The Outcome of Labour Following Previous Caesarean Section

A CLINICAL STUDY OF 144 CASES IN A ZAMBIAN COPPERBELT HOSPITAL

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SUMMARY

A series of 144 patients who had undergone previous caesarean section, treated in a modest maternity wing of a non-fee-paying section of a Zambian Copperbelt hospital, is presented. Favourable results, comparable to those achieved in developed countries, were obtained. Of 144 cases, 116 were selected as suitable for vaginal delivery, and 92 achieved this (79.3%), either spontaneously, or with assistance of a Ventouse forceps or symphysiotomy.

One mother was lost because of postpartum haemorrhage. Eight babies were lost in the series with a corrected mortality of 1.8%. Four patients ruptured the previous caesarean section scars; one of them was a classical section scar. The 144 cases were dealt with in a period of 18 months. Less than 50% of the patients regularly attended an antenatal clinic.

The high success rate was possible, in spite of unfavourable circumstances, because of the strict selection policy followed, viz. only a senior doctor was responsible for classifying the patients as either suitable or unsuitable for vaginal delivery, and because of strict vigilance by the senior nursing staff for possible rupture of the scarred uterus.

The experience of obstetricians in developed countries is that rupture of the lower segment caesarean section scar in labour is 'too uncommon'. This, I am afraid, is not the case in the less developed countries. Indeed, the caesarean section scar is still one of the major contributory causes of rupture of the uterus, and will probably remain so for a long time to come.

We believe that once a caesar 'not always' a caesar. This belief was strengthened by the observation we made, viz. that in many cases where cephalopelvic disproportion, small pelvis or prolonged labour was the main indication, the indication in the majority of these cases had been arrived at erroneously, mainly because of the inexperience of the obstetrician who had made the diagnosis. The reason for the inexperience has been discussed in a previous publication.

As a result of the observation, this policy was formulated: no patient was subjected to a repeat caesarean section, until she had been examined by a senior member of the medical staff. The patient, after such an examination, was classified as suitable or unsuitable for vaginal delivery. As the majority of our pregnant mothers often do not attend the antenatal clinic at all, this classification was in many cases made with the patients in the labour ward, during established labour. This made the assessment more difficult. This clinical assessment formed the sheet-anchor of management; abdominal palpation to estimate the size of the baby, and in selected cases, whenever possible, a straight X-ray of the abdomen was taken. A vaginal examination followed to assess the adequacy of the pelvis, and in a few cases, a lateral X-ray of the pelvis was taken to evaluate the configuration of the sacral curve and the promontory. The history leading to the previous caesarean section and the weight of the baby (whether it was born alive or dead, or died in the neonatal period) were noted. This information, when available was of vital value, but was often scanty or difficult to obtain due to many reasons, e.g. the language barrier or the patient just not knowing the correct answers, and so forth.

THE MATERIAL

The 144 cases forming the basis of the study and analysis in this series, were all patients who were delivered in the non-fee paying maternity section of the Kitwe Central Hospital. This section consisted of only 20 beds (for antenatal admissions, post-delivery cases and 4 labour beds). These patients were treated from June 1969 to November 1970. In the same period there was a total number of 5801 deliveries.

Of these 144 cases, 123 patients had caesarean section performed once; 13 on 2 occasions; 6 on 3 occasions and only 1 patient had been operated upon on 4 occasions (Table I).
TABLE I. FREQUENCY OF CAESAREAN SECTION DONE AND NUMBER OF PATIENTS

<table>
<thead>
<tr>
<th>No. of times</th>
<th>No. of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>123</td>
</tr>
<tr>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Unknown</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>144</strong></td>
</tr>
</tbody>
</table>

INDICATIONS FOR CAESAREAN SECTION

From the histories and available previous case records, the indications were grouped as follows: 13 patients were operated on for cephalopelvic disproportion, 3 for small pelvis, 8 for a big baby, 16 for transverse lie, 11 for prolonged labour, and in 45 cases the reason was not known. The remainder of the cases is as shown in Table II.

TABLE II. INDICATIONS FOR PREVIOUS CAESAREAN SECTION

<table>
<thead>
<tr>
<th>Reason/indication</th>
<th>No. of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>No reason given/unknown</td>
<td>49</td>
</tr>
<tr>
<td>Cephalopelvic disproportion</td>
<td>13</td>
</tr>
<tr>
<td>Small pelvis</td>
<td>3</td>
</tr>
<tr>
<td>Large baby</td>
<td>8</td>
</tr>
<tr>
<td>Prolonged labour</td>
<td>11</td>
</tr>
<tr>
<td>Foetal distress</td>
<td>3</td>
</tr>
<tr>
<td>Breech</td>
<td>3</td>
</tr>
<tr>
<td>Transverse lie</td>
<td>16</td>
</tr>
<tr>
<td>Others:</td>
<td></td>
</tr>
<tr>
<td>Twin pregnancy</td>
<td>5</td>
</tr>
<tr>
<td>Antepartum haemorrhage</td>
<td>7</td>
</tr>
<tr>
<td>Short</td>
<td></td>
</tr>
<tr>
<td>Bad obstetric history</td>
<td></td>
</tr>
<tr>
<td>Prolapsed cord/arm</td>
<td>17</td>
</tr>
</tbody>
</table>

AGE AND PARITY

One hundred and seven patients had given their ages as adult, and the reason for this has been discussed elsewhere. In the remainder the age and parity distribution is as shown in Table III.

TABLE III. AGE AND PARITY DISTRIBUTION

<table>
<thead>
<tr>
<th>Age</th>
<th>No. of cases</th>
<th>Parity</th>
<th>No. of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-19</td>
<td>4</td>
<td>1</td>
<td>32</td>
</tr>
<tr>
<td>20-24</td>
<td>18</td>
<td>2</td>
<td>33</td>
</tr>
<tr>
<td>25-29</td>
<td>10</td>
<td>3</td>
<td>32</td>
</tr>
<tr>
<td>30-34</td>
<td>4</td>
<td>4</td>
<td>18</td>
</tr>
<tr>
<td>35-39</td>
<td>1</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Adult</td>
<td>107</td>
<td>6+ over</td>
<td>19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>144</strong></td>
<td></td>
<td><strong>144</strong></td>
</tr>
</tbody>
</table>

SUITABILITY FOR VAGINAL DELIVERY AND OUTCOME OF LABOUR

One hundred and sixteen patients were found to be suitable for vaginal delivery, and 92 (79.3%) of these were successful. There were 28 patients classified as unsuitable for vaginal delivery; of these, 3 patients were delivered vaginally and the remaining 25 patients had a repeat caesarean section. The 24 patients who were not delivered vaginally had to be operated on again. The indications for the repeat caesarean section were as follows: 9 cephalopelvic disproportion, 6 prolonged labours or failure to progress, 2—foetal distress, 3—prolonged cord/arm, 1—failed vacuum, 1—ruptured uterus, 1—unstable lie, and 1 inertia. The ruptured uterus had a placenta praevia and a stillborn baby weighing 3.6 kg was extracted. The cause of the rupture of the uterus was due to an undiagnosed and unsuspected placenta prævía, which had eroded into the previous lower segment caesarean section scar.

The patient with the unstable lie, aged 35 years, had had 2 previous caesarean sections, the first at the age of 28 years, the indication on that occasion being a myomectomy scar and breech presentation. The second section was performed for inco-ordinate uterine action. With the present pregnancy she was found to have a variable lie on 3 occasions. The pelvis was of average size and so was the baby, but when admitted to the labour ward, the membranes had ruptured and the lie was oblique. After 8 hours of fairly good labour, the lie still remained oblique, and so the labour was terminated by a repeat caesarean section, without sterilization.

DETAILS OF THE SUCCESSFUL VAGINAL DELIVERIES

Table IV shows that of the 92 successful deliveries, 73 succeeded with the aid of an episiotomy, 12 cases required to be assisted with a vacuum extractor (Ventouse), and 2 required the assistance of an outlet forceps (Wrigley's). While in 1 case no details were given, the remaining 4 cases required a symphysiotomy, aided by either a Syntocinon drip alone, or with the addition of a Ventouse.

TABLE IV. DETAILS OF SUCCESSFUL VAGINAL DELIVERIES

| Vaginal delivery + episiotomy | 73  |
| Vaginal delivery + forceps    | 2   |
| Vaginal delivery + Ventouse   | 12  |
| Vaginal delivery + Ventouse + Syntocinon drip | 4   |
| Vaginal delivery + Symphysiotomy | 1   |
| Details not given            | 1   |

**Total 92**
SYMPHYSIOTOMY CASES

A para 1, aged 25 years, indication for the primary caesarean section unknown, required a symphysiotomy and an episiotomy. She delivered a live infant weighing 3.1 kg.

A para 1, cephalopelvic disproportion was the indication for the primary caesarean section with a small baby, weight not known. The present baby weighed 2.2 kg.

A para 3, aged 21 years, had a section done for the third baby, both the indication and the birth weight not known; and a symphysiotomy was done for contracted inlet. A vacuum extraction was performed and a live infant weighing 3.5 kg was delivered.

A para 2, aged 21 years, was sectioned in the first pregnancy but both the reason and the baby's weight are not known; she had a normal vaginal delivery in the second pregnancy, but again the weight of the baby is not known. A symphysiotomy was done for a reduced inlet during the present labour, and the delivery was assisted with a Ventouse. A live infant weighing 3.4 kg was delivered.

UNFIT FOR VAGINAL DELIVERY

There were 28 patients classified as unsuitable for vaginal delivery. Three achieved vaginal delivery.

A para 5, who had caesarean sections for the first and second pregnancies, the indications for which were not known. On admission on this occasion, the head was engaged, labour was allowed to proceed and a live infant weighing 3.2 kg was born normally. The lower segment was intact on digital vaginal exploration.

A para 3, with 3 previous sections was admitted in an advanced stage of labour. A spontaneous vaginal delivery of a live infant weighing 3.1 kg resulted. The lower segment was also found intact.

A para 6, age unknown, had caesarean sections for the second and the fourth pregnancies. The indications in both cases were not known. She was admitted in labour with the head engaged; labour was allowed to proceed and she had a spontaneous vaginal delivery of a baby weighing 2.8 kg. The lower segment was found intact on digital vaginal examination.

The remaining 25 had repeat caesarean sections done. Ten were sectioned once, 11 had the operation done twice, 4 had it done on 3 occasions and only 1 case had the operation performed 4 times (sterilized on the last occasion).

RESULTS

Maternal

Mortality. A mother was lost in this series. A para 2, age unknown, had a normal delivery in her first pregnancy; a classical caesarean section was done for the second pregnancy, the indication unknown.

On admission on 23 February 1970 at 0200, she said foetal movements had ceased 2 days previously, and labour had started the day before. At 0315 when she was assessed, the diagnosis of intra-uterine death and a small pelvis was made. At 0400 a laparotomy was done (the Hb concentration at the time was 6.89 g/100 ml). A repeat caesarean section was done, but the operation was somewhat difficult, as troublesome bleeding at the lower end of the uterine wound, where the bladder had been adherent, was encountered. A macerated baby weighing 2.3 kg was delivered. Postoperatively she received blood. At 1000 the patient's condition was reported to be poor, and she was found to have had a post-partum haemorrhage. Immediate resuscitative measures were instituted but to no avail. The postmortem report stated the cause of death to be due to shock caused by post-partum haemorrhage.

Ruptures. Five ruptures of the uterus were clinically diagnosed, but only 4 were confirmed on laparotomy.

A para 3, with the primary section done for antepartum haemorrhage, was thought to have ruptured; but this was not confirmed on laparotomy and a live infant weighing 3.6 kg was delivered.

A para 1, who had had a classical section done previously arrived in the labour ward with no foetal heart heard. At laparotomy a dead baby weighing 2.7 kg was found extruded into the abdomen, with the uterus ruptured along the previous section scar and involving the bladder. The repair of both the uterus and bladder was successfully done.

A para 2, with the second pregnancy terminated by caesarean section for a transverse lie, was delivered by a Ventouse. Exploration of the lower segment showed a tear; a laparotomy was done and the rupture repaired. The weight of the baby was 2.8 kg.

A para 1 had a primary section for cephalopelvic disproportion and foetal distress. A repeat caesarean section was done to terminate the labour, as she was considered unsuitable for vaginal delivery. The lower segment was found to have ruptured, and the rupture was repaired after a live infant weighing 2.7 kg was extracted.

A para 1, classified as suitable for vaginal delivery, had labour terminated when rupture of the uterus was diagnosed. Primary caesarean section was done for placenta praevia, and a baby weighing 3.6 kg was delivered. The rupture was successfully repaired.

Retained placenta. There were 2 cases in which the placenta was retained. In both cases the placentae were removed manually in the labour ward, after 15 mg of Valium was given intravenously.

Classical caesarean section. Four patients were known to have had classical caesarean section. All were classified as unsuitable for vaginal delivery. One did not survive the labour (see first paragraph). The remaining 3 cases arrived at hospital in established labour.

A para 1 arrived with no foetal heart sounds. Diagnosis of uterine rupture was made. At laparotomy, the rupture was confirmed and the dead baby was lying free in the abdomen. The bladder was also ruptured; both the uterus and the bladder were repaired.
A para 3 with no living child was admitted with blood- 
stained urine and excessive 'show', and a rupture was 
diagnosed. An immediate laparotomy was performed, and 
a live infant weighing 2.7 kg, delivered. She was not 
stereilized.

The fourth and last case, was a para 2, with 2 previous 
classical caesarean sections for 'contracted pelvis'. The 
rupture occurred while she was being admitted. She was 
hurriedly taken to theatre, where the previous section 
scar was found ruptured. A live baby weighing 3.2 kg 
was delivered. She was also not sterilized.

Sterilization. Two mothers were sterilized. The first 
patient was a para 3, all children alive. On this occasion, 
an elective repeat section was done, and she requested 
to be sterilized. The second patient was a para 4, with 
all her pregnancies delivered by caesarean section; the 5th 
baby was again delivered by a caesarean section, and her 
tubes were tied on request.

Foetal

There were 147 babies delivered in this series; 141 
singletons and 3 sets of twins.

Eight babies were lost; 3 were macerated and 3 were 
stillborn; 1 baby weighing 2.2 kg died in the neonatal 
period. It is not known specifically when the eighth baby 
died; 2 of the macerated stillbirths were born before 
arrival at the hospital.

One hundred and thirty-nine babies were born alive 
in this series. Sixteen babies weighed 2.4 kg or less; while 
for 13 the weights were not stated.

DISCUSSION AND COMMENTS

The results obtained in this series are favourable and 
couraging, in spite of the inherent multiple difficulties. 
Certainly at this stage of our development, we cannot 
hope to equal or emulate the results of obstetricians in 
the developed countries.

Our expectant mothers do not, for instance, attend 
the antenatal clinics. In this series, less than 50% attended 
clinics. In this respect, Lavery's 56% and Lucas et al.'s 75% 
are to be envied; presumably, McGarry's and 
Brownes' patients all attended clinics. This is ideal, but 
we are still a long way from achieving it.

The developing countries lack continuity of service by 
experienced trained staff, which the developed countries 
enjoy. This lack of staff is closely correlated with the high 
incidence of the caesarean section rate. The more 
pregnant mothers we admit with a previous history of 
caesarean section, the more shall we expect complications 
when these patients go into labour; the vicious circle being 
perpetuated.

One mother was lost as a direct result of a repeat 
caesarean section, who should not have been lost; the 
shortage of skilled senior nursing staff played an import­ 
ant role in this case. Brownes lost one mother, the cause 
of death being bronchiectasis, while Lucas, in an en­ 
vironment almost similar to ours, had no maternal deaths. 
Lavery also had no maternal deaths.

In this series, 4 patients ruptured previous caesarean 
section scars. One of these was a classical section scar. 
Browne had only 3 partial ruptures; Lucas et al. had 8 
ruptures, 3 of these being classical section scars, while 
Lavery in South Africa had 10 ruptures, 2 of these being 
partial ruptures. This certainly will be our lot for a long 
time to come, and we therefore differ from McGarry in 
Scotland when he says this accident (rupture of a previous 
caesarean section scar) is 'too uncommon'. We therefore 
watch all patients with a history of a previous caesarean 
section very carefully when in labour, for rupture is a 
killing accident.

There were 141 singletons and 3 sets of twins delivered, 
making a total of 147 babies. Sixteen of these were 
2.5 kg or less in weight, while 13 did not have their 
weights recorded. In this series, 139 babies were alive, 
94.5%, with 8 babies dead (3 were macerated stillbirths). 
The corrected foetal loss is 1.8%. In somewhat similar 
circumstances, Lavery had 93.4% live babies, while the 
figure for Lucas et al. was 94.1% live babies and the 
loss was 6.6% McGarry in favourable circumstances had 
a foetal loss of macerated triplets, a corrected foetal loss 
of 0%.

In developed countries, the trend nowadays is that 
after 2 caesarean sections an elective repeat section is 
done, with tubal ligation (sterilization). We have very 
strong social customs prevailing, and therefore this 
practice is not followed, unless the mother requests to be 
sterilized, as was the case with 2 mothers in this series.

The complications that are encountered when a mother 
with a previous caesarean section scar goes into labour 
are certainly many and serious, as compared to an elective 
section. It is still universally held that a vaginal delivery 
is preferable. Of the 144 cases, 116 (80.6%) were selected 
for vaginal delivery and 92 (78.3%) did achieve vaginal 
delivery. This compares favourably with McGarry's 72,5% 
and Lavery's 72.9%. If this is expressed for all 
previous sections in the series, we had 95 (65,9%) achiev­ 
ing vaginal delivery, and McGarry had 58,3%, Lavery 
50,1%, while Lucas et al. had 69,3%.

Mothers had to be assisted in many cases. All had epi­ 
siotomies performed. Twelve mothers in addition had 
vacuum extraction in the second stage or when able to 
be delivered, while 2 patients were assisted with forceps, 
a very small number compared to other workers. Mid­ 
cavity forceps are not suitable in the type of pelvis 
(android and flat sacrum) we meet here. A further 4 
patients required multiple assistance from a Ventouse, 
Syntocinon drip and symphysiotomy. A symphysiotomy is 
a useful operation. The use of Syntocinon drip to 
assist or augment labour is used whenever the occasion 
arises. We do not subscribe to the policy that oxytocic 
drips are contra-indicated in patients with a previous 
caesarean section scar. We agree with the views ex­ 
pressed by McGarry.

With these figures we feel that even in somewhat 
modest maternity institutions, there is a place for allow-
ing patients with previous caesarean section scars to be delivered vaginally, provided the selection of cases is done carefully and the ever present danger of rupture of the uterus is borne in mind.

I wish to thank the Permanent Secretary for Health, Dr M. M. Nalumango, for permission to publish.

REFERENCES

Factors Affecting Change in Health Orientation in a Developing Community*

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SUMMARY

There is a need for more factual information to create cultural understanding between the different ethnic groups in South Africa. Resistance to change is caused by several factors; lack of sensitivity towards the culture of those to be educated often causes a barrier. The late Beryl Roberts, a tireless worker in health education, asked several questions about the perception of health problems in a given culture. These questions are applied to South Africa and particularly to the Bantu community. The system of health beliefs of the Bantu is examined in order to elucidate some of his health behaviour. A brief discussion of the practical educational methods and principles which need to be applied in order to modify health behaviour concludes the article.


Derryberry' in 1960, described health educators as agents of planned sociocultural change, and as such, concerned with a wide variety of personality and sociocultural variables related to attitude and behaviour change. In the Republic of South Africa with its 7 main Bantu ethnic groups representing 14 893 000 people (according to our 1970 population census), a very large number of personality and sociocultural variables affect attitudes towards health.

The effect of these variables should be considered before embarking upon programmes of health education. There is a need for more factual information required to bridge the cultural chasm between the different ethnic groups. In any analysis of resistance towards change displayed by developing people, several factors repeatedly occur, such as lack of understanding or sensitivity towards the cultural feelings and behaviours of the people displayed by zealous educators; basic differences in the belief systems of the educator and those to be educated; the barrier of status between educator and those to be educated; and the problem of being judgemental. So often behaviour is judged without attempting to understand experiences and behaviour from the viewpoint of the people concerned, or as an expression of their accepted norms of behaviour. A further recurrent factor is the lack of acceptance of the holistic concept of community integration and social structure.

In a study of health education we are told that the fundamental principle is that we should study and know the community. Alexander Leighton' tells us that people everywhere have systems of belief which influence their behaviour. These are in part logical, cultural or personal/emotional. These beliefs satisfy aspirations, and allay the fears of the individual. The most deeply ingrained and unchangeable beliefs are usually rooted in the last 2 factors.

The application of logical reasoning fails to remedy emotionally derived conditions. Logic cannot change behaviour which is blocked by the emotional satisfaction

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