

# Burundi: childbirth in a developing country



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Pregnancy and childbirth vary throughout the world and in many developing countries they are influenced by traditional practices. Sue Chadney describes some such observations from the time she spent working in Burundi.

Throughout the world women experience pregnancy and childbirth. The care they receive is a product of many factors including the culture of their country, especially when healthcare provision is supplied by traditional birth attendants who invariably apply age-old practices to maternity care. This subject has been extensively explored, for example by LeFeber and Voorhoeve (1998). Professional practice is also dictated by factors of culture, geography, socio-economic phenomena and history. What follows is an account of some of the clinical procedures and beliefs practised by professionally trained healthcare workers in an area of Great Lakes Africa, as observed and discussed while working with Médecins Sans Frontières (MSF) for a basic healthcare project in the province of Kayanza in Burundi.

Burundi is classified by aid agencies as a 'post-conflict situation' (Médecins Sans Frontières, 2005). It is a small country in the Great Lakes area of central Africa that underwent colonisation briefly by the Germans, then by Belgium, before gaining independence in 1963. The population consists of two main ethnic groups – the Hutus who form 85% and the Tutsis who form 14%. An ethnic minority group, Twa pygmies, make up the remaining 1% of the population.

From 1965 onward, Burundi has endured waves of ethnic-based violence, culminating in the civil war of 1993 to 2003 during which an estimated 100 000 people died in a 'slow trickle genocide' (Jennings, 2001). This ten-year conflict has left behind a legacy of psychosocial and economic damage. Healthcare facilities have been destroyed and access to medical care significantly reduced through continuing insecurity and poverty (Médecins Sans Frontières, 2004; World Bank, 2004). The civil war interrupted the training of healthcare professionals and caused the deaths of countless trained personnel, which has resulted in the number of doctors per inhabitant falling from 1:25 000 in 1990 to 1:35 000 in 2002 (Médecins Sans Frontières, 2004).

Most healthcare professionals prefer to either work in other countries or in the capital. There are fewer facilities, including the basics of running water and electricity in provincial hospitals and rural areas, and there is a higher level of insecurity and rebel group attacks. There is no tradition of specifically trained midwives in Burundi – maternity care is carried out by

different categories of nurses who have received between two and three years training and 'aide-infirmieres' who perform many of the institutional deliveries and have received one year's training.

Burundi has a total fertility rate of 6.3 per 1000 and a maternal mortality rate of 1300 per 100 000 live births (United Nations, 2001), although the potential inaccuracy of the data, due to the civil disorganisation as a result of the war and the factor of unregistered domiciliary births, is acknowledged. The Institut de Statistiques et d'Etudes Economiques du Burundi (2003) states that 71% of births are unsupervised by trained personnel and take place in the home by registered or unregistered

traditional birth attendants. The remainder take place either in poorly staffed and equipped rural clinics, in small hospitals supported by religious orders or in larger, but only marginally better equipped, regional hospitals. The infant mortality rate is high, with the principle causes of death being malaria and diarrhoea.

While practices inevitably differ between workers and institutions in a country with unsupervised clinical standards, certain commonly-held clinical beliefs were observed and are recounted below, beginning with the management of problems in early pregnancy and ending with aspects

of neonatal care.

Women with threatened abortion frequently present at clinics, many caused by malaria. Burundi lies within an endemic malaria zone giving rise to recurrent bouts of the parasitic disease in patients with lowered immunity, such as pregnant women. Another contributory factor is the high incidence of untreated sexually transmitted diseases among the population. In addition to prescribing medication for any suspected underlying infection – although diagnoses remain largely unconfirmed due to lack of laboratory facilities – the nurses who staff the clinics routinely prescribe oral hyoscine butylbromide (Buscopan). This treatment is based on the known smooth muscle relaxant properties of this compound that practitioners believe diminish uterine contractions, hence arresting the progress of a threatened abortion.

Pharmacology formularies such as the *British national formulary* (BNF) (British Medical Association and Royal Pharmaceutical Society of Great Britain, 2004) do not support this hypothesis and neither do clinical guidelines



A mother with her baby in the maternity ward at Musema Hospital, Burundi

written for use in developing countries (Pinel, 2002; Blok, 2003). The latter recommends Buscopan solely to reduce the muscle spasms caused by diarrhoeal disease and gastrointestinal tract infestations. The same texts warn against the use of Buscopan in late pregnancy. In Burundi it is widely used in the third trimester for lumbar and ligamental pain, instead of giving simple analgesia or physiologically-based lifestyle advice. It remains, however, a cheap and easily available drug and will no doubt continue to be prescribed for these pregnancy problems in Burundi, despite the lack of a pharmaceutical evidence base.

With no availability of intensive neonatal care in Burundi, nor of medication to promote lung maturity, healthcare staff are acutely aware of a poor prognosis for any preterm baby, hence the need to arrest preterm uterine contractions. Western medicine provides a selection of tocolytics with continuous clinical studies to realise the most effective pharmacology. In countries with few resources, the beta 2-agonist Salbutamol is readily available and so is the tocolytic of choice by default. This is prescribed in the rural clinics as an oral medication for use at home for five to seven days, despite the recommendation of intravenous administration for 48 hours as an effective treatment (British Medical Association and Royal Pharmaceutical Society of Great Britain, 2004; Pinel, 2003). For the few women who are transferred to hospital and can pay for treatment, intravenous Salbutamol is invariably followed by five days oral supply. Prolonged therapy is advised against in the BNF (2004) as it increases the risk of side-effects to the mother and does not have proven clinical effectiveness. There is little recording of outcomes from hospitals or clinics, so neither the clinical effectiveness of this drug strategy nor cases of side-effects can be assessed.

Tetanus, caused by the toxin of *Clostridium tetani*, is responsible for 50% of infant deaths in Africa (Blok, 2003). Neonatal tetanus is entirely preventable by vaccination of the woman during pregnancy. The administration of the anti-tetanus vaccine is a priority during antenatal consultations in Burundi with the aim of administering at least two doses, with an interval of at least four weeks. This results in a neonatal protection rate for three years of over 85%.

Various factors conspire against the achievement of this goal by healthcare workers in Burundi. As 25% of women only present for one antenatal consultation and that, from personal observation, is at approximately 36-weeks' gestation, the likelihood of them receiving the two necessary doses is low. Additionally, in a resource-poor country such as Burundi, the cold chain frequently breaks down, perhaps due to lack of petrol for the fridge or insecurity preventing a trip



to the vaccine store to replenish supplies – thus often vaccines are unavailable even when women attend correctly and in time.

Although many rural Burundian women are unaware of the date of their last menstrual period, or perhaps have not menstruated since their previous delivery, there are occasional clinical indications to induce labour. These may include a known post-maturity and intrauterine death where labour does not spontaneously begin. With

no prostaglandin preparations available, cervical 'ripening' is effectuated in primiparae by the insertion of a large-size Foleys catheter into the vagina with the tip, that is, the balloon, inside the cervix. The balloon is filled initially with the amount of water recommended by the manufacturer, then additional millilitres are added over 24 hours. When the catheter falls out, it is either due to the balloon bursting or to initial cervical effacement and dilatation. I have observed this method being unexpectedly effective!

Where pharmacological induction of labour is deemed necessary and in the absence of oxytocics, medical practitioners in this area of Africa are reported to use intravenous quinine. Oral and parenteral quinine is used routinely for the treatment of malaria caused by the parasite *Plasmodium falciparum*, however, I have found no clinical or pharmaceutical text to reveal any reference to its use as a uterine stimulant (British Medical Association and Royal Pharmaceutical Society of Great Britain, 2004; Pinel, 2002). However, the International Union for the Scientific Study of Population (1998) and the Marxists Internet Archive (2004) have documented the 19th century use of quinine as an abortifacient. The administration of high doses produced toxicity causing cardiac arrhythmias and convulsions, which in turn provoked an abortion. I presume this to be the clinical basis for its use to stimulate labour, albeit at an unknown cost to mother and baby.

Once a woman presents in spontaneous labour at a clinic or hospital, little monitoring of mother or fetus takes place. There is an official 'partogramme de Burundi' that is seldom available or used. Pinards stethoscopes are widely used, often having been donated by a charity, church or aid agency, with the fetal heart noted as simply positive or negative – the relevance of rate and rhythm are not taught as being significant. When there is no progress to a normal delivery following full dilatation with the presenting part in low cavity with expulsive contractions and maternal effort, practitioners employ fundal pressure to achieve a vaginal delivery, mainly when there is no option of operative delivery or transfer. In the Great Lakes area, among French-speaking professionals, this is called the 'manoeuvre de chrystalline' – I was

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unable to establish the origin of this term. MSF acknowledges this practice as one 'to be used with caution, and only in rural and isolated situations' (Pinel, 2003 – translation). The technique employed is directed in this manual: 'Using two hands flat on the fundus, push downwards with moderate pressure at the same time as the woman pushes with a uterine contraction' (translation). However, I once entered a delivery room in Burundi to find a nurse astride the woman on the delivery bed, facing the perineum and exerting fundal pressure with all her weight and might. Sadly, on this occasion, the baby was stillborn.

The materials and skills appropriate for neonatal resuscitation are not easily available to healthcare workers, and the most common practice observed was to stimulate and drain secretions by holding the neonate by the feet and slapping the buttocks. When a neonate does not respond to this action, two further actions normally take place. Firstly, the baby is lain down on a table and oro-nasal suction is performed using a 'poire d'aspiration' – a rubber device the shape and size of a pear – that is inserted superficially into the mouth and nostrils and compressed manually to exert suction. The 'poire' is washed out with chlorhexidine solution between uses, but not sterilised, so the risk of cross infection, notably the transmission of HIV, is evident.

The second intervention is for the healthcare worker to put some pure alcohol in her palms and rub this on the neonate's abdomen and back. When asked to explain the reason for this action, the universal reply was that it stimulated respiration. There is an obvious clinical logic to the tactile stimulation, perhaps also to the application of cold alcohol shocking the baby into breathing, but I also discussed this common practice with a European doctor who had worked for many years in Africa. He related that in developing countries without sophisticated health care and lacking most medications, patients with pulmonary oedema and asthma may be treated with inhalations of alcohol that engender a bronchodilating effect. This practice has become internalised and applied routinely to other respiratory problems, including lack of respiratory effort in neonates, in the belief that the alcohol will be absorbed through the skin and aid respiration.

Immediate neonatal care in health structures follows certain procedures. The

umbilical cord is tied with two pieces of umbilical twine and a clean piece of gauze is applied, followed by a cotton bandage wrapped around the abdomen and tucked into itself at the back. No lotions are applied to the cord stump and the mother is told to leave on this dressing for a week. As there is no culture of postnatal care in Burundi, I was unable to observe either compliance with or effectiveness of this treatment.

The second routine treatment given to neonates is a single application of Tetracycline eye ointment. This protocol is followed to prevent neonatal conjunctivitis and ensuing corneal lesions caused by infection with *Neisseria gonorrhoea* or *Chlamydia trachomatis* during delivery. The incidence of these infections is thought to be high in Great



Lakes Africa, and, in the absence of antenatal screening, diagnosis and treatment, prevention forms part of normal health care.

Working as a midwife in developing countries provides a fascinating opportunity to observe and discuss differing clinical practices. Some of the above practices are appropriate responses to the clinical needs of the continent, such as vaccinating against tetanus and preventing neonatal conjunctivitis. Others appear to be rooted in clinical beliefs that are either misplaced or applied in inappropriate contexts, such as the use of alcohol to aid neonatal respiratory effort. I remember the practice of holding the baby up by the feet at birth being standard practice at the start of my midwifery career in Scotland! Of most concern are those practices that potentially or actually harm the mother and/or baby, specifically incorrect prescribing and manoeuvres such as fundal pressure.

However, can professionals in the developed world, practising within an organisational framework that provides emergency transfers by ambulance along tarmac roads,

and essential obstetric interventions not limited by the ability to pay, rightfully criticise the clinical practice of their colleagues in the developing world who often do not have access to such options?

Finally, to replace inappropriate or unsafe practices by evidence-based ones requires standardisation of professional care within an organised healthcare system. Given the social and political chaos existing in Burundi, a country emerging tentatively but hopefully from a decade of conflict, this will take time and effort to achieve.

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