial respiration are never employed, only rocking is permitted. Depression of respiration due to drugs like morphia and chlorpro-

mazine and pethidine is combated by injection of 1-2 mgm. of n-allyl nor-morphine into the cord. These methods have yielded good results.

I have not touched upon the advances in the field of gynaecology in this paper as I propose to put it up on another occasion. But permit me to point out that our advances in this field also have been considerable, may be perhaps more striking and more satisfying. In choosing these twenty-five years as the theme of my paper I was only attempting to unfold

a period in obstetrics through which a few of us assembled here have lived through which to the younger generation is a mystery.

It is my fond hope and I believe that I will be voicing the opinion of many of the younger generation that this paper will stimulate the older obstetricians assembled here to-night to give vent to their reminiscences. What the next 25 years will be in obstetrics I do not know. But I do believe that the longer we can look back the farther we can look forward.