Obstetric Fistula in Developing Countries: A Review Article

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Abstract
Obstetric fistula, one of the most devastating consequences of prolonged obstructed labour, is a historical issue in the developed world. However, it is still prevalent in resource poor countries like Ethiopia. The objective of this review article is to describe the epidemiology of obstetric fistula and its management, with specific emphasis on the experience of the Addis Ababa Fistula Hospital. Published and unpublished literature on obstetric fistula was reviewed, and expert opinions are used in augmentation. Most obstetric fistulas result from neglected obstructed labour, often affecting very poor, young, illiterate, rural women and girls. The women are often in labour for days, helped by unskilled family members. They deliver a stillborn child, become incontinent of urine and/or feces, and become outcast and divorced as a result. Surgical repair mends the lives of thousands of women, although not all injured cases have access to treatment. Although prevention should be the ultimate goal, the need for curative care services for the sufferers is shown to be significant.

INTRODUCTION

Obstetric fistula is an opening between the vagina and the bladder and/or the vagina and the rectum resulting from prolonged obstructed labour. Obstetric fistula leaves women with leakage of urine or feces or both and has been observed since women first began delivering children.

The oldest evidence of obstetric fistula can be found in the remains of an Egyptian queen’s mummy from around 1550 BC. Over time, physicians have attempted to describe and resolve this problem: the Persian physician Avenica made the connection between obstructed labour and vesico-vaginal fistula in the 11th century; Dr John Peter Mettaufer of Virginia reported success in closing a vesico-vaginal fistula using wire sutures in 1838.

In 1845, Dr J. Marion Sims of America encountered his first case of obstetric fistula, and on his 30th operation on the same patient in 1849, managed to close the fistula. In 1852, he published his article on the principles of fistula repair, and he has subsequently been called “the father of American gynecology.” In May 1855, he opened the first fistula hospital in New York. On the site of the hospital today, however, is the Waldorf Astoria Hotel, as there is now no need for a fistula hospital in America.

In 1959, Dr Catherine Hamlin and Dr Reginald Hamlin left Australia to establish a midwifery training hospital in Ethiopia. However, the horrendous physical and social damage endured by fistula patients attracted their attention, and their efforts focused on helping these patients. They opened the fistula hospital in Ethiopia in May 1974, built exclusively for fistula patients. The hospital now operates on more than 1200 cases a year and has a success rate of 92%. Because there are many women who continue...
suffering in shame, Dr Catherine Hamlin continued the work with her team after the death of her husband in 1993.6,7

Obstetric fistula is completely preventable if high quality basic and comprehensive maternal health services are available to all. The Hamlin’s wish for the future is that, like the fistula hospital in New York, the fistula Hospital in Addis Ababa will eventually no longer be required. However, there is a huge backlog of unrepaired cases in the country, and the absence of adequate maternal health care and emergency obstetrical services means that large numbers of new cases are continually occurring. Once the condition has occurred, the difficulty fistula patients go through is enormous, although the tragedy is neglected and very little has been done to address the issue. If the efforts to meet the Millenium Development Goals (MDGs) are to be fruitful, the plight of fistula patients must be seriously considered.

This review article thus provides an overview of the epidemiology of obstetric fistula and its management in developing countries with emphasis on the experience of the Addis Abbada Fistula Hospital (AAFH). This will shed light on the plight of women and the magnitude of the problem, and hopefully thereby inspire professionals, decision makers, and interested donor organizations to take steps to help.

METHODS

Accessible publications from Ethiopia and other developing countries were identified from Medline and Google using the key words “obstetric fistula,” “epidemiology,” “incontinence,” and “urogenital.” This was augmented by unpublished literature and relevant reports obtained by contacting experts in the field. The review focuses on experience, information, and literature from Ethiopia, although similar or different experience and reports from other developing countries were used as well.

EPIDEMIOLOGY OF OBSTETRIC FISTULA

Although there are many problems associated with the collection of maternal mortality and morbidity statistics in developing countries, recent unpublished national prevalence data in Ethiopia indicate that for every 1000 women in the reproductive age group (15–49 years) there are 22 fistula patients in rural Ethiopia, making more than 26 000 cases awaiting repair.6 The 2005 demographic health survey (DHS) in Ethiopia (unpublished) also showed national prevalence of obstetric fistula being 1% of ever married women.7 Other reports stated that of the two million women estimated to suffer from obstetric fistula in the world, between 100 000 and one million reside in Northern Nigeria and over 70 000 in Bangladesh.8,9 Reports from Kenya and Nigeria have shown that, about 1/1000 deliveries are complicated by obstetric fistula.10,11 From 50 000 to 100 000 women are expected to develop a fistula each year, although this figure is said to be underestimated.

Typical fistula patients in Ethiopia are young peasant girls who are married in their early teens to farmers with little or no education. The girls are given heavy tasks in the household and are poorly educated. They have no access to any health institution during pregnancy and labour, are often helped during labour by women of the village at home, and deliver a dead baby after being in labour for days. Although obstructed labour kills many of these young girls, the survivors develop urogenital fistula. Because they are soon deserted by their husbands, ostracized by their village friends, and excluded from their social life, they often wish they had died with the baby. Many commit suicide.

Even though detailed community-based research is lacking, several hospital-based studies support this profile of fistula patients.10–18 Structured interviews of 639 fistula patients treated at the AAFH between May 1999 and February 2000 revealed that the mean age of fistula patients at presentation to the hospital was 22 years, mean age at first marriage was 14.7 years, and mean age at the causative delivery was 17.8.15 More than 83% had their causative delivery when they were under 20 years old, 64% were primiparous, and the average length of labour was 3.8 days (range 1–10 days).

The principal cause of obstetric fistula in the developing world is prolonged obstructed labour beyond the reach of medical help.14,19–24 Access to a health institution is a major problem for fistula patients, chiefly because of the long distances to reach care, poor transportation networks, and lack of money, and because parturition is regarded as something that can be managed at home.12,15,16,18 A report from Ghana identified obstructed labour as a cause of fistula in 91.5% of cases and difficult gynaecological surgery in the remaining 8.5% of cases. Approximately 53% of these women were under 25 years of age, and 43% developed a fistula during their first delivery.25

Other important causes of urogenital fistula include injuries from difficult surgery, radiation therapy, sexual abuse, penetrating injuries (for example from a cow’s horn or stick), infection, and malignancies.19,26,27 Malnutrition and high physical workloads in adolescence and childhood might interfere with growth and contribute to the high prevalence of obstetric fistula in the developing world, but this requires further research.

Harmful traditional practices responsible for 6% to 13% of fistulas include gishiri cutting in northern Nigeria.11,13,14,28 This is a series of random cuts through the anterior vagina, involving urethra and the bladder neck, as a traditional
remedy for a variety of gynaecological complaints such as dyspareunia, infertility, genital prolapse, and obstructed labour. Although fistulas are common in communities where various forms of gishiri cutting is practised, there is no evidence suggesting that gishiri cutting is a major cause of fistula formation or even that it is causatively associated.

In addition to urinary and fecal incontinence and the loss of their baby, women who experience obstructed labour are also more likely to suffer bony abnormalities, perineal nerve injury (including findings of a foot drop), nerve damage to the bladder, and dermatologic injuries. Reports from the AAFH showed that more than 93% of the deliveries to women with fistula were stillborn, and more than 50% of fistula patients were divorced.15,19,29 In India and Pakistan the divorce rate is 70% to 90%.30

MANAGEMENT

Treatment of obstetric fistula can be conservative or surgical. Placing an indwelling urinary catheter for all mothers who have survived obstructed labour can prevent fistula formation, and newly formed fistulas can heal spontaneously in 60% of cases if the margins of the fistula come together and continuous urinary drainage using a Foley catheter is used; however, the great majority of women will need surgical management.31,32

Every fistula is unique, and no single surgical technique can be used to close different types of fistula. Surgical experience and skill are required to deal with unexpected findings. The quality of nursing care and the extent of the damage will also influence the outcome of fistula repair. Although there are some controversies regarding timing, approach, and antibiotic use in obstetric fistula repair, the generally accepted principles of fistula closure technique include mobilization of the bladder from the vaginal wall, identification of the ureters, closure of the bladder wall, testing for integrity of closure by instilling dye (methylene blue) into the bladder, placing a graft between the bladder and the vagina, and closing the vaginal skin (see figures).33–36

Adequate exposure of the operative field is attained by an exaggerated lithotomy position, and a vaginal relaxing incision in cases where there is a narrow scarred vagina. Spinal anaesthesia is the cheapest and easiest type of anaesthesia for use in developing countries. Success rates after fistula repair vary from 85% to 92%, and the best chance for success is with the first operation.26,37

If there is complete destruction of the urethra, a closed or scarred vagina, complete or near complete destruction of the bladder, or involvement of ureters, the repair is very difficult and the prognosis poor.
In large and high fistulae surrounded by dense scarring in the vagina, the ureteric orifices should be identified and catheterized under direct vision so that they are readily identifiable throughout the course of the operation.

Freening the bladder from the vaginal wall allows a tension-free bladder closure. When this has been accomplished, the ureteric catheters can be passed through the bladder and brought out through the urethra to keep them out of the operative field.

The bladder is then closed using interrupted, absorbable sutures. Ideally, the bladder is closed in a two-layer approach; however, this is not always possible with urethral and very large fistulas. The second layer stitch is to reinforce the first layer, if at all possible. The Martius graft (in which the bulbocavernosus muscle is inserted between the bladder and vaginal sutures to improve the fistula repair) is an important technique used by most surgeons to enhance successful repair. The success rate of fistula repair has shown a significant improvement in the past few years, although depending on the severity of injury and the amount and site of tissue loss, there may be residual incontinence. Very few women require urinary diversion. The most satisfactory solution to the problem, however, is to prevent it.

CONCLUSION

Although advances in obstetric care have made obstetric fistula a rarity in the developed world, it remains common in the developing world. Affected women are suffering from untold misery, and the great majority of these are poor and disadvantaged peasant women and girls. The problem has been neglected by governments in the developing world and by the MDGs, which fall to capture the problem of obstetric fistula. Fistula patients are living indicators of poor maternal health care and failed health systems, but they are largely ignored by the world.

The solution to the fistula problem will ultimately come from the provision of essential obstetric care service; however, the needs of those who have already developed fistula cannot be ignored. Reports from dedicated centres have shown how surgery transforms the lives of these victims and restores their dignity.

The need for specialized and dedicated fistula centres derives from the special nature of the injury produced by obstructed labour. This includes the stigmatizing and socially isolating nature of the injury, the long period of rehabilitation needed before surgery, and the lengthy nursing care required after surgery.

Obstetricians and gynaecologists must lead the way to liberate young women who are already on the road to maternal death or to developing obstetric fistula. The calamities these young girls and mothers face must inspire us in this enormous task of preventing the injury, treating the affected, and searching for the best approaches to both prevention and treatment.

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REFERENCES