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Physiotherapy at the Hamlin Fistula Hospital, Addis Ababa

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Abstract

An obstetric fistula occurs when an obstructed labour leads to the baby's head causing prolonged pressure within the mother's pelvis, which results in ischaemic necrosis of the soft tissues. In most cases, the baby dies. A vesicovaginal fistula forms, resulting in severe urinary incontinence. Women who also experience a rectovaginal fistula suffer faecal incontinence as well. It is estimated that more than 2 million women world-wide live with an obstetric fistula. In Ethiopia, as many as 9000 women per year will develop a fistula, and many factors contribute to this. The country is large and mountainous, and only 10% of women have access to a skilled health worker during labour. With little or no access to adequate sanitation and no pads, many fistula sufferers live in isolation. Doctors Reginald and Catherine Hamlin established the Addis Ababa Fistula Hospital (AAFH) in 1974, which has since developed into an internationally renowned centre of excellence. Physiotherapy services were introduced in 2003. The AAFH and its outreach centres treat several thousand women each year. Many arrive with considerable rehabilitation needs before they are fit for surgery, while others remain incontinent despite a successful fistula repair. The physiotherapy team offers a range of treatments both pre- and post-operatively.

Keywords: obstetric fistula, physiotherapy, urinary incontinence.

Introduction

Obstetric fistula

Obstructed labour leading to prolonged pressure by the presenting part of the baby within the mother's pelvis results in ischaemic necrosis of the soft tissues. This can cause an obstetric fistula between the vagina and urinary tract (vesicovaginal), and/or the vagina and rectum (rectovaginal). Such fistulae are uncommon in the UK: approximately 80 British women suffer a vesicovaginal fistula (VVF) each year (NICE 2006). Although it is unclear how many women world-wide are living with an obstetric fistula (Stanton *et al.* 2007), it has been suggested that obstructed labour results in VVF in approximately 100 000 women per year world-wide and that 2 million women may be living with the condition. The World Health Organization has

referred to this condition as the single most dramatic aftermath of neglected childbirth.

The main symptom of fistula is severe incontinence. In rural areas with poor sanitation, basic, cramped housing and no access to continence products, this results in problems with hygiene, health and socialization. In an attempt to stop the leakage, some women will stay in bed for weeks, months or even years. As a result, they can become very weak and develop contractures, particularly in the joints of their lower limbs. In addition, some women develop foot drop, which can be related to the obstructed labour itself and pressure on the lumbosacral plexus (Hancock 2009), or possibly prolonged squatting with subsequent damage to the peroneal nerve.

Ethiopia

Ethiopia is one of the most populous countries in Africa. Approximately 73.8 million inhabitants were recorded in a 2007 census and the

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population is increasing at a rate of 2.6% per year. Eighty-four per cent of Ethiopians live in rural areas [CSA(E) & ICFI 2011]. The country is five times the size of the UK and much of it is very mountainous; nearly two-thirds of the highest 75 peaks in Africa are in Ethiopia. Life expectancy is 59.3 years (UNDP 2011).

Maternity care in Ethiopia is very different from that experienced by women in the UK. Just 10% of women are attended at birth by a skilled health attendant and 66% receive no antenatal care [CSA(E) & ICFI 2011]. Factors that contribute to this situation include low numbers of healthcare professionals [there are only 234 obstetricians (ESOG 2012) and fewer than 2000 midwives (UNFPA 2011) in the country], the difficult terrain, and poor road and public transport networks in many areas. There are 14 000 maternal deaths each year (UNFPA 2011).

It is estimated that 9000 women suffer an obstetric fistula in Ethiopia each year (Hancock 2009), a problem that may be related to poor access to appropriate care in pregnancy and labour. In addition, many Ethiopian women are quite small, the median age at marriage is 16.5 years and more than one-third will have their first baby before the age of 18 years [CSA(E) & ICFI 2011]. Female genital mutilation is practised in some parts of the country, but a study by Browning *et al.* (2010) concluded that this was not an independent causative factor in the development of obstetric fistulae within their study population.

The Hamlins

Doctors Reginald and Catherine Hamlin established the Addis Ababa Fistula Hospital (AAFH) in 1974. Having arrived in Ethiopia from New Zealand and Australia in 1959, they recognized the plight of women who had sustained horrific childbirth injuries. Since its establishment, the hospital has developed into a centre of excellence and a training facility for surgeons from around the world. In addition to the main hospital, there are now five outreach centres where women can be treated closer to home, and Desta Mender (“Village of Joy” in Amharic), a community just outside Addis Ababa, where women requiring longer-term care can stay (Fig. 1). Reginald died in the 1990s, but Catherine, who is now in her late eighties, continues to live and work at the hospital. In 2012, her great contribution was recognized by the Prime Minister of Ethiopia, Meles Zenawi,



Figure 1. Desta Mender, a community just outside Addis Ababa where women with ongoing medical needs may live.

who granted her honorary citizenship of the country (<http://www.hamlinfistulauk.org/>).

Management of obstetric fistula and persistent urinary incontinence

Well-trained surgeons can successfully repair a VVF in up to 95% of women (Goh *et al.* 2008). Following surgery, the woman is catheterized for 14 days, after which a dye test is undertaken to confirm that the repair has been successful. Unfortunately, 15–20% of women (Hancock 2009), and possibly considerably more (Murray *et al.* 2002), will suffer persistent urinary incontinence (UI). Others will experience incomplete bladder emptying.

The risk factors for persistent UI include the size of the fistula, its position (e.g. affecting the urethra), a small bladder capacity, vaginal scarring, the coexistence of a rectovaginal fistula, age and low parity (Goh *et al.* 2008; Nardos *et al.* 2009). At the AAFH, management of persistent incontinence includes physiotherapy, anticholinergic medication (if appropriate) and possibly further surgery, such as urethral tightening, insertion of an autologous sling or urinary diversion (e.g. with an ileal conduit). In the initial stages after repair, women are discharged home, where they undertake pelvic floor muscle (PFM) exercises (PFMEs), with or without anticholinergic medication. They return for review at 6 months if their symptoms persist. At this stage, urodynamic tests are undertaken and further interventions considered.

Physiotherapy

Lesley Cochrane, an ACPWH member and retired women’s health physiotherapist from



Figure 2. Lesley Cochrane (right) with Ethiopian physiotherapist Azeb Befekadu Tessema (left).

Aberdeen, UK (Fig. 2), first contacted the AAFH in the early 2000s and began to visit regularly in 2003. At that time, there were no qualified physiotherapists and all physical therapy was carried out by two nurse aides, who focused on basic massage, exercises and stretches for patients with contractures and muscle weakness. Over the next 8 years, massive developments in physiotherapy services were made, which were in no small part because of Lesley's knowledge, teaching skills and dedication. She made regular visits and kept in contact via e-mail while home in Scotland.

Local nurse Azeb Befekadu Tessema successfully completed a physiotherapy diploma and took over the day-to-day running and development of the service. In 2008, Lesley organized a trip to the UK for Azeb, during which time she observed women's health physiotherapy teams in Bradford and Glasgow. In 2010, the physiotherapy team moved into a new department (Fig. 3), and the present author took over Lesley's role after a joint visit to Addis Ababa in November of that year. In addition to the physiotherapists, there is a team of physiotherapy aides, all of whom, like many of the hospital staff, are former patients who have stayed on in Addis Ababa, possibly because of ongoing medical needs. In the five outreach centres, it is these aides who undertake all the day-to-day physiotherapy, and they make annual visits to the AAFH for training, while Azeb goes to the sites (Fig. 4).

All women admitted to the AAFH are assessed by a physiotherapist. Those requiring pre-operative rehabilitation begin a programme



Figure 3. Physiotherapy department of Addis Ababa Fistula Hospital.

of appropriate treatment to address their problems, such as a lack of general strength or mobility, foot drop, or contractures. They attend physiotherapy twice a day from Monday to Friday, and both mornings at the weekend, which represents an impressive level of input in comparison to many National Health Service hospitals in the UK. In addition to the assessment of any rehabilitation needs, every woman is advised on PFMEs pre-operatively. Basic anatomy, physiology and function are explained, and with consent, the women are examined vaginally to check that they can contract correctly, and to assess muscle strength, endurance and function. They are advised how often to exercise and how many squeezes to perform, and their compliance is monitored on the ward by physiotherapy aides throughout their hospital stay.

The majority of women do not require post-operative physiotherapy since their fistulae have been successfully repaired, they are continent



Figure 4. Azeb Befekadu Tessema (centre) with colleagues at the outreach centre in Bahir Dar.

and are ready to go home. However, those women with persistent incontinence or incomplete bladder emptying receive further assessment and treatment. The members of the physiotherapy team have developed protocols for such problems that are based on their experiences and the limited evidence that exists pertaining to this patient population.

Incomplete bladder emptying

If, on removal of their catheter 14 days post-repair, any women have a significant (>150 mL) post-void residual volume of urine, they are re-catheterized on free drainage for a week. Should the problem persist, they learn intermittent self-catheterization and are discharged. Those with a lower post-void residual volume of urine may manage with advice on double or triple voiding.

Urinary incontinence

Women who are still incontinent when they return for a review after 6 months, undergo urodynamic investigation, which is rarely available in developing countries. Those with detrusor overactivity receive anticholinergic medication. All patients are reassessed by Azeb and her team, and advised again about PFM training (PFMT). Although PFMT has been shown to be effective for the majority of women with stress UI in the general population and, therefore, is recommended as a first-line treatment (Dumoulin & Hay-Smith 2010), it has not been studied in this patient group. It might be argued that the severe damage to the continence mechanism caused by prolonged, obstructed labour will render exercises less effective for these women. In recent years, the AAFH physiotherapy team has also offered patients a trial of a urethral plug (FemSoft[®] Insert, Rochester Medical Corporation, Stewartville, MN, USA), a small device that they can insert themselves and remove to pass urine. If this proves effective, then a supply is provided, and the women are reviewed once or twice a year. A recent retrospective study (Brook & Tessema 2012) of the physiotherapy records of 181 of these women indicated that 75.7% reported that they were dry when using the device and a further 9.9% were “half-dry”. Each device was used multiple times. It would be re-inserted after removal for urination, and in some cases, used both day and night. This is contrary to the recommendations of the manufacturer (RMC 2011), but only few adverse incidents were reported (e.g. rupture

of a plug and migration of the device into the bladder).

Midwifery

The Hamlin College of Midwifery opened in 2007 and offers a 4-year BSc (Hons) degree for students who are recruited from schools near the Hamlin outreach centres. On successful completion of their degree, they are guaranteed employment in their home region, and provided with accommodation as well as access to an ambulance and driver. A direct-entry midwifery programme is available in 25 schools. Accelerated midwifery programmes and additional obstetric training for nurses are also available in Ethiopia (UNFPA 2011).

Women who have previously suffered an obstetric fistula and become pregnant again are encouraged to make contact with a suitable healthcare professional as early as possible, and will be offered an elective Caesarean section. Many stay at the AAFH or one of the outreach centres during the last weeks of their pregnancy.

Conclusion

Obstetric fistula continues to be a major complication of prolonged, obstructed labour in Ethiopia and other developing countries throughout the world. Access to adequate maternity care would help to minimize its occurrence. There is a major role for physiotherapy in the care of these women, and for women's health physiotherapists in particular in relation to persistent UI following successful fistula repair.

The following websites provide more information on the Hamlin Fistula UK charity and two other organizations working in this area:

- www.hamlinfistulauk.org
- www.endfistula.org
- www.fistulafoundation.org

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