GURKHA OBSTETRICS AND PERINATAL MORTALITY IN THE NEW TERRITORIES: HONG KONG
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SUMMARY: Comment is made on the special problems of Gurkha obstetrics. The reasons for perinatal mortality (rate 21.5/1000) are examined and means of reducing the number of deaths are discussed.

Introduction
Most of the army personnel in the New Territories (NTs) are Gurkhas. Each of the units is allowed a proportion of its Gurkha officers and men to live in married quarters with their families. Up to the rank of sergeant, families are only allowed to accompany the soldier, for a maximum of three years during his 15 years service. It is during these three years that most couples plan to have their two or three children.

The importance of children, particularly sons, cannot be overstressed. They act as an insurance policy for the future. Nepal has no social welfare system!

The figures quoted below involve a period of 15 months, between 1 January 1977 and 31 March 1978.

Geography and transport
The NTS are part of the Chinese Mainland leased to Britain in 1898, for a period of 99 years. The Gurkha units are scattered around the NTs at varying distances from the Group Practice central Medical Reception Station (MRS).

During the 15 months under review, the units located within the area were:
(a) The Queens' Gurkha Engineers (QGE). (b) 1st/2nd Gurkha Rifles (GR). (c) 2nd/2nd Gurkha Rifles. (d) 10th Gurkha Rifles. (e) Training Depot Brigade of Gurkhas (TDBG). (f) Headquarters and Signal Squadron Gurkha Field Force.

Ambulances when required by the unit's Gurkha Family Hospital (GFH) must be summoned from the group practice (the QGE have their own ambulance). The average time from leaving the group practice to picking up the patient and arriving at the British Military Hospital (BMH) is one and a half to two hours depending on traffic conditions, which gives an indication of the scope of the area covered by the group practice.

Emergency obstetrics may necessitate the use of a helicopter. Although the flying time to each GFH is short (approximately 15 minutes), organisation of the flight usually takes considerably longer. Therefore time of transfer of a patient to BMH may, depending on circumstances, take from 30 to 75 minutes. Helicopter service is provided by the Royal Air Force. The Royal Hong Kong Auxiliary Air Force assists on occasions.
**Gurkha family hospitals**

There is a delivery room in each GFH. The basic equipment enables safe delivery of a baby to be carried out, provided no serious complications arise. Resuscitation equipment is available should it be needed. The individual GFH is part of the particular unit. It is staffed by the unit employed Gurkha midwives. The Officer Commanding is the unit Medical Officer (my own unit was 2nd/2nd GR). There is great variation in the ages and experience of the midwives, but most are trained in both general nursing and midwifery. Because of the structured hierarchy of the Nepali people in general, great respect is shown to the midwives both by the soldiers’ wives, and by the soldiers themselves. Their authority in obstetric matters and in the day to day running of the hospital is accepted almost without question.

**Obstetric policy**

The BMH policy is that first and fourth or more babies should be routinely delivered in the hospital. All other pregnancies which are considered to be complicated, and those women with poor obstetric history, should also be delivered at the BMH. Remaining pregnancies involve delivery at the GFH, unless an emergency arises. The important decision to be made by the attending medical officer or midwife is whether or not there is more danger in transferring a patient with an unexpected complication, than in keeping her at the GFH.

**Antenatal care**

Patients are looked after jointly by the obstetric department at the BMH and the unit medical officers. The first hospital appointment is at 14 to 16 weeks, provided the individual woman reports her pregnancy to the midwife early enough. Visits to the hospital are then usually at 28, 32, 36 weeks and close to term. They are more frequent if the pregnancy is complicated.

Gurkha women are notoriously bad at determining their dates. It comes almost as a surprise to some that they may actually be pregnant. Their calculations, based on the last menstrual period may often be as much as two months out. A number of women have no period between pregnancies. In some cases their suspicion of pregnancy is probably only due to increasing abdominal distension. Surprisingly, some women flatly deny the usual symptoms of early pregnancy such as nausea and frequency. Breast feeding of the previous child may still be going on. The net result is that the initial booking at the GFH clinic is very often later than 12 weeks. This occurs despite the order, which in my battalion’s case, states that “Any family, failing to report a pregnancy during the first three months, will be sent back to Nepal 60 days after the birth of the child. Such families will never be allowed back into family lines. Severe disciplinary action will be taken against the soldier”.

The most common antenatal condition requiring treatment is anaemia. Iron and folate therapy is given routinely. However, double dose oral iron, intramuscular iron and total dose infusion of iron are often necessary to maintain the haemoglobin reading at acceptable levels. Hookworm infestation is nearly 100
per cent in BMH admissions. This almost certainly accounts for much of the anaemia. Nutrition, although good when within the Army, is generally poor while the women are living in Nepal.

**Labour**

Gurkha women are remarkably uncomplaining. It is a fairly frequent occurrence for pregnant wives to report to the GFH in the first stage of labour. Rarely, a baby has been delivered in quarters. On one occasion delivery was affected outside the front door of my GFH. Despite suitable chastisement, the patient usually claims she was unaware that labour was so far advanced. If the husband is not in the quarter for any reason, the wife often feels that she must wait for him to return before presenting herself. Women reporting late, who have had normal pregnancies, but are booked for BMH are delivered at the GFH, if it is felt safer to do so. The midwives, or medical officer on duty take such decisions. The possibility of an ambulance delivery must always be considered, and avoided (see below).

**Number of Gurkha women**

The total number of Gurkha women in the NTs during the period of 15 months under review was approximately 1375. A small number of women do not wish to have any more children. They have usually undergone sterilization or are taking the contraceptive pill. Tragically, some couples are infertile (experience in my battalion suggests that perhaps in 50 per cent of such couples abnormal spermatogenesis is the cause). Many women will have two children while in Hong Kong and be pregnant again before they return to Nepal.

**Perinatal mortality**

The present definition includes stillbirths and early neonatal (1st week) deaths. In England and Wales there is no lower birth weight limit, although one may be introduced soon. During the 15 month period of observation there was a total of 698 births with 15 perinatal deaths (a perinatal rate of 21.5/1000). The 15 deaths comprised eight stillbirths and seven neonatal deaths. Details are shown in Table I.

**Discussion and conclusions**

Because of the distance, transfer of patients to BMH for delivery must always be considered carefully. In the majority of cases it is the Gurkha midwives who make such decisions. The midwife on duty or the medical officer determine what is the safest action for both mother and child. It is, in fact, often safer to deliver the baby at the GFH rather than try and rush the woman to BMH purely because it has been so arranged. If a difficult delivery is anticipated, a helicopter can be summoned ready to take the neonate to BMH should it prove necessary.

Both the infants which were delivered by midwives in the ambulances, reached BMH alive, but each succumbed within 24 hours of arrival. The premature infant
was delivered within half an hour. In this case the cervix was only 1 cm dilated at the outset of the journey. Although delivery in the ambulance was probably not the main causative factor in the deaths, it certainly may have been contributory in each case.

The birth of a healthy infant depends on good antenatal care and safe delivery. The latter in relation to Gurkhas has been briefly discussed. The patients require close watching during the antenatal period because of the special factors involved viz:

(a) Increased incidence of anaemia. (b) Arrival from Nepal as late as 32 weeks. (c) Relatively greater numbers of women having their fourth or more babies. Good antenatal care ensures that, as far as possible, fetal weight is compatible with gestation age. Estimation of oestriol levels, and ultrasound screening enables maturity problems to be assessed.

In general, reduction in numbers of perinatal deaths will be in advances being made in two major fields:

(a) Prevention and management of prematurity. (b) Prenatal diagnosis of congenital malformations.

The latter includes amniocentesis screening on high risk groups, those women who have previously had a malformed infant. Also screening of maternal serum for raised X fetoprotein levels may become routinely possible. (Detection of fetuses with neural tube defects, for example spina bifida, may be achieved). In this survey, four out of the 15 perinatal deaths were caused by congenital malformations.

### Table I
**Details of perinatal mortality**

<table>
<thead>
<tr>
<th>Definition</th>
<th>Case No.</th>
<th>No. of baby</th>
<th>Where born</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stillbirths—8</td>
<td>1</td>
<td>1st BMH</td>
<td>Premature 28 weeks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1st BMH</td>
<td>Assisted breech 36 weeks</td>
<td></td>
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<tr>
<td></td>
<td>3</td>
<td>2nd BMH</td>
<td>Contracted pelvis/breech</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>4th BMH</td>
<td>Known intra-uterine death 32 weeks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>2nd GFH</td>
<td>Not known</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>2nd BMH</td>
<td>Anencephalic</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>2nd GFH</td>
<td>Congenital malformations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>1st BMH</td>
<td>2nd of undiagnosed twins</td>
<td></td>
</tr>
<tr>
<td>Neonatal—7</td>
<td>1</td>
<td>2nd GFH</td>
<td>Multiple abnormalities</td>
<td></td>
</tr>
<tr>
<td>Congenital abnormalities—4</td>
<td>2</td>
<td>2nd GFH</td>
<td>Spina bifida</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>(The total of 4 includes cases 6 and 7 above)</td>
<td></td>
</tr>
<tr>
<td>Others—5</td>
<td>1</td>
<td>2nd BMH</td>
<td>Fetomaternal disproportion.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>3rd Ambu-</td>
<td>PM=Cerebral haemorrhage</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>lance</td>
<td>PM=Pneumomediastinum</td>
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<tr>
<td></td>
<td>3</td>
<td>1st Ambu-</td>
<td>PM=Cerebral haemorrhage</td>
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<td></td>
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<td>lance</td>
<td>31 weeks.</td>
<td></td>
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<tr>
<td></td>
<td>4</td>
<td>4th BMH</td>
<td>Cot death</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>3rd BMH</td>
<td>PM=Pulmonary oedema</td>
<td></td>
</tr>
</tbody>
</table>

(Post mortem examinations were not carried out on all infants).
Perinatal mortality in the NTs can be reduced by trying to ensure that deliveries other than in the GFH and BMH, do not occur. To this end the experience and authority of the Gurkha Midwives is paramount. A wife must report as early as possible in labour if the eventual delivery is to be unrushed and safe. It is recommended that Medical Officers, before their attachment to Gurkha Units, should have carried out a six month obstetric job at a recognized centre.

The present organization of obstetrics in the NTs provides adequate care for pregnant Gurkha women. Although complacency is to be avoided, it is considered that perinatal mortality during the period under review, was within acceptable limits.

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REFERENCE

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