

# Nursing Care for Women with Childbirth Injuries

Second Edition

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## **Dedication**

*For my boys - Hamish and Roddy*



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# Foreword

Caring for fistula patients and nursing them back to full physical and mental health can be one of the most challenging and also rewarding tasks undertaken by nurses.

Without treatment, these girls and women are often in a dreadful state – physically unwell, depressed, bereaved and socially ostracised, with little or no hope of relief. After successful treatment, they can blossom back to life, all the possibilities of their worlds opening up to them again. It can be a hard journey, however, sometimes with more than one painful procedure needed for a successful outcome. The importance of the treatment being the ‘best possible’ cannot be overestimated.

The surgery cannot succeed without proper pre-, peri- and postoperative care. The patients undoubtedly recover better with high-quality care – meaning the truly holistic, generous, selfless care of a nurse who has the skills, understanding and determination to help these very vulnerable patients. The author of this book is one of these very special nurses, making a wonderful difference to the recovery and to the lives of fistula patients.

This book will be an excellent guide and inspiring companion to fistula nurses everywhere and will contribute to the successful treatment of fistula patients wherever it is used.

**Mhairi Collie, MBChB, MD, FRCS**  
**Consultant colorectal surgeon**



# Chapter 1

## Introduction

This book aims to help teach and empower all nurses to have the ability to provide good, effective nursing care for all patients following surgery for vesicovaginal fistula (VVF), rectovaginal fistula (RVF), and 3<sup>rd</sup>- and 4<sup>th</sup>-degree tears. The care is not difficult or complicated but is specialised and requires knowledge of the specific surgery each woman has had to enable nurses to provide high quality, holistic patient care. Nursing care is required before, during and after surgery to limit postoperative complications and to ensure that women have a safe, uneventful recovery.

As most fistula surgery is currently undertaken in routine fistula care facilities with the addition of surgical camps, this book is a guide to the specific nursing care required in a dedicated fistula hospital/unit or during a fistula camp.

In specialised fistula care centres, patients are cared for by a multidisciplinary holistic care team, which includes ward and theatre nurses, physio and rehabilitation specialists, psychosocial support counsellors, nutritionists as well as the doctors and surgeons. However, not all patients will have access to all these healthcare specialists, this will depend on what is available where they present for surgery.

Surgical repair of VVF is a difficult task owing to the nature of the injury involving the bladder, vagina and often urethra, because of the tissue loss associated with the defect. Associated nerve damage involving the urethral sphincters and filling mechanism of the bladder affects the body's ability to maintain urinary continence. A highly skilled surgeon is needed to successfully repair obstetric fistula (Figure 1).

In fistula-affected countries, there are very few surgeons with the training, skills and experience required to successfully carry out these operations which, combined with a lack of funding for fistula work, makes it difficult for these women to get help. Ideally fistula surgery should be carried out in specialised centres on a regular basis, but unfortunately these are few and far between, in addition to the scarcity of trained fistula surgeons, there is also limited theatre space for elective gynaecological and surgical cases.

However, the International Federation of Gynecology and Obstetrics (FIGO) is currently addressing the training of fistula surgeons with their comprehensive Fistula Surgery Training Initiative. There are now many surgeons and holistic fistula care teams enrolled in the training programme from countries all round the world with a high obstetric fistula burden.



Figure 1 Highly skilled surgeons at work

Although there is a dedicated fistula hospital in Ethiopia, the Addis Ababa Fistula Hospital, and other centres which provide ongoing fistula care, some surgery is also undertaken at surgical camps where teams of surgeons and other health professionals work together to provide care for the fistula patients. Surgical camps are usually funded by aid agencies or charities, generally allowing the women access to surgery and treatment for free.

However, it is estimated that for every one woman who has surgical treatment, there are another 50 women who have not been able to access surgery. Most of these women will have very little knowledge of what caused their fistula or that treatment is available for their condition, with some believing they have been cursed or that witchcraft has been used. Many of the women live in inaccessible rural areas with poor transport links. They may not have the money to travel to the treatment facility or surgical camp. Some also fear attending treatment services or use traditional medicines to try to cure their fistula in place of modern medical practices.

## **Morbidity**

Obstetric fistulas are estimated to affect between 50 000 and 100 000 women worldwide each year. The development of obstetric fistula is directly linked to obstructed labour, one of the major causes of maternal mortality.

Women who suffer from obstetric fistula experience continuous incontinence of urine and/or stool, stigma, social isolation and associated health problems. The World Health Organization estimates that there are currently more than 2 million women living with untreated obstetric fistula mostly in sub-Saharan Africa and Southeast Asia, as well as in various other parts of the world.

Obstetric fistula is preventable and can be avoided with access to safe delivery services and timely emergency obstetric care.

Sadly, obstetric fistula disproportionately affects the poorest women in the world who are likely to be uneducated, with little understanding of what has happened to them, often married at a young age and with the expectation of producing many children. Most of these women live in rural villages with limited access to healthcare (Figure 2). Their villages may be very long distances from hospitals with poorly developed road networks and local transport, making travel difficult (Figure 3).

Poverty is also a major factor that increases the likelihood of suffering from obstetric fistula, as women in these environments often have very little money to pay for transport to hospital or any costs incurred by a hospital stay if they run into problems during childbirth. Women who suffer from obstetric fistula often live in countries in which women's rights and social status are poor, meaning they will have limited power to make decisions for themselves on where they deliver their baby. Many will deliver at home without trained birth attendants such as midwives. These decisions are often made by the men in the household.

Many women in low-income countries, including those in Africa, deliver their babies at home with the local traditional birth attendant supervising the birth. The birth attendants are women in the village who oversee deliveries with no formal obstetric training, whose skill tends to be 'learned' having been passed down through families.

This works well for most straightforward births and the traditional birth attendants deliver hundreds of babies safely.

*Nursing Care for Women with Childbirth Injuries*

However, the traditional birth attendants do not always recognise early enough when labour is obstructed and when a caesarean section is the only option for safe delivery of a live baby. A series of events then unfolds with a delay in recognising obstruction, compounded by further delays in getting to hospital and then in getting to theatre for a caesarean section. By this time, the baby is usually dead and, if the mother survives, she is likely to have developed a fistula from the pressure of the baby's head in the pelvis during obstructed labour.



Figure 2 Rural settings where women deliver



Figure 3 Transport can be difficult due to poor road networks

## Vesicovaginal fistula, rectovaginal fistula and 3<sup>rd</sup>- and 4<sup>th</sup>-degree tears

Most fistulas develop following obstructed labour and are called obstetric fistula, which can be divided into vesicovaginal and rectovaginal. Obstetric fistula can be urinary (VVF) or faecal (RVF) or both. VVF occurs where a 'hole' is formed between the bladder and the vagina causing continuous leakage of urine through the vagina (Figure 4).

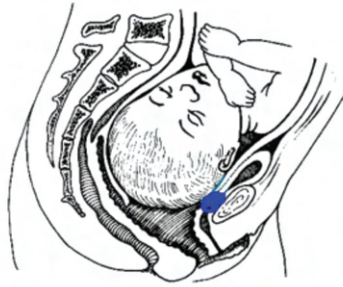


Figure 4 Area in blue shows site of vesicovaginal fistula

In some cases, there may also be a 'hole' or fistula between the bowel and the vagina (RVF), which leaves the patient leaking faeces through the vagina. RVFs (Figure 5) are very rare in isolation and usually occur with a VVF following the woman's first delivery when the labour has been a day longer than for an isolated VVF.

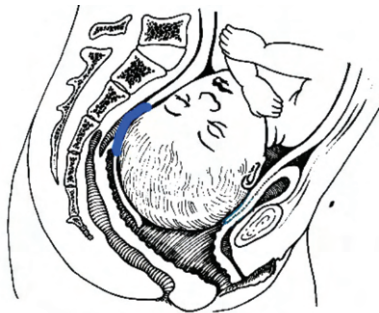


Figure 5 Area in blue shows position of a rectovaginal fistula

These women sometimes also suffer from nerve damage from compression of the lumbosacral plexus, resulting in footdrop often from involvement of the L5 nerve. They may attend with a limp or walk using a stick. In most cases, the footdrop slowly recovers, but can take up to 2 years and, in severe cases, may never recover.

Other factors leading to the development of fistulas requiring surgical intervention to cure are mainly iatrogenic, and caused by damage to the bladder, vagina or ureters during hysterectomy or caesarean section. Iatrogenic fistulas are more likely if the obstructed labour is very prolonged and maternal tissues are in a very fragile state. Good midwifery care and timely referral for caesarean section for obstructed labour are critical to reduce the risk of iatrogenic injury.

Damage occurs accidentally, potentially during a difficult caesarean section operation where the uterus has ruptured. Injury to the bladder or ureter may inadvertently happen during this life-saving procedure. Poor lighting, limited surgical instruments and lack of surgical expertise can all increase the risk of an iatrogenic fistula occurring after a hysterectomy. Problems may not be noticed for several days or weeks after surgery.

Assisted vaginal deliveries such as vacuum extraction, if not carried out correctly, can result in the wall of the bladder, vagina or rectum becoming trapped in the vacuum, potentially resulting in an iatrogenic fistula. A similar situation can occur following instrumental delivery using forceps.

Fistulas can also develop with bladder tuberculosis or advanced cancers; these are often inoperable as they are unlikely to heal or will reform as the cancer advances.

Other causes include radiotherapy, trauma, sexual trauma and congenital defects.

Perineal tears (Figure 6), although not defined as fistulas, are another common cause of incontinence in women following the birth of their baby. In these situations, incontinence is faecal, meaning that women leak stool due to either complete or partial rupture of their anal sphincter muscle. Rupture of the anal muscle can happen following fast delivery of a baby, where there is no protection of the perineum during the birth. This can cause a tear in the perineum that extends into the rectum.

Complete rupture of the anal muscle with involvement of the skin between the vagina and rectum is known as a 4<sup>th</sup>-degree tear. With 3<sup>rd</sup>-degree tears, the anal sphincter is ruptured, but women still have an intact anus and rectal wall.



Figure 6 3rd-degree tear

### **Psychosocial effects of obstetric fistula**

It is estimated that 97% of women living with a fistula suffer from depression and 40% have had suicidal thoughts or make attempts to end their lives. Many women with a fistula will lead very restricted lives, unable to leave their homes, socialise at the market or attend religious services. They are unable to have paid employment as a result of their incontinence and, consequently, have little money. Some may be living in isolation after their husband or partner has left and are ostracised by their families and community because they smell strongly of urine and/or faeces.

These women have sustained dreadful injuries through no fault of their own. As well as having a fistula and being constantly wet with urine (Figure 7), most will also have endured the trauma of having delivered a dead baby.



Figure 7 Young girl with constant urine leakage from a fistula

### *Nursing Care for Women with Childbirth Injuries*

To put yourself in the position of these women is unthinkable for most of us, so we need to treat them with respect and offer them the compassionate care they deserve.

When women, and girls, present for treatment, we must respect their right to privacy and allow them time to tell their story, understanding that they are probably terrified even though they have come for help. This is an intimate injury and showing kindness and being empathetic to their situation will help them to feel safe, valued and potentially even loved again. This is a role at which nurses can excel, in gaining the trust of the patients and making their hospital stay as positive an experience as possible.

The environment of a fistula treatment facility is a good way of introducing patients who have gone through similar experiences to discuss their problems with each other and develop a support network during their hospital stay. Many women attend for help in a very depressed state, but flourish as they are physically repaired, meet others in similar situations and are encouraged with the help of the nursing staff. Social activities during the day such as knitting, sewing lessons, painting nails or plaiting hair help to bring the women together and encourage them to talk (Figures 8-10).



Figure 8 (top) Knitting lessons; Figure 9 (below left) Nail painting;  
Figure 10 (below right) Sewing lessons

## Need for good nursing care for fistula and perineal tear

High-quality nursing care requires a good understanding of the suffering the women have endured from fistula and perineal tears. These women all need to be treated with dignity and respect when they arrive at a hospital for help. Many will have a strong offensive odour from being incontinent of urine or faeces, made worse by the urine being more concentrated as they reduce their fluid intake in an attempt to control the leaking (Figure 11).



Figure 11 The indignity of living with a fistula

All hospital workers who come in to contact with these patients need to be sensitive towards the women and avoid using language that makes the patient feel bad about her condition.

Showing kindness to this very frightened group of patients will help them relax and feel that someone cares for them. During their hospital stay, all staff should aim to treat them as if they were their sister, mother or grandmother. The well-known expression that guides us to 'treat others as you yourself would want to be treated' can be a worthwhile guiding principle. Staff should remember that the situation that these women and girls find themselves in is no fault of their own. Nurses who can show empathy and kindness are role models for their peers and nursing students.

## Basic equipment needed for nursing VVF patients

Fistula nursing care requires little equipment, but there are a few items that are needed before surgical treatment begins. These items are listed here and can be obtained for a small amount of money and are usually included in the costings in a camp setting (Figure 12).

### *Nursing Care for Women with Childbirth Injuries*

- A small bucket into which to drain a urinary catheter is needed for each patient. This allows the patient to mobilise as soon as possible with her urinary catheter on free drainage.
- Strapping or tape to ensure catheters are fixed securely on the patient's abdomen to avoid any pulling on the catheter in the bladder.
- A sterile 60-ml or 100-ml catheter tipped syringe and a bottle of sterile saline for flushing blocked catheters. It is a good idea to have a few sterile packs made up in advance with a receiver (kidney dish) and syringe.
- Savlon® or similar antiseptic for vulval toilet and perineal hygiene postoperatively.
- Sanitary pads made from gauze and cotton wool.
- Water-soluble lubricant (K-Y® jelly).
- Extra urinary catheters in case any need to be replaced and cannot be unblocked.
- Analgesia – ensuring that there is a ready supply of analgesia before camp begins is useful. A supply of opiates, anti-inflammatories and paracetamol is required.



Figure 12 Basic items of equipment required

## Infection prevention

### *Hand hygiene*

Hand hygiene is one of the most important steps in the prevention of healthcare-associated infections by the spread of harmful micro-organisms. Hand hygiene means washing hands or using an alcohol-based hand rub after touching a patient. Alcohol rub can be used after three consecutive patient contacts, then hands should be washed with soap and water. If using gloves, these should be discarded after use on a single patient.

A water dispenser and soap should be available for hand washing. Ideally, the soap should be dispensed from a hand pump container. Hand hygiene should be carried out in accordance with World Health Organization guidelines (Appendix A). Good hand hygiene will help protect patients in your care, colleagues, yourself and your family.

### *Cleaning*

Another source of hospital-acquired infection is from the ward beds and mattresses. Each time a patient is moved off a bed, the mattress should be washed with disinfectant and dried before making the bed for the next patient. The bedframe should also be washed down to prevent cross infection.



Figure 13 Example of a well-kept, clean surgical ward

### *Nursing Care for Women with Childbirth Injuries*

Cleaning of the ward floor should be carried out every day and more often if there are spillages of urine or blood, which is common with open urinary drainage systems (Figure 13). This will help prevent infection and contamination of patients in the postoperative period.

Patient toilets need to be kept clean and disinfected daily. A hospital cleaner should take care of this important job. Any rubbish including used sanitary pads need to be cleared up regularly and the patients advised to dispose of this waste in the correct hospital bin.

Wash areas for patient use need to be cleaned at least daily. Patients are advised to bathe every day, including daily vulval and perineal washing and to pat the skin dry to reduce postoperative infection. They should be encouraged to clean and dry their perineum after passing stool. Patients should also avoid inserting their fingers into the vagina, as they may damage the repair.

# Chapter 2

## Preoperative Care

### Screening for fistula (VVF and RVF) and 3<sup>rd</sup>- and 4<sup>th</sup>-degree tears

Many patients may present at a fistula centre in the hope of free surgery to fix their problem. However, all of them require screening to determine whether they have a fistula, or 3<sup>rd</sup>- or 4<sup>th</sup>-degree perineal tear. The initial screening is often done by the nurse or midwife. Further screening is usually undertaken by the doctors who will operate on the patients, as they need to know the size, site and complexity of the fistula.

Nursing staff are involved in the screening process and are invaluable in assisting the doctors during the history taking and examination process. They can take a short history, examine and document their clinical findings and prioritise who needs to be seen by the attending fistula surgeon. Bloods can be taken at this point, particularly for those patients who are obviously anaemic (Figure 14).



Figure 14 Examination room for screening, privacy using screens

## **History taking**

- Is the patient wet all the time, including at night? For fistula patients, this needs to be confirmed because those with mild to moderate stress incontinence may describe being wet all day, but usually remain dry overnight.
- Establish whether they became wet following childbirth (vaginal delivery, caesarean section or caesarean hysterectomy).
- Ask whether they are also leaking faeces. This is to establish whether they have an RVF as well as a VVF.
- Patients with 4th-degree tears will describe being incontinent of faeces and have faeces in the vagina. They are likely to be unable to control passing stool and/or flatus. In contrast, women with 3rd-degree tears may be able to control passing stool at times, but will also frequently suffer from incontinence or soiling.
- Consider the age of the patient – obstructed labour in women in their teenage years tends to be related to the most severe birth injuries, which are often difficult to repair.
- How long has the patient been wet? Urine dermatitis is a sign that the patient has been wet for a long time.
- Obstetric history. Whether this was the first pregnancy, or there have been other deliveries, and, if so, the number of deliveries and number of living children. How did the woman deliver and when? Was it a vaginal delivery or caesarean section? (Fistula after caesarean section may be more complex, related to the ureters or to a ruptured uterus extending into the bladder.)
- How long was the labour? Many patients with fistula will have laboured for more than 24 hours. Is there any footdrop? The longer the obstructed labour lasted, generally the more extensive/complex the damage and more severe the footdrop.
- Where did the delivery occur? It may have been at home, in a health centre or at hospital. Obstructed deliveries often follow a labour at home with patients not presenting at hospital for caesarean section until it is too late, the baby has died, and a

fistula has formed. Fistula can also develop in a hospital if there is inadequate monitoring during labour (with a partogram), delay in getting to theatre for caesarean, or shortage of staff, including surgeon.

- Does the woman have a living child from the birth? Almost all vaginal deliveries from obstructed labour will result in stillbirth or early neonatal death due to foetal hypoxia resulting in poor Apgar scores. Women who obstruct during childbirth and fail to deliver may end up with a difficult caesarean section and the formation of a fistula. A few patients may have a live baby if delivered by caesarean. If a live child was delivered by caesarean, the injury may have happened during surgery rather than necrosis from a long obstruction. An intracervical or ureteric fistula should be suspected.
- Has the patient had any previous fistula surgery? Subsequent repairs can be difficult to cure.
- What is the patient's social history? Is the patient still living with her husband or partner? Patients who have been wet for a long time may have little family support and may not have an attendant with them who can look after them during their hospital stay. These patients need extra care from the nursing staff. Finding another patient's attendant who is willing to care for them during their stay in hospital can be helpful.
- Menstrual history. It is important to establish whether the woman's menstrual periods have resumed. If a woman's periods have not returned and she has been leaking urine for more than 6 months, a hysterectomy following caesarean should be suspected.
- Sexual history. It should be determined whether the woman has resumed sexual activity and, if so, whether she is experiencing any problems. If sexually active, check whether or not she is currently pregnant.
- Bladder stones – suprapubic pain with urinary incontinence can be indicative of a bladder stone. These are not uncommon among fistula patients, as concentrated urine predisposes to

deposits in the bladder that can lead to the formation of bladder stones. Some women may also have had a foreign body, such as leaves, or other matter, introduced into the bladder and/or vagina by themselves or by a traditional healer to try and block the hole in the bladder. These objects can also lead to the formation of bladder stones causing chronic cystitis.

- If a bladder stone is located during surgery, the surgeon will remove it, but it is unlikely that they will attempt to repair the fistula at the same time, as the chances of healing are reduced due to chronic infection in the bladder. The patient will need to return to have the fistula repaired, giving themselves at least 3 months for recovery following the operation to remove the bladder stone.

## **Examination**

- Perform a routine general examination. Record the patient's height and weight. Check for anaemia, jaundice, body temperature, hydration status, mental state and nutritional status. Look for any evidence of sepsis as patients who have suffered obstructed labour, particularly those with an RVF, will often have endured a difficult recovery post-delivery.
- Nutritional state. For very thin malnourished patients who may also be anaemic, surgery should be postponed until they have attained a healthy weight through measures such as improving their nutrition, taking deworming medication, treating malaria or other underlying comorbidities such as tuberculosis. Many women presenting for fistula surgery are underweight and can be operated on provided they have no underlying health problems. Severely malnourished patients are likely to suffer from difficulties during anaesthesia and complications following surgery.
- Examine for contractures and abnormal gait (how they walk). Neurological damage, from nerve compression due to the baby's head being stuck in the pelvis during obstructed labour, can leave the patient with a limp (known as footdrop or dropfoot) or unable to walk unaided. This is a marker for severe injury and is often seen with young women presenting with fistula. Footdrop can be bilateral (both feet involved). Contractures of the legs can occur

with severe footdrop due to lack of movement of the muscles in the limbs. However, most patients with contractures will improve with time, but need intensive active and passive movement of the limbs.

- Check for evidence of continuous urine leakage such as urine dermatitis (Figure 15), wet clothes, use of padding to soak up urine, obvious leakage of urine, presence of stool in the vagina (RVF), vaginal scarring and reduced vaginal capacity (stenosis).
- For patients with 3rd and 4th-degree tears, examine the vagina, perineum and anal sphincter. Observe for soiling of stool on the patient's pants. Anal sphincter tone needs to be checked by asking the patient to squeeze your gloved finger when inserted in the anus.



Figure 15 Urine dermatitis

### **Assisting the surgeon in patient evaluation**

After the nurse has completed the initial assessment of the patient (as described above), each patient is then examined by the doctor, to assess the fistula to be repaired. Patient privacy is ensured using screens and instructing the patient to keep their clothes on and to pull up their dress or skirt underneath their bottom.

Patients should be provided with a piece of polythene sheet to cover the examination table to prevent infection (Figure 16). The heavy waterproof



Figure 16 Examination of a patient on a polythene sheet

sheet covering the examination bed should be cleaned with disinfectant between patients. Patients may be examined lying on their back, on their side with knees to chest or in the lithotomy position.

Nurses need to provide a clean speculum. If available, a Sims speculum is best for examination (Figure 17). The speculum must be cleaned in detergent and rinsed with normal saline between each patient. It is helpful to have a bucket of detergent for the dirty speculum (Figure 18), which needs to be soaked for 10 minutes then rinsed. The clean speculums are kept in a clean bucket (Figure 19).



Figure 17 (left) Sims speculum; Figure 18 (right) Bucket for used instruments



Figure 19 Bucket for clean instruments

Water soluble lubricant, such as K-Y jelly, will be needed to reduce the discomfort during vaginal examination. Make sure there is a plentiful supply before screening starts.

Dye tests (Figure 20) may be needed to confirm the site of the fistula. Use methylene blue or gentian violet, but ensure it is diluted with saline before using on patients. The dye should be made up daily using sterile equipment. If it is not diluted, it will stain extensive areas, making interpretation of the test difficult; 1–2 ml of blue dye in a kidney dish of saline is sufficient. A Foley or in/out catheter, swabs and a 60-ml or 100-ml syringe will also be needed for the dye tests.



Figure 20 Carrying out a dye test using diluted blue dye (note the blue dye on the speculum suggests a VVF)

The doctor will specify what is needed to carry out the dye test. The nurse will be asked to pass the doctor the syringe of blue dye and may be required to hold the Foley catheter as the dye is inserted. Between 180 ml and 300 ml of dye is inserted into the bladder, and the vaginal wall is examined for any leakage of dye confirming the site of the fistula.

If the dye test is negative and the patient is insisting that she is wet, further evaluation is needed to rule out a ureteric or pinhole fistula. This involves filling the bladder with blue dye, inserting some gauze or cotton wool in the vagina and getting the patient to walk around for 30–60 minutes. If the gauze or cotton wool is blue when removed, she has a fistula; if it is wet with urine, a ureteric fistula is likely.

### **Counselling before surgery**

After the patient has been screened and found to have a fistula, the surgeon will inform them whether they can offer a potentially curative operation (Figure 21). The type of operation they require will be discussed and, if any grafts are anticipated for their repair, this should be explained to the patient. They need to understand at this point that they will be required to stay in hospital for 2 weeks following surgery with a catheter *in situ*. It is also helpful if they have a family member with them as their attendant to look after them during their stay.

It is a good idea at this time to tell patients that surgery is not always 100% successful and, if their operation fails, not to worry excessively as they can return for further surgery that may be successful in curing their incontinence.

Patients also need to understand that they will have to abstain from sexual activity for 3 months after surgery or they may become wet again after they have returned home. If it is not possible for them to go home and have their husband/partner abstain from sex, they should be encouraged to stay with a relative until they are fully healed.

They also need to know that they will not be able to do any heavy lifting for at least 3 months after surgery. If they are subsistence farmers, they will need someone to help with lifting after they return home.

Future pregnancies should be delayed for at least a year following surgery and contraception should be offered to allow women to plan for this. They should also be advised that future pregnancies need to be



Figure 21 Patient being counselled about possibility of surgery

delivered by caesarean section, otherwise they risk recurrence of the fistula with a vaginal delivery. Elective caesarean is indicated for all patients with VVF, RVF and 4<sup>th</sup>-degree tears following repair.

### **Immediate preoperative care**

The day before planned surgery, the patients are required to have their bloods taken for haemoglobin (Hb), human immunodeficiency virus (HIV), blood group, blood glucose and a pregnancy test. Some centres test for schistosomiasis, as it can sometimes cause a fistula and is associated with breakdown of repair, but only a few centres include this test. If the patient is known to have HIV, their CD4 count should be checked, especially if newly diagnosed. If the CD4 is less than 300 cells/mm<sup>3</sup>, then the operation should be postponed until treatment has started and the CD4 count is up. An intravenous (IV) cannula is inserted at this point for theatre the next day.

It is important to determine a patient's Hb and blood group before surgery in case they have problems with bleeding and may require blood transfusion postoperatively.

Screening for HIV is compulsory preoperatively. This gives the patient an opportunity to know their HIV status and, if positive, get access to counselling and treatment. It will also help protect the surgeon, as extra precautions need to be taken if the patient is HIV positive and not receiving treatment.

Informed consent (Figure 22) is required, and the patient should have had preoperative counselling as to what their surgery entails and what to expect afterwards. Patients who are unable to read and write need to give consent with a thumbprint using ink.

CSF					
AFB					
OTHERS					

CONSENT TO OPERATION

I, [redacted], consent to the operation on 3/3/2020 as decided by the surgeon in the best interest of my/his/her health. Date 3/3/2020 Signature [Signature]

I hereby certify that I have explained and translated to the patient/guardian of the patient the above agreement signed/thumbmarked by the patient/guardian of the patient and I am satisfied that he/she has understood the contents and agrees to the necessary operation.

Date: 3/3/2020 Signature: [Signature] Witness: Rebecca

6

*Patient's right thumb print*

Figure 22 Informed consent using patient's thumbprint

Some surgeons will want all patients to have an enema the day before surgery to ensure the bowel is empty and there is no contamination of faeces during the operation, which can lead to postoperative infection of the wound. However, enemas are required for all rectal tears and RVF repairs, but not all surgeons use bowel preparation for VVF repairs. Warm water and soap enemas (Figure 23) are ideal to clean out the bowel.



Figure 23 Patient receiving a soap enema

All patients need to fast the night before the surgery. This is less important for spinal anaesthesia but required if the patient needs a general anaesthetic during surgery. No food should be consumed after midnight by patients undergoing surgery the next day, but the patient can continue to drink water until 2 hours before surgery.

In many fistula centres, the patients will be given 1 litre of IV fluids 30 minutes to 1 hour before theatre to ensure they are well hydrated. This makes it easier to locate the patient's ureters during surgery to fix the hole in the bladder and hydrates them before the spinal anaesthesia, which can drop their blood pressure.

Patients should continue taking regular medication, i.e. for HIV, hypertension or diabetes, and take their tablets with a small amount of water on the morning of their surgery. Patients who are taking anti-coagulants, like aspirin, need to stop them at least 24 hours before surgery.

Clothing should be removed before coming to theatre and, if available, a theatre gown should be worn, or a clean sheet will suffice if gowns are not available. The gowns help keep the patients warm in theatre and allow them to maintain some sense of modesty (Figure 24).



Figure 24 Women waiting for surgery with theatre gowns on, name bands in place and IV cannulas inserted

# Chapter 3

## Understanding Operation Notes and Classification of Fistula

Operation notes are written by the surgeon who has performed the surgery. These notes should include individual postoperative instructions for each patient and give a description of the damage found and how it has been repaired. Understanding the patient's injury and the complexity of their operation will help in establishing what nursing care they require postoperatively.

Fistula operations are classified according to the severity of the injury. Grading of a fistula is based on the site, size and amount of scarring that has occurred. The critical factors affecting the prognosis of obstetric fistula are the length of the urethra, the size and position of the fistula, the size of the bladder and the amount of scarring caused by the injury.

A short urethra and small bladder can leave patients with stress incontinence after their fistula has been closed. Curing them to be completely dry can be challenging. Large fistulas with extensive scarring also cause difficulties and may take more than one operation to enable the woman to become dry.

There are several different classification systems used for grading fistula; however, the two most used by fistula surgeons are by Waaldijk and Goh. Classification of fistula helps to predict outcomes from surgery and to plan treatment.

There may also be an illustration of the fistula using a descriptive template. These drawings may be easier to understand than the classification systems.

Descriptive fistula drawings (Figure 25) indicate where the fistula is in relation to the cervix and urethra, the size and number of fistulas and any shading indicates the degree of scarring in the vagina or around the fistula margins.

### Descriptive Fistula Drawing

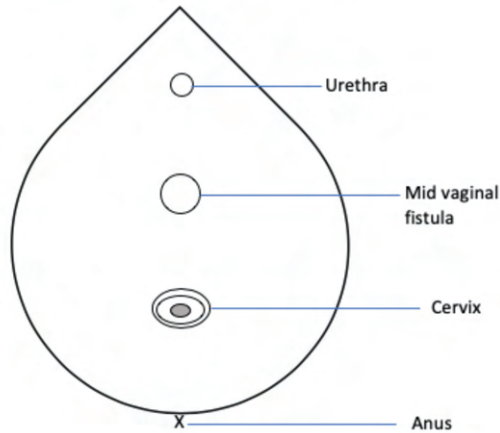


Figure 25 Descriptive fistula drawing template

### Vesicovaginal fistula

The most common site for an obstetric fistula is at the urethrovesical junction, i.e. the junction at which the urethra joins the bladder. This is called a juxta-urethral fistula, with a hole between the bladder and the vagina.

There are a few other sites for fistula.

A mid-vaginal fistula is where the hole is between the bladder and the wall of the vagina.

The juxta-cervical fistula is between the bladder and part of the cervix or tissue close to the cervix.

An intracervical fistula is where the hole is between the bladder and the cervical canal. This often follows damage during a caesarean section or from a ruptured uterus.

Vault fistulas occur after hysterectomy operations and are usually the result of damage to the bladder during surgery or postoperative infection and breakdown of the wound. They are found at the apex of the vagina where the uterus has been removed and the vagina has been sewn together.

The diagram below denotes (Figure 26) the common fistula sites, but some large fistulas may cover a greater area or cover several of the areas shown on the diagram.

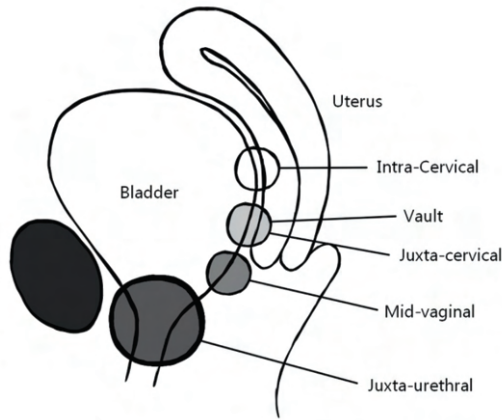


Figure 26 Different VVF sites

### **Ureteric and other fistulas**

Ureteric fistulas are caused by damage to the ureter often during caesarean section, where the ureter has been ligated by a suture or accidentally injured (crushed with forceps, cut or cauterised by diathermy) during surgery. If this happens, urine will escape through the cervix or through the suture line of the uterus following the caesarean section causing urine to leak from the vagina.

Ectopic ureters are uncommon but can present with continuous incontinence. This is a hereditary condition in which the person is born with more than one ureter draining a kidney. If one of the ureters does not connect with the bladder, it can drain outside the bladder through the urethra or vagina. These patients will be able to pass urine normally as well as from the other ureter draining into the bladder. Although uncommon, these patients can present with similarities to VVF patients; however, the history of urinary incontinence will date back to childhood.

Vesicocutaneous fistula formation can present following delivery by caesarean section. This is where the bladder drains through a fistulous tract through the skin following complications after surgery for a caesarean operation. These are uncommon but can occur.

## **Rectovaginal fistula**

Rectovaginal fistula (RVFs), as with VVF, are caused by pressure from the baby's head in the pelvis due to severe obstructed labour. Almost all women who have suffered RVF will have had a stillborn baby.

Most RVF can be repaired via a vaginal approach if they are low or mid fistulas, meaning that the injury between the bowel and vagina is accessible vaginally. High RVFs occur near the cervix or apex of the vagina making surgical access difficult.

Where there is a high RVF and VVF, the patient may need a temporary colostomy to allow the bowel time to heal. Both the RVF and VVF can be repaired at the same time. Managing a colostomy postoperatively and until it can be reversed poses a challenge for patients in low-income countries as access to colostomy bags and products is scarce.

These patients need careful preoperative counselling on how to manage the stoma after surgery, but also to reassure them that it is worthwhile if they can be cured. Time needs to be taken to address and allay any fears or anxieties about their proposed surgery.

## **Perineal tears**

Severe perineal tears, including 3<sup>rd</sup> and 4<sup>th</sup>-degree tears, are often caused by rapid uncontrolled delivery with an unsupported perineum. Most women with perineal tears will have a live baby following delivery.

A 4<sup>th</sup>-degree tear happens when there is complete rupture of the anal sphincter muscle during delivery. There is also loss of the rectal/vaginal wall, leaving the patient incontinent of faeces and flatus post-delivery.

3<sup>rd</sup>-degree tears also involve rupture of the anal sphincter muscle, but the woman will have an intact rectal wall. The patient will also complain of an inability to control flatus and stool, particularly if the stool is loose.

## **Highlights of the operative techniques**

In some surgical cases the surgeon will use additional tissue taken from other parts of the body to promote healing. These tissues include muscle flaps and fibrofatty grafts. Knowledge of these grafts and flaps is important for nursing care to ensure the wounds heal without

complications. The donor sites should also heal without problems if well cared for.

### *Singapore flap*

A Singapore flap (Figure 27) is used in fistula repair surgery in which there is very little vaginal tissue or a significant defect in the vaginal wall to help close and promote healing of the repair.

The graft is taken from the inner thigh and used to improve the tissue and blood supply to the fistula site.

Postoperatively the patient should be nursed keeping her legs together and be on bed rest for the first 3 days following surgery to avoid any pulling on the graft site. Patients should also be advised not to sit for 5 days to avoid putting pressure on the blood supply of the flap which is close to the hip bones.

The donor site should be kept clean and dry and uncovered after the first 2 days. Sitz baths, which involve sitting in a basin of water with a small amount of salt added, should be discouraged in patients with these repairs, as sitting in water can cause the skin to break down and introduce infection to the wound.



Figure 27 Singapore flap donor site wound in the immediate postoperative period

### *Martius fat graft*

Fibrofatty grafts such as the Martius fat graft (Figure 28) are occasionally used to help improve the blood supply and support the suture line of a fistula in which the tissue is poor, thin or fibrosed. They are often used for fistulas that involve the urethra or bladder neck. A flap is taken from the labia majora and used to pad the tissue surrounding the fistula.

Postoperatively there can be bleeding at the donor site of the graft, especially if there is no diathermy available in theatre. Regular wound checks are needed, and alternate sutures may require removal to release tension on the wound from bleeding.



Figure 28 Labial wound after Martius fat graft

Bleeding can often be controlled by applying a pressure dressing to the wound. Patients can be up mobilising the next day after a Martius fat graft repair.

### *Muscle flaps*

Muscle flaps may be used for some operations. Commonly used muscles are the gracilis (thigh muscle), rectus abdominis (abdominal muscle) or fibres from the ischiocavernosus muscle (perineal muscle).

*Gracilis flap*

A gracilis flap is less common and used in repair of RVF caused by radiation therapy. The gracilis muscle is used to make a flap to improve blood supply and promote healing. These patients need to be counselled that they may experience some weakness in moving their leg away from the body afterwards (abduction).

*Rectus abdominis flap*

This type of flap may be used for complex transabdominal combined with transvaginal repairs. Patients need to understand that they may have weakness in the abdominal wall postoperatively.

*Ischiocavernosus flap*

These flaps are sometimes used in complex transvaginal repairs. Sitz baths should be avoided with this type of flap repair. There may also be increased vaginal bleeding postoperatively.

# Chapter 4

## Nursing Care in Theatre

### Preparation for theatre

All patients should be prepared for theatre by the ward staff the day before their operation (Figure 29). This preparation includes having had a successful enema to clear the bowel of faeces for those patients with an RVF or perineal tear or, if instructed, for VVF repair. Patients should have an IV cannula *in situ*, be showered and be wearing a clean theatre gown or clean sheet wrapped around them. They should be wearing a name band and have completed a consent form for surgery after having received counselling as to what is involved in the surgery.



Figure 29 Patients prepared for theatre

Most will be fasting from the night before in case the mode of anaesthesia needs to be changed from spinal or saddle anaesthesia to a general anaesthetic.

### Patient safety

Patients will be called to theatre by the nurse or anaesthetist in charge of the theatre according to the operating list for the day. The patient's records should accompany them to theatre. The patient is then handed

over to the theatre staff by the ward staff after they have completed a theatre checklist to confirm that this is the right patient for the correct operation. Having a name band with the patient's name on it allows staff members to check they have the correct patient if the patient is under general anaesthesia. It should be confirmed that the patient has fasted for at least 6 hours, has had an enema, if required, and her blood results are available. The patient's observations i.e. blood pressure, pulse, temperature and respiratory rate, should be reviewed preoperatively.

The theatre nurse who escorts the patient into theatre, should talk to her in a calm manner to reduce the patient's anxiety and help her to feel safe. The patient is shown and assisted onto the operating table where she waits for anaesthesia.

Most patients will be given a spinal anaesthetic unless this is contraindicated. Patients requiring an abdominal approach to surgery may be given a general anaesthetic. It is not uncommon for an operation to start with the patient being under spinal anaesthesia, but to convert to a general anaesthetic if the spinal anaesthetic starts to wear off, particularly if the operation is difficult and takes longer than expected.

Once the anaesthetic is successful, the patient will be positioned on the operating table for surgery.

During the operation, there should always be a nurse by the patient's head, checking they are breathing well, not in pain and to offer reassurance. Observations (blood pressure, pulse, oxygen saturation, if available) should be taken every 15 minutes and recorded on the anaesthetic sheet. Changes in the observations should be reported to the anaesthetist and surgeon.

There should be a 'runner' available for each case in theatre. This is someone who is available to get what is required for the operating team such as sutures, gauze or extra instruments.

When in theatre, particularly if there are two operations ongoing, everyone should be respectful and concentrate. Mobile phones should be turned off and the sound kept to a minimum, so that communication between the operating, anaesthetic and floor teams is easy.

## Positioning the patient on the operating table

Most fistula operations are carried out with the patient in the Trendelenburg position (Figure 30). The Trendelenburg position has the patient lying on their back with their head at a downwards tilt. The patient is also placed in the lithotomy position, which involves flexing the hips, abducting the legs and flexing the patient's knees. The legs are secured in leg supports. To check the legs are in the correct position in the stirrups, it should be possible to fit two fingers between the patient's leg and the stirrup. It is important to take care that the patient's legs are not compressed by the stirrups, particularly just below the outside of the knee (where the posterior tibial nerve is situated on the bone and compression can cause footdrop), and in the back of the thigh or calf muscle (where compression can cause a deep vein thrombosis). In order to prevent peripheral nerve injury, after 2 hours of the patient's legs being raised on the operating table a 10-minute break, allowing the legs to be lowered and the bed to be flattened, is recommended.

The patient's arms are placed on padded arm boards. The shoulders are supported with shoulder pads to stop the patient from slipping down the operating table when the table is tilted head downwards.

It is important to reassure the patient that they are safe on the operating table and will not fall, particularly when in a head down position.



Figure 30 Ideal position on operating table for fistula surgery

For patients with 3<sup>rd</sup> and 4<sup>th</sup>-degree tears or RVF, a reverse Trendelenburg or a supine position to provide the best access for surgery may be used.

Safe positioning requires planning and good communication between the anaesthetist, the surgeon and the theatre assistants. It is essential to flex both legs at the hips and knees at the same time (one person per leg) to avoid dislocation of the hip joints or neural damage by stretch or direct pressure. This means having enough staff to facilitate safe positioning at the beginning and end of a surgical procedure.

An abdominal surgical approach, used for re-implantation of ureters, requires the patient to lie in a supine position. This involves the patient being placed on their back during surgery with their arms supported on the arm boards.

In a few cases, such as operations for stress incontinence or complex fistula, a combined abdominal and vaginal approach is needed. In these circumstances the Lloyd Davis position, an adaptation of the lithotomy position where the hips are abducted and the knees semi-flexed, is used.

### **Privacy and respect**

During fistula surgery it is not uncommon for there to be more than one patient being operated on at a time in the same operating room. If several fistula surgeons are working together, it is possible to run two operating tables at once, allowing for a greater number of patients to be treated in a short time frame.

In such circumstances, respect and privacy for each individual patient should be paramount with screens used between operating tables (Figure 31). The use of theatre gowns or a clean sheet wrapped around the patient aids greater privacy, as these can be kept on during the operation while the rest of the body is covered in surgical drapes.

No patient should be expected to walk into a theatre completely naked and climb onto an operating table. Again, always preserve the patient's dignity (treat patients as you yourself would want to be treated).



Figure 31 Privacy achieved using screens between operating tables

### Scrub nurse

The scrub nurse (Figure 32) in theatre works closely with the surgeon and performs a surgical hand scrub before putting on a sterile gown and gloves. The nurse is expected to follow the surgical procedure and hand over the necessary instruments, as required. A safe working area is created by covering the patient with sterile drapes and having a sterile work surface for the instruments, creating a barrier between the wound and surrounding germs with the aim of preventing postoperative infection.



Figure 32 Scrub nurse and surgeons working closely together

### *Nursing Care for Women with Childbirth Injuries*

A highly skilled scrub nurse will know all the instruments used in fistula and perineal surgery. They will often be 'one step ahead' and thus able to pass the surgeon the next instrument with very little communication between them.

The instrument trolley is organised with the sharps being kept together at one corner of the trolley and the instruments laid out in order (Figure 33). The scrub nurse will also communicate with the theatre 'runner' if additional items are required or sterile packs should be opened.

It is good practice to count the number of instruments on the trolley, the number of sharps and the number of packs.



Figure 33 Scrub nurse and surgeons working closely together

This is particularly important for abdominal surgery to ensure that all items are accounted for, and that none has been left inside the patient. Gauze swabs should be avoided for laparotomies, and packs should be attached to artery forceps. Gauze swabs are used for operations via the vagina. The surgeon should check carefully at the end of the procedure that no swabs or instruments have been left in the vagina or the wound.

There should be three trolleys set up for each operation. The first trolley contains the gown pack and the second trolley holds the instruments. A third trolley is required for extra instruments that may be needed including a catheter and urine bag, freshly made blue dye and 'jungle

juice', which is a mixture of adrenaline with normal saline (2 ml of 1:1000 adrenalin in 500 ml normal saline) that can be injected into the surgical site. This helps reduce bleeding during surgery.

## Instruments

A well-run and organised theatre will have specific instrument packs assembled and sterilised for the fistula, laparotomy and perineal tear operations scheduled for that day of surgery. In addition, there should be adequate sterile gowns and drapes before surgery starts.

For each pack, the theatre assistant should count and write down the number of instruments in the set. This enables accuracy in the instrument count at the end of surgery. It also helps to prevent instruments from going missing.

Instruments needed for fistula surgery using a vaginal approach:

- Towel clips 7
- Surgical blade holders 2
- Needle holders 2
- Uterine sound 1
- Toothed dissecting forceps 1
- Non-toothed dissecting forceps 1
- Metal catheter 1
- Ureteric probe 1
- Dissecting scissors 4 (straight, curved)
- Allis forceps 6
- Small artery forceps 6
- Long artery forceps 4
- Auvard self-retaining speculum 1
- Sims speculum 2
- Sponge-holding forceps 2
- Stitch scissors 2
- Stitch holder 2
- Kidney dish 2
- Gallipot 1
- Tenaculum forceps 2
- Vulsellum 1
- Babcock 1
- Ruler

A fistula instrument set (Figure 34) such as the FIGO Fistula Repair set (Figure 35) should be available for use in a fistula treatment facility and commonly includes specialised scissors for fistula surgery (Figure 36). However, in the surgical camp environment, the surgeons may have their own instruments with which they operate. These instruments need to be cleaned and sterilised and be available for use, if required.

A standard laparotomy set is used for abdominal surgery.



Figure 34 Instruments for fistula surgery



Figure 35 Example of a FIGO fistula instrument set



Figure 36 Specialised scissors for fistula surgery

## Sutures

There are several different sutures used for fistula surgery; however, most surgeons will have a preference for which sutures they use (Figure 37).

Fistula sutures include:

- Vicryl 2.0 (5/8 needle), 2.0 (1/2 circle needle)
- Vicryl 3.0, 0 & 1
- Silk 2.0
- Polysorb 3.0



Figure 37 Different sutures used in fistula surgery

Sutures used for 3<sup>rd</sup> and 4<sup>th</sup>-degree tears:

- Vicryl or Polysorb 3.0, 4.0, 0
- PDS 2.0

### **Completion of surgery**

Once surgery has been completed, but before the surgeon closes the wound, the instruments should be counted to make sure none is left inside the patient. A Foley catheter is inserted into the bladder, ensuring that the balloon is inflated with 5–8 ml of sterile water or saline. A urine bag should be attached to the catheter making sure that the bag's emptying valve is closed. The catheter should be securely strapped on the patient's abdomen to ensure there is no pulling on the catheter balloon, which may damage the repair. You should ensure that the plaster strapping runs from the right to left hip bones. This makes sure that the tape remains secure when the patient bends over.

The catheter bag should be checked to make sure it is not kinked or caught anywhere and that there is no traction on it before transferring the patient off the operating table and onto a trolley. The urine should be draining and clear.

The patient will have a gauze pack inserted into the vagina to prevent and soak up any bleeding after surgery (Figure 38). It is important to document in the surgical notes the number of vaginal packs used to

ensure they are all removed by the ward staff the following day. When inserting the vaginal pack, it helps if a small corner is left outside the vagina. This makes it easier for the ward staff to remove and for the patient to be aware that it is there.

During the handover of the patient from the theatre staff to the ward staff, any specific postoperative instructions should be passed on. These will include information on how the operation went and whether a blood transfusion is required. Any requirements for additional IV fluid or whether any specific extra close monitoring is needed.

Moving the patient from the operating table to the trolley, and also from the trolley to the ward bed requires at least four people: one at the head, one at the feet and one or two on either side. The patient should be rolled carefully onto a sheet and gently moved sideways onto the trolley or bed. The patient will either be sedated or numb from the waist down and will be unable to protect her wounds. She must not be bumped across the table, as this risks pulling out catheters or rupturing the repair and potentially ruining the good work which has just been done.



Figure 38 Gauze visible from the vaginal pack

# Chapter 5

## Postoperative Care

### Managing the ward

A well-organised and managed ward is essential for optimal postoperative recovery of patients. Having a nurse in charge, managing the patients and delegating tasks to staff, helps to ensure that all patients are well cared for (Figure 39).

Patients returning immediately from theatre after a fistula operation should be nursed in beds near the nurses' station and not at the bottom of the ward, where they are more likely to be neglected. Depending on the difficulty of their operation, they should be looked after within view of the nurses' station until their vital signs are stable (blood pressure, pulse rate and respiratory rate), their pain is controlled and they have no significant bleeding.



Figure 39 Mother Winnie and Sister Pauline in the well-run fistula ward in Kitovu Hospital, Uganda

This can be difficult to manage when there are many patients for theatre during a camp, but it is vitally important to get this right to ensure all patients get the best care possible.

If there is a shortage of beds, patients undergoing an operation for a perineal tear repair can be cared for further down the ward, as they are more likely to be able to mobilise the following day and be discharged within a few days after their operation.

The nurse in charge should know which patient is in theatre during operating times, where their bed is when they return from theatre and should delegate which staff will be responsible for looking after them.

### **Transferring patients from trolleys to bed**

Most patients having had a fistula operation, or repair of a 3rd or 4th-degree tear will be operated on under spinal anaesthetic. They will thus be unable to move their bottom or legs to transfer from a trolley to their bed as the spinal anaesthetic will keep them numb for several hours following surgery.

The best way to transfer patients post-surgery is to have a team of nurses and use a slide sheet, if available, or a piece of polythene sheeting underneath the patient. One nurse needs to support the head, another the feet and legs and two to slide the patient onto the bed. Make sure the catheters are not caught up and end up pulling on the balloon inside the bladder, which may be sitting beside the repair.

The safest way to transfer patients requires a team of nurses with the person at the patient's head taking charge of the transfer (Figures 40a and 40b). Having more people assisting will also help to reduce the likelihood of nurses suffering from back injuries in the longer term.



Figure 40a Transferring a patient from trolley to bed using a slide sheet



Figure 40b Transferring a patient from trolley to bed using a slide sheet

## Catheter care

### *Urinary catheters*

The most important part of postoperative care of a VVF patient is looking after the urinary catheter. All patients will return from theatre with an indwelling urinary catheter, which will stay in place for at least 10–14 days after their operation.

As previously discussed, the bladder wall has been repaired as well as the hole in the wall of the vagina in a fistula repair. To allow the wound on the bladder wall to heal, the bladder needs to be kept drained and decompressed. If for any reason the catheter gets blocked, the bladder will fill up with urine, causing the repair site to stretch and possibly rupture, with subsequent failure of the fistula to heal. This is a very poor situation for the patient as well as the nursing team, as it will cause great distress to the patient when she realises that she is still wet, while surrounded by patients who have had successful repairs. It is also time consuming for the nursing staff, as the patient will need a lot of care and counselling to convince her that it is worth returning in the future for further surgery.

The easiest way to look after the catheter, and ensure free drainage at all times, is to cut off the catheter bag when the patient returns from theatre and have the catheter tubing draining into a bucket or basin (Figure 41). In our experience, cutting off the catheter bag and allowing it to drain freely does not pose any increased risk of bladder infection, as

there is a continuous drainage of urine (Figure 42). This also prevents a heavy urine bag potentially pulling on the bladder and repair wound.

The patient and her attendant should be advised to make sure the catheter is always draining and if they think it has stopped dripping, to inform the nurse on duty immediately. Overnight, the night nurse needs to check the catheters are all draining at least every hour, but this can be made more manageable by asking the patient's attendant to keep checking as well. Finding blocked catheters in the morning and failed repairs are common with poor nursing care, yet are entirely preventable.



Figure 41 Catheter draining into a basin under the bed



Figure 42 Catheter on free open drainage

To protect the bladder repair site, the catheter should not pull on the bladder. To avoid any pulling of the catheter, it should be securely strapped to the patient, preferably on the abdomen or thigh (Figure 43). This is when the nurses need a good supply of strapping and should check the patient's catheter is secure every morning before they get out of bed to mobilise. It is helpful to advise the patients to report to the nurses if the strapping comes off or the catheter is not secure.



Figure 43 Catheter secured to the abdomen

Patients may occasionally return from theatre with the catheter secured by a suture to their mons pubis (Figure 44). This is entirely acceptable, although strapping will also be required in addition to the suture. However, the patient may start to complain that the suture is causing pain once they are mobile. If this is the case, then at this stage it is best to remove the stitch for patient comfort, but it is essential to ensure the catheter is adequately secured with strapping.



Figure 44 Catheter secured with a suture to the mons pubis

It is important to prevent the patient from tying the catheter to their bed, as this is likely to pull on their bladder when they move around in bed (Figure 45). Patients need to know that the bucket should be on the floor if they are in bed to allow gravitational drainage of the catheter. They should not have their bucket on the bed beside them.



Figure 45 Bucket tied to bed can cause pulling on the catheter

A long handle can be made from the patient's used IV giving set to allow them to walk around with their bucket and have the catheter draining freely (Figures 46-47).

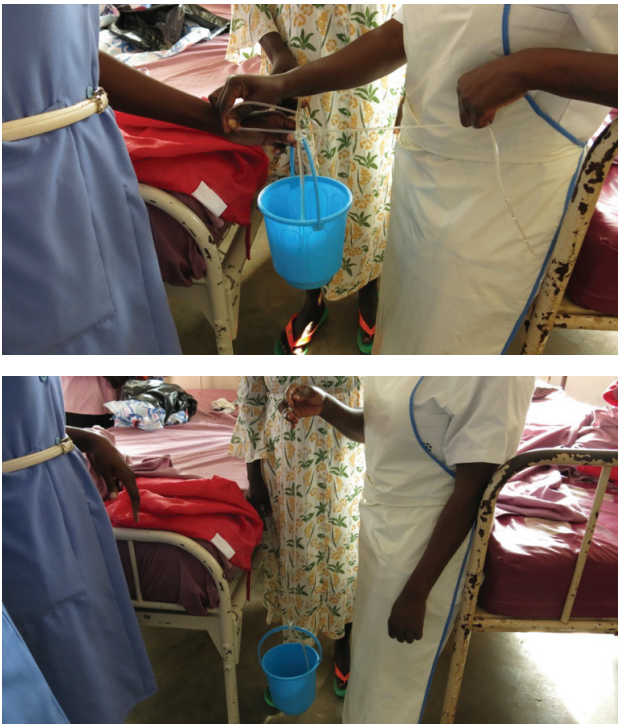


Figure 46 Making long bucket handles from used IV giving sets



Figure 47 Patients mobilising with catheter on free drainage

Closed drainage systems are available such as the urimeter bag, but these are expensive and rarely available in most hospitals (Figure 48). They also require vigilant nursing care to empty the measuring chamber hourly and record on a fluid balance chart.

Some centres may leave the catheter bag *in situ* as a closed drainage system. However, there is no way of knowing if the catheter has stopped draining and has blocked until the patient complains of abdominal pain as the bladder has filled up, which may cause the repair to fail.

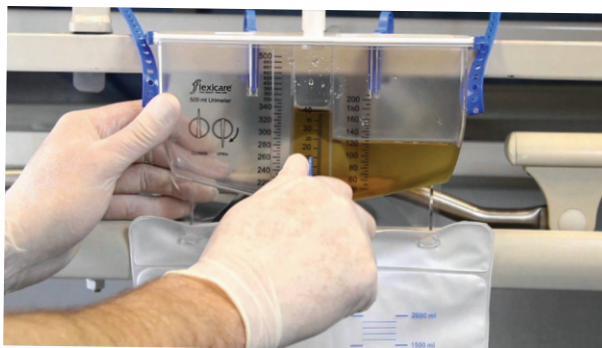


Figure 48 Urimeter in use to measure urine output

Patients who have undergone a perineal tear repair will also return from theatre with a catheter. These patients have had no injury to the bladder but have the catheter in place to prevent urinary retention postoperatively. They can keep their catheter bag attached and empty the bag when it fills up. Most of these patients will have the catheter removed the next day and be encouraged to mobilise.

### *Ureteric catheters*

Following some complex VVF repairs, and ureteric reimplantation operations in which the ureter has been damaged during a caesarean section, ureteric catheters are used as well as an indwelling urinary catheter. These patients will return from theatre with a Foley catheter inserted into the bladder and either one or two ureteric catheters depending on the operation. The ureteric catheters are used to help protect the repair site, where the ureter has been reattached to the bladder, to keep the ureter open and allow healing.

There are two types of ureteric catheters used in fistula surgery:

1. The self-retaining double J- or J-stents used in ureteric reimplantation;
2. Non-self-retaining ureteric stents.

The double J- or J-stents are left in the patient for 2–6 weeks. These need to be removed endoscopically by a surgeon, as they are internal stents.

Non-self-retaining ureteric catheters are usually left in place for 7–10 days, but there will be specific postoperative instructions from the surgeon on when they should be removed. Occasionally ureteric catheters are used to protect the ureters during difficult cases and may need to be left in for only 3–5 days; however, instructions for their removal will always be guided by the surgeon.

Ureteric catheters do not have a balloon keeping them in place and are often stitched to the skin (Figure 49). Care is needed in looking after them and ensuring that they do not accidentally fall out before they are due to be removed. Patients may return from theatre with these exiting through the skin of the abdomen and stitched in place, making it easier to care for them. The ureteric catheter can also exit through the urethra with the Foley catheter and both catheters may

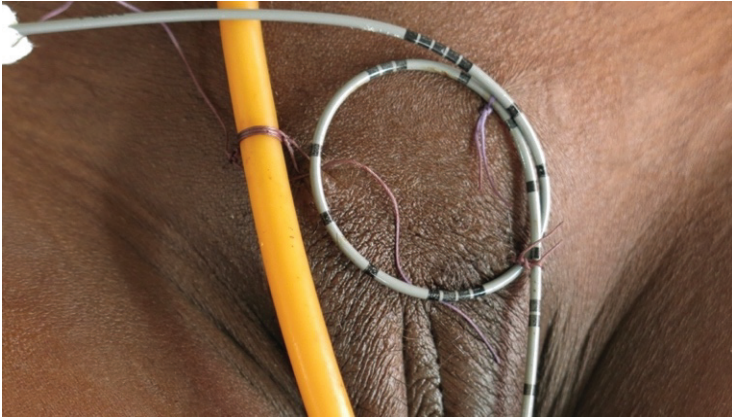


Figure 49 Grey ureteric catheter stitched securely to the skin

be taped together. Care is needed in separating these if the Foley catheter gets blocked.

Draining ureteric catheters without them leaking can be challenging, particularly when the patient starts to mobilise. Most ureteric catheters are inserted into the tubing from an IV giving set or catheter bag without proper connectors (Figure 50). The patient may be disappointed to find their bed is wet, but on careful examination the ureteric catheter has usually become disconnected from the tubing draining it into a bucket or the connection is just poor and so it leaks. The patient needs to be reassured that they have not become wet again and the problem is from the catheter.



Figure 50 Connector for ureteric catheter

Patients who have ureteric catheters as well as a Foley catheter will find that more urine will collect from the ureteric catheter as it is situated nearer the kidneys, causing reduced urine output in the Foley catheter. This is entirely normal and to be expected. The patient will still need to drink plenty but should not be concerned if there is only a small amount of urine draining from the Foley catheter.

## **Fluids**

Most patients will be able to start drinking as soon as they return from theatre (Figure 51). They should be encouraged to drink enough fluid until their urine is clear. A drinking straw can be made from their used IV giving set to allow them to drink while lying in bed.

Many fistula patients will not be used to drinking much liquid, particularly if they have had their fistula for many years. They will have tried to control their incontinence by severely restricting their oral intake. Ensuring that they drink enough postoperatively can be particularly challenging as the patients often fear that they may become wet again. It is vital to stress to patients the importance of drinking to keep the bladder flushed and prevent blood clots blocking the catheter.



**Figure 51** Drinking starts as soon as patient returns from theatre

If a patient is reluctant to drink, make sure you check on them regularly and encourage them to keep their fluid intake up. It is a good idea to gain support from the attendant regarding this and make sure they are providing plenty for the patient to drink. You can tell if the patient is drinking enough by the colour of the urine: yellow urine means fluid intake is insufficient (Figure 52); clear urine is good (Figure 53)!



Figure 52 Concentrated urine

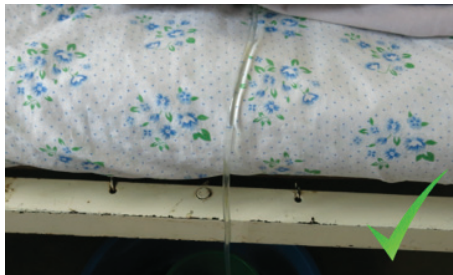


Figure 53 Clear urine

All patients will return from theatre receiving IV fluids. These can be stopped when the patient is drinking, and the urine is clear. However, some patients may experience nausea after a spinal or general anaesthetic. These patients will need the IV fluids to continue until they are able to drink, which may take 24–48 hours. Giving anti-emetic medication, if available, may help control their symptoms.

## Diet

Most patients will be able to start eating their normal diet the day after surgery for VVF repair, when fully recovered from the anaesthetic. Their normal foodstuffs are recommended and they should not change their diet as this may cause diarrhoea or constipation. However, patients who have undergone RVF, perineal tear repair or ureteric reimplantation should introduce food more slowly. Clear fluids, soups or porridge for the first 2 days, moving onto a light diet for a few days are recommended and constipating foods should be avoided. Laxatives are recommended for these patients to avoid constipation and subsequent strain on the repair site.

## **Pain relief**

Most patients who have had a fistula repair undertaken vaginally will require little analgesia (Figure 54). A few may require diclofenac in the first 24 hours postoperatively, then paracetamol for a few days if they have pain.

Those who have had a flap as part of the surgery or a repair done through the abdomen will require more pain relief, with an opiate for the first 24–48 hours depending on the extent of the surgery and how much pain they experience. This can be reduced to diclofenac and paracetamol as their pain reduces.



**Figure 54** Pain-free patient lying comfortably in bed

It is important to always ask the patient if they have any pain rather than assuming that if they are lying in bed not moving, then they have no pain. It is often the opposite in that they may be unable to move due to the pain they are experiencing. Adequate pain relief allows the patient to be up mobilising sooner and will help promote healing.

If a patient complains of pain, particularly lower abdominal pain, always check the catheter is draining before giving analgesia. Ensure the catheter is not blocked from kinks (Figure 55) or clots (Figure 56), or that it has not fallen out. The first sign that the catheter is no longer draining may be that the patient has a full bladder. Always carry out these checks first.



**Figure 55** Catheter kinked



**Figure 56** Blood clot blocking a catheter

## **Bladder spasm**

Some patients may experience bladder spasm in the immediate postoperative period causing urine to leak on the outside of the catheter. They will complain of feeling wet and have lower abdominal pain. A thorough examination is needed to determine from where the urine is coming, checking the bladder is not distended and the catheter not blocked. Buscopan® (hyoscine) can be given to treat the spasms. Other drugs such as oxybutynin or solifenacin may also be used.

## **Antibiotics**

Some surgeons will give no antibiotics, but most will give a prophylactic dose of gentamicin in theatre at the start of surgery. It is recognised that infection usually results from contamination during the operation, so a single dose given before the operation starts is common practice.

If there has been accidental faecal contamination during the operation or a rectal or sphincter repair has been undertaken as well, gentamicin 160 mg IV daily for 3 days and metronidazole 500 mg IV 8-hourly for 48 hours is recommended.

## **Monitoring vital signs and wound checks**

All patients who have undergone surgery should have observations taken and recorded when they return from theatre. An observation chart should be kept in the patient's notes or at the end of the bed and the patient's blood pressure and pulse should be recorded every hour for at least the first 4–6 hours after surgery, then reduced to 4-hourly, if stable.

A drop in blood pressure and rise in pulse may be a sign that the patient is bleeding. It is vital that this is detected early to allow the patient to be taken back to theatre for the bleeding to be addressed before problems arise.

The patient's pad and visible parts of the vaginal pack (as well as any external wound) should also be checked hourly after return from theatre for any signs of bleeding. For many this will involve checking that there is no fresh bleeding from the vaginal pack (Figure 57).

Once patients are stable and mobile, daily temperature, blood pressure and pulse should be taken to observe for any sign of infection over the



Figure 57 Postoperative wound check for bleeding

next few days or weeks. Early detection and prompt intervention with antibiotics will hopefully prevent any breakdown of wounds, which can lead to failed repairs.

It is the responsibility of the nurse in charge of the fistula ward to ensure that observations are taken and recorded. This can be delegated to other members of staff, but the nurse in charge must ensure this has been done. As well as the daily observations, the nurses should record on the chart each day whether the patient remains dry, is drinking and her catheter is draining – the three Ds (Appendix B) (Figure 58).



Figure 58 Patients drinking, draining and dry

Wound checks should be carried out daily for all patients who have had a 4<sup>th</sup>-degree tear repair, particularly once their bowels have started moving. The nurse needs to check that the wound is being kept clean and advise the patient to wash after passing stool.

Wound checks are easiest to do with the patient lying on their side with knees to their chest (Figure 59). These repairs are prone to infection and breakdown if the wound is not kept clean and dry. It is important to stress to patients the importance of keeping the wound clean. This is because some patients may fear and thus resist cleaning the wound as they are worried about touching the stitches.



Figure 59 Daily wound check on perineal tear operations

### Removal of vaginal packs/perineal hygiene/pads

After a surgical repair for fistula or 3<sup>rd</sup>/4<sup>th</sup>-degree tears, patients will return from theatre with a vaginal pack *in situ* to stop any bleeding by applying pressure in the vagina and to soak up any residual bleeding from the operation. These packs should be removed the day after surgery to prevent infection.

Removal of the vaginal pack is best carried out during perineal cleaning (Figure 60). Perineal washing is necessary postoperatively, to clean any discharge, blood or clots from the perineum and catheter, as well as to reduce the risk of localised infection.

The pack should be soaked with dilute Savlon or saline before it is removed, as this makes the pack slide out more easily, thus reducing discomfort for the patient as much as possible. Vaginal packs made of Vaseline® gauze are easier to remove, as they do not stick to the vagina.



Figure 60 Removal of vaginal pack and perineal washing

These packs can be made in the hospital by adding a small amount of petroleum jelly (Vaseline) to the sterilising drum containing vaginal packs. The heat during sterilisation will melt the Vaseline, which will soak into the vaginal packs.

During removal of the pack, the patient may experience some discomfort, but this will be temporary. Good lighting is needed to inspect the pack after removal for any sign of infection or fresh bleeding. It is important to ensure that there is no gauze left in the vagina, as this can be a source of postoperative infection and lead to breakdown of the repair.

Perineal washing should be carried out daily after a fistula repair. The patient is encouraged to do this herself when bathing. However, if the patient is generally unwell or has had extensive surgery and needs longer to recover in bed, she will need a daily bed bath, which will include careful perineal washing with dilute Savlon or similar by the nursing staff.

As discussed previously, the perineal tear repair wounds need to be cleaned following every bowel motion. A small bucket of water is adequate to enable patients to do this after using the toilet.

Sitz baths may be recommended for perineal washing in some centres. To do this the patient fills a basin with warm water and a teaspoonful of salt and sits in the basin for 5–10 minutes to clean the perineum. However, this is impractical for many women as they may not have ready access to warm water or somewhere private to do this. Current research

suggests that there is no reduction in postoperative infection rates or pain relief from the use of sitz baths.

Pads should be provided to soak up any bleeding after the vaginal pack has been removed. These pads can be made by the nursing staff using gauze and cotton wool (Figure 61). Large amounts of bleeding should be reported to the ward staff and the medical staff informed if the bleeding is significant.



Figure 61 Making pads from gauze and cotton wool

### **Mobilisation of patients**

Following straightforward vaginal fistula repair, most patients can be up mobilising the next day, with their catheter draining into a small bucket that they can carry around with them (Figure 62). Patients with footdrop will need the support of their relative or attendant to help them ambulate and carry their bucket.

Patients who have had abdominal surgery including ureteric re-implantation, flaps or grafts will need to spend more time resting in bed

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recovering. If well enough, they can be out of bed and gently mobilising around the ward the day after their surgery. It is best to keep these patients' beds near the nurses' station, as they will require more nursing care. They can be moved further down the ward when they are well and have not developed any postoperative complications.

3<sup>rd</sup> and 4<sup>th</sup>-degree tear patients will have their vaginal pack and catheter removed the day after their surgery and be up and walking. If there is a shortage of beds on the fistula ward, these patients can be moved to other wards to be looked after as they will require little care once they are mobile.



Figure 62 Fistula patients mobilising postoperatively

# Chapter 6

## Postoperative Complications and Challenges

### Blocked catheters

Blocked catheters, as already mentioned, can be a disaster for patients following fistula surgery. If the catheter has blocked and this has gone unnoticed, the bladder will fill up, stretching the repair site. Eventually, urine will escape through the wound ruining the repair or bypassing the catheter. The first sign of a blocked catheter may be the patient complaining of abdominal pain from a full bladder.

To check whether a catheter is draining (Figure 63), first raise the catheter above the level of the bladder and see whether urine runs back down the tube into the bladder. Take note of any kinks, blood clots, tissue debris or pus in the catheter that may be causing a blockage.



Figure 63 Checking if catheter is blocked

If the catheter is not draining, it may need to be flushed (Figure 64). To do this a sterile 60- or 100-ml catheter tipped syringe is needed with a sterile receiver (kidney dish) and some normal saline. It is useful to have a few sterile packs containing a receiver and syringe ready for use if and

when required. Using sterile equipment will reduce the chance of introducing infection into the bladder during irrigation.

A catheter flush involves gently pushing 25 ml of saline through the urinary catheter to dislodge any clots or debris that may be blocking the catheter, then reattaching the catheter tubing and allowing it to drain freely. There can be a temptation to pull back on the syringe during irrigation, but this should be avoided, as it may inadvertently cause injury to the repair site in the bladder wall if the catheter balloon is sitting near the wound.



Figure 64 Carrying out a catheter flush

If the catheter does not unblock after flushing with saline, then it needs to be replaced with a new Foley catheter. If blood clots are the cause of the blockage, a larger size of catheter will need to be passed when it is replaced – sizes 18F or 20F are ideal. All nurses should have training to be able to pass a urinary catheter using an aseptic technique.

### **Bloody urine/clots**

If the patient is not drinking enough fluid, the urine in the catheter will be dark in colour and may have blood and clots in the tubing (Figure 65). Clots and debris in the catheter can cause the catheter to block. Make sure the patient drinks more and that they have an attendant providing them with ample fluids. The patients should be encouraged to drink until the urine in the tubing becomes clear.

Patients who have had their bladder opened to reach the fistula or have



Figure 65 Bloody urine

undergone a ureteric re-implantation operation may have blood in their urine for a few days. This can be alarming for patients, but if they are drinking plenty, they can be reassured that it will settle in a few days.

Most patients will need to be reminded daily to drink plenty and make sure their urine is clear in colour. It is helpful to encourage the attendant to assist with this.

## Infection

Infection can occur in the postoperative period despite the use of prophylactic antibiotics. If not recognised early, sepsis can develop and is the most common cause of a failed repair.

Infection from the vagina produces pyrexia, increased discharge, secondary bleeding and a bad odour. You should always check there is no swab retained in the vagina. Daily temperature recordings will help detect early signs of infection.

High fluid intake reduces the risk of the patient developing a urinary tract infection. Patients who develop severe infection should be treated with IV antibiotics. Ampicillin 1 g once daily or ciprofloxacin 400 mg 12-hourly for 3 days IV should be started and is usually sufficient to treat the infection. Simple urinary tract infection or genital infection can be treated with oral antibiotics. Where facilities are available, a wound swab or urine sample should be sent for culture and sensitivity testing.

However, treatment must not be delayed by waiting for the results to come back before medication is started.

Wound infections may also occur in patients who have had an abdominal repair or a flap such as the Singapore or Martius. If the wound becomes infected, daily wound dressings and antibiotic treatment will be necessary.

Patients who have had a 3<sup>rd</sup> or 4<sup>th</sup>-degree tear repair may also need antibiotics if their wound becomes infected. As stated previously, they should be advised to clean their wound with water every time they open their bowels and then to pat the skin dry.

## **Bleeding**

If any bleeding occurs within the immediate postoperative period, the patient must be taken back to theatre to determine the source of the bleeding. Most patients will have their bleeding arrested with more packs inserted into the vagina. Where the bleeding is arterial, this can be stopped surgically only through a further operation.

Bleeding is less common in the second week post-surgery and is almost always caused by infection. An area of the wound may become infected with slough breaking off leaving an exposed area that can be the cause of bleeding. Most bleeding can be stopped by 'packing' the area, but on a few occasions the patient may need to return to theatre for exploration and surgical intervention to arrest the bleeding. Late bleeding secondary to infection should also be treated with antibiotics (oral metronidazole and cephalexin or amoxicillin).

If a patient has had significant bleeding, they may need a blood transfusion if available at the fistula treatment centre. Check the results of the patient's preoperative Hb level which can help determine whether they need blood. If their preoperative Hb was low and they have been bleeding, it is advisable to repeat the Hb and do a cross match if not already undertaken and give a transfusion of blood. If the Hb is within the normal range, they can have oral iron and folic acid (fefa) for 4 weeks.

## **Spinal headache**

A few patients will suffer from a headache following spinal anaesthesia. They should be advised to lie flat on the bed and not get up for a few days until the headache resolves. Paracetamol can be given for pain

relief, but a few may need stronger analgesia such as intramuscular diclofenac or tramadol. They should also be encouraged to drink more water. Some may find the caffeine in a cup of tea helps reduce the headache.

### **Vomiting post-anaesthetic/ileus**

A few patients may experience nausea and vomiting after a spinal or general anaesthetic. Those who have required ketamine may take longer to recover from their anaesthetic and will need to be nursed in bed until they are able to eat and drink and are ready to mobilise. An anti-emetic such as metoclopramide or ondansetron can be administered, if available, to relieve their symptoms. IV fluids are also required until the patient is able to drink enough to keep the urine clear.

A small number of patients may suffer from paralytic ileus following an abdominal approach during surgery. If the patient continues to vomit, there are no bowel sounds and the abdomen becomes distended, a nasogastric tube should be passed to empty the stomach and give the patient symptomatic relief. They will also need to remain 'nil by mouth' and have IV fluids running until bowel sounds are present, after which the patient can start drinking.

### **Patient becomes wet**

If the patient becomes wet within the first few days after surgery, this is usually a bad sign that suggests the repair has failed or they have a second fistula that has been missed on examination. There is usually little that can be done at this stage other than to keep the catheter in, in the hope that healing might occur. The patient will need to be counselled that further surgery is needed, and they will need to return for more treatment in the future.

A late leak, in the second week or later, is usually due to infection or a blocked catheter. In these cases, the fistula repair site should have a good blood supply and patients are likely to heal if the catheter is kept in for longer. The patient will need to be reassured that staying in hospital for an extra few weeks with the catheter in could help to get them dry. Nursing these patients prone (Figure 66) can help promote healing, as the wound at the base of the bladder will be uppermost with the catheter tip below (sump drainage) (Figure 67).

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This involves keeping the patient in bed, lying and sleeping face down, getting out of bed only if they need to go to the toilet to empty their bowel.



Figure 66 Patient being nursed prone

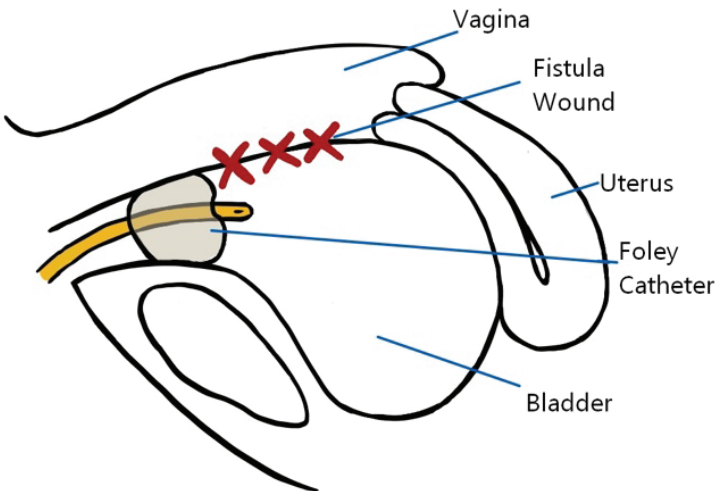


Figure 67 Sump drainage (repair site uppermost when patient lying on their front)

## Counselling women who have failed repairs

Sadly, a few fistula repairs will not be successful following surgery even with good nursing care. These women will need counselling by the surgical and nursing staff and must be encouraged not to give up hope of being cured (Figure 68). They need to wait at least 3 months, and preferably 6, after the initial surgery before a repeat attempt should be considered. This will allow healing of the tissues and offer the best chance of success from subsequent operations.

It is very distressing for both patients and staff when a repair has failed and the patient may feel she is the only one who is still wet, when her fellow patients appear to be dry. It is beneficial to introduce such women to patients who have returned for further surgery after experiencing a failed repair first-time round. Knowing all is not lost at this point is helpful to the women who have already been living a life of despair being wet from a fistula and may also have borrowed money to get to the hospital.

These women will need a lot of care and empathy to support them through the difficult period of coming to terms with going home continuing to experience the incontinence for which they initially attended.



Figure 68 Counselling a woman with a failed repair

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Some of them will go back home with a residual fistula smaller than the one they arrived with, so their incontinence may be less. They need to be advised on when they should re-attend for surgery.

A small number of patients will have their fistula successfully repaired but continue to leak urine from stress incontinence. This is due to the tissue and nerve damage of the urethra, which controls the body's ability to maintain continence. Such patients will benefit from careful counselling, so that they do not lose hope of becoming dry. They should be advised that additional operations may be necessary to help address their problem.

# Chapter 7

## Urinary Diversion Operations

Urinary diversion operations are an option for fistula patients who are deemed incurable. These often include patients who have had many operations to try and make them dry, but who are still wet due to either a small bladder or a urethra that does not work or a combination of both. There are several different types of urinary diversion operation, which all have advantages and disadvantages for the patient, with none of the options being perfect.

### Mainz II pouch

The Mainz II pouch is created in such a way that the ureters are implanted into a pouch constructed from bowel, so the patient passes stool and urine through the anus. For this operation to be a success, the patient should have good anal sphincter control. This is tested by asking the patient to hold about 250 ml of water mixed with methylene blue or gentian violet given as an enema for 60 minutes. The ideal patient for diversion should not leak, and this is judged by giving her a pad to wear during the assessment period. Good sphincter control is confirmed when there is no dye on the pad.

The patient should have normal renal function before proceeding with this operation, as any renal impairment will cause the patient to become acidotic and to potentially develop other complications. Renal function should be checked at least on a yearly basis, as well as a renal ultrasound performed to check for hydronephrosis.

Diverting urine to the bowel alters the patient's metabolic state, as some of the urinary constituents will be absorbed through the bowel, causing the blood to become more acidic. To prevent metabolic acidosis, the patient should take a daily teaspoonful of sodium bicarbonate orally for the rest of their life following this procedure. This is readily available, as it is a common ingredient used for baking.

Diversion patients should also be carefully counselled about the increased risk of tumours developing in the sigmoid colon – with an estimated risk of 20% over 20 years – and they should be advised to

consult a surgeon if they experience severe abdominal pain or blood in their stool.

## **Ileal conduit**

The ileal conduit involves diverting the ureters into a small section of bowel which opens out onto the skin of the abdomen as a stoma. The urine drains into the ileal conduit and collects into a urostomy bag, which is emptied by the patient. This form of diversion is good for patients with impaired renal function, since there is less absorption of urinary constituents, hence less risk of metabolic acidosis.

For this operation to be a success, the patient should have a readily available supply of urostomy bags, which is often not a realistic option in many contexts in which fistula occurs. Another element that needs careful consideration is that many women may find it unacceptable to have a different anatomy/body image from others in their community, and to face the prospect of living with a stoma bag for the rest of their life.

## **Continence pouch (Mitrofanoff)**

A continence pouch may be an option for patients who have good bladder capacity, but who have a badly damaged urethra. For such cases, a Mitrofanoff procedure can be performed, which involves using the appendix or bowel to drain urine from the bladder to the wall of the abdomen, and totally closing off the urethra. The patient can self-catheterise by passing a catheter through the appendix/bowel to empty the bladder.

Patients may experience some leakage if they do not empty their bladder on a regular basis.

This is a highly complex procedure, which should be performed only in specialist centres.

## **Suprapubic catheter**

The use of suprapubic catheters is a long-term option for certain patients who may be considered unsuitable for other types of diversion operation. They have a suprapubic catheter inserted through the abdomen and can use a spigot to keep it closed, opening it every few hours to empty the bladder. The Foley catheter requires to be changed

once a month if the patient is happy to accept this option. If the patient has ongoing leakage of urine from a damaged urethra, they may still not be completely dry, even when they use a suprapubic catheter.

### **Nursing care for patients with urinary diversions**

The diversion operations all involve surgery through the abdomen. The pre- and postoperative nursing care is the same as for all abdominal surgery. However, there are a few instructions specific to each operation.

Preoperative care is the same as for fistula and perineal tear operations, including fasting from the night before surgery, preoperative blood investigations, cannulation, surgical-site preparation and a theatre gown.

In addition, diversion patients require meticulous preoperative bowel preparation to prevent infection. This involves giving a soap enema the evening before surgery to clear out stool, then giving a saline enema to wash out the rectum on the morning before theatre.

Postoperatively, patients should be carefully monitored, so that any complications can be detected early. In the immediate postoperative period, blood pressure and pulse should be checked hourly for the first 6 hours, then 2-hourly for 6 hours, then 4-hourly until the patient is fully ambulant and stable.

On return from theatre and in the immediate postoperative period, it is important to observe the patient closely for signs of bleeding. Regular monitoring of the patient's vital observations is critical during this phase, as any change – including a drop in blood pressure and an increase in pulse rate – may indicate bleeding. Such patients are likely to be in pain, perspire and become drowsy. Any suspicion or sign of bleeding should therefore be reported as an emergency to the medical staff.

An anastomotic leak postoperatively is most likely to happen around day 5. Pain, tachycardia and a spiking temperature are suggestive of a leak. If this occurs, the surgeon should be notified immediately to decide if the patient needs to be taken back to theatre. An anastomotic leak is a highly dangerous complication for the patient, which can result in death. The quicker the situation is dealt with, the more likely the patient is to survive, and they should receive IV antibiotics and return to theatre as an emergency. They may need to have the procedure repeated or a colostomy performed.

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IV fluids should be administered for the first few days while the patient is nil by mouth. However, the patient can start taking sips of water on day 1, then take oral fluids for 4 days, eventually moving on to take a light diet, if there are no signs of paralytic ileus. This regime allows sufficient time for the pouch and the implanted ureters to heal at the site of the anastomosis.

The patient is likely to require strong analgesia, such as opiates for the first 24–48 hours postoperatively to keep her comfortable and to allow healing. She will remain on bed rest for the first 1–2 days, after which, she may start mobilising round the ward when she feels ready.

Mainz II patients usually have a rectal tube, which is likely to be a size 24 Foley catheter, and an endotracheal or flatus tube extending out of the anus (Figure 69). This is to drain stool and urine. They will also generally have two ureteric catheters draining urine from the ureters, and which have been reimplanted into the pouch. The rectal tube should be removed after the second postoperative day, as they do tend to become blocked with stool. The ureteric catheters should remain for 7–10 days and should be checked daily to make sure they are draining. Instructions for removal of the ureteric catheters should be given by the surgeon in the postoperative instructions, which should be followed carefully.



Figure 69 Rectal tube and ureteric catheters protruding from anus in a Mainz II patient

Ileal conduit patients have a stoma on the abdomen draining urine and usually return from theatre with two ureteric catheters, which should be removed on day 7 postoperatively, or as instructed by the surgeon. Urostomy bags will be required to continue collecting the urine and regular, supportive explanations should be given to the patient about how to empty the bag and care for the stoma. Patients should be given a supply of stoma bags to take home and access to additional bags.

However, if stoma bags cannot be obtained a last resort can be to use the Arua Stoma bag. This device is constructed using the end of a plastic cup, gauze, shoemaker twine and small polythene bags. The patient can cover the stoma with this method and change the polythene bag regularly (Figure 70).

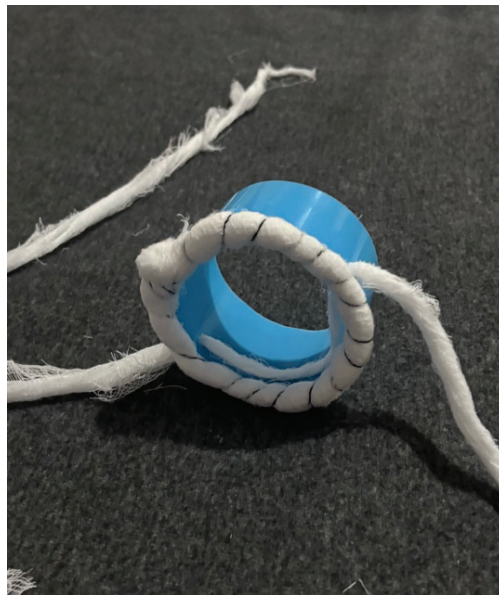


Figure 70 The Arua Stoma bag

Urinary-pouch patients have an indwelling Foley catheter to drain urine until the wound heals. The catheter is removed on day 14 and the patient should be taught how to perform clean intermittent self-catheterisation to empty her bladder.

# Chapter 8

## Discharge

### Removing catheters

Urinary catheters are usually removed around 10–14 days postoperatively. A few will need to stay in longer following specific advice by the surgeon.

Patients should stay in hospital for 2–3 days after removal of the catheter, to make sure there are no complications before they travel home.

Bladder training is carried out after removal of the catheter. This helps to retrain the bladder to fill up and empty again and gradually increases the bladder volume. Most fistula patients will have had a bladder that has not functioned normally for some years due to the continuous leakage of urine, so the bladder can take time to work properly again.

A simple way is to advise the patient to urinate every hour after their catheter has been removed, gradually increasing this to every 2 hours, then 3 hours over the next few days.

All patients should have residual volume assessed on the day when the catheter is removed. This involves asking the patient to void in a bucket and measuring the voided volume. An in/out catheter should then be placed and any residual volume in the bladder measured.

If the residual volume is greater than 100 ml or more than the voided volume, the patient has urinary retention. In this case, the patient should have residual volumes checked over the next few days before discharge home.

If urinary retention persists, the patient should be taught intermittent self-catheterisation before discharge home if she is to remain dry.

If the patient is passing urine normally with no urinary retention, she can be allowed to travel home. During the journey, the patient should be advised to stop every 2 hours, if possible, to pass urine if she is travelling a long distance. If it is not possible to stop to urinate, patients should be

encouraged to pass urine in the clothing they presented to hospital in when they were wet. They should be warned that if they allow the bladder to fill up and become distended during travel, they risk damaging the repair and becoming wet again.

Checking each patient individually before they go home is the responsibility of the nurses. Identifying patients with chronic retention who can be taught intermittent self-catheterisation will help reduce the risks of them becoming wet after discharge home.

For any patients who are wet before the catheter is removed, the chances of closure of the fistula are small at this point. It is therefore advisable to remove the urinary catheter and to ask the patient to return for review and, potentially, for additional surgery in the future.

### **Dye tests**

Dye testing is generally done during screening, to check the presence and location of a fistula. The procedure may also be done in theatre before a fistula repair takes place. In addition, some centres do dye tests prior to discharging the patient. Great care should be taken when doing a dye test in the early post-repair period, not to damage or traumatise the newly repaired fistula, for example, through improper use of the Sims speculum or by overfilling the bladder with the dye solution.

It is, therefore, better if the surgeons do the dye tests. They are likely to be experienced at doing them and can subsequently advise on appropriate care and management of each patient.

### **Pad tests**

Pad tests are an easy way of finding out if a patient is wet after removal of the urinary catheter or can be used during screening to confirm if a patient has urinary leakage.

To do a pad test, the dry pad is first weighed, and the patient is asked to drink 500 ml of water. She is then requested to wear the pad inside her underpants, to walk around for an hour, to do five squats and five jumps and to walk up some steps. After an hour, the pad is weighed again and the difference in the weight of the pad before and after the test will determine the extent of any urine leakage.

## **Stress incontinence**

A small number of patients will have had a successful closure of their fistula but remain incontinent from the urethra (stress incontinence) after surgery. This is disappointing for the patient as they may feel their symptoms are no different. There can be several causes for stress incontinence, the main one being the destruction of the urethral tissue or bladder neck from the birth trauma making it difficult to help get the patient completely dry. The patient may have been left with an exceedingly small bladder after their injury, making it difficult to maintain continence. Bladder retraining is important for all patients. This involves gradually increasing time between voids to slowly increase the bladder capacity.

An experienced fistula surgeon may be able to offer further surgical intervention using skin or muscle flaps, stress sling surgery and bladder augmentation procedures to try and improve the stress incontinence. However, not all patients will benefit from this type of surgery.

Pelvic floor exercises, if done well and consistently, may help some women with stress incontinence and can be taught by the nurses before the patient is discharged home. They should be advised to continue with these exercises for 3–6 months or until their next pregnancy (Appendix C).

Women who have had many attempts at surgery and are still incontinent of urine are often deemed incurable. However, there are a few options to keep them dry and these patients should be advised of these urinary diversion operations.

## **Discharge advice for fistula patients**

All patients who have had fistula surgery are advised to abstain from sexual activity for 3–5 months following discharge home and recommended to use contraception to delay future pregnancy for up to a year if possible.

They are also advised not to do any heavy lifting for at least 3 months after going home. For some this may be difficult if they are subsistence farmers, but it should be stressed that they could become wet again if they do not follow the advice.

If there are any signs of infection, either urinary or discharge from the

vagina, the patient should seek medical help as they may require treatment with antibiotics.

Any future pregnancies will require safe delivery by caesarean section. This should be stressed strongly to the woman and family, as her chances of developing another fistula from subsequent vaginal delivery are high. If she becomes wet again, she is advised to contact the fistula repair centre and attend for review.

### **Discharge advice after repair of 3<sup>rd</sup> and 4<sup>th</sup>-degree tears**

Most patients will be able to return home 2–3 days after an anal sphincter repair. If their bowels are moving and the wound is clean and dry, they can be discharged home with antibiotics and a stool softener such as bisacodyl 5 mg for 10 days and advised to continue drinking plenty of fluid.

Patients need to continue cleaning the wound after every bowel motion to prevent the wound becoming infected and breaking down. Sitz baths are not encouraged unless the wound is infected. Cleaning with water and drying the skin after emptying the bowel will suffice. If they experience discharge from the wound, they should wear a small pad to keep the wound as clean as possible.

Sexual activity is not advised for the first 3 months, as early resumption of sexual intercourse can cause the repair to break down and for the patient to become incontinent of faeces again. Patients should be advised that although the skin has started to heal on the outside, it takes longer for complete healing of their wound.

A high fibre diet to make sure they are passing soft stool is advised. Drinking plenty of fluid also helps to avoid constipation. If a patient becomes constipated the large, hard stool and straining to pass faeces will put pressure on the wound, which can lead to a breakdown of the repair.

For a woman who has undergone repair of a 4<sup>th</sup>-degree tear, all future deliveries should be by elective caesarean section and her family advised to plan for this. They need to understand that if the woman has another vaginal delivery, the likelihood of a 4<sup>th</sup>-degree tear is high and subsequent repairs do not have the same success rate. However, if the woman does end up labouring and is unable to reach a hospital quickly

enough for a caesarean, she should be advised to push gently during the birth, with her perineum supported by a midwife, to ensure a slow, controlled delivery and reduce the risk of a repeat 3<sup>rd</sup> or 4<sup>th</sup>-degree tear. Patients with a previous 3<sup>rd</sup>-degree tear repair on the other hand may have a vaginal delivery under the supervision of suitably trained medical personnel.

## **Follow-up**

In some centres patients will be asked to attend for follow-up with the doctor a few months after being discharged home to check they have not developed further problems or complications after surgery. The nurse in charge of the ward should also keep a register with the patients' names and contact details. Mobile phones are a good way of keeping in touch with patients if they have travelled a long distance to access surgery. Also, giving them a phone number to call at the fistula treatment centre, if they run into problems once home, is helpful.

Patients who attend hospital with a fistula when there is no surgery available at that time should have their name and contact details added to a register and should be recalled when surgery becomes available. It is important to never close the door on a woman with a fistula, bearing in mind the trauma she has already suffered and the difficulty she may have had in presenting to the hospital for treatment.

# Chapter 9

## Social Reintegration and Rehabilitation for Fistula Patients

Most patients will be able to return to their homes and families and live a normal life following successful fistula surgery. However, we know that many fistula patients have lived in isolation for many months to years and have been shunned by their families and friends and may need time to reintegrate back into society. Several may believe their fistula has been attributed to charms, witchcraft or bad luck.

Many fistula patients are young in age, still girls rather than women and become detached from their families and friends due to the stigma of having had a fistula. Most have a limited education and are often isolated after losing their job, being separated or divorced from their partner or husband and source of income. In addition, they will almost certainly have lost the baby that caused the fistula as either a stillbirth or early neonatal death. Very few will have had the opportunity to witness the burial of their baby due to being hospitalised after a difficult postnatal period.

The majority of fistula patients have a low level of education and are unemployed, hence the need for rehabilitation to empower them to integrate back into society. In some countries there are government policies that include protocols for reintegration and rehabilitation for women who have suffered from fistula.

Social reintegration helps fistula survivors to reconnect with their families and friends through programmes that involve counselling and activities to develop new skills to enable them back into the workplace and to generate an income for themselves.

Trained counsellors play an invaluable role in helping many of these women come to terms with the dreadful experience and stigma they have endured from having had a fistula. Time is needed to listen to their stories and to appreciate what they have been through. It is important that they understand what caused their fistula using charts or a model to help illustrate the process of obstructed labour and fistula formation.

Equally important is that they acknowledge that fistula has nothing to do with witchcraft, charms or bad luck and that it is completely preventable with timely access to trained medical personnel.

Rehabilitation activities empower women by helping them develop skills that allow them to earn a living and to rejoin their families. Some of the activities taught in reintegration and rehabilitation programmes include teaching the women to knit or sew and to make hand crafts that they can sell. Baking, soap-making and candle-making are also taught, as is animal husbandry where they can learn how to look after animals, such as goats or chickens, to help raise an income (Figure 71).



Figure 71 Cured patients involved in a reintegration project

These women should be encouraged to resume a normal life and to meet a new partner if their husband or partner has left them and, after a period of time, to try again for a family if that is their wish.

### **Secondary infertility**

Many fistula patients find their menstrual periods do not return following delivery. There is no clear evidence as to why this occurs, but many have experienced severe illness due to the nature of fistula formation. Sepsis, significant weight loss and depression are common features following fistula injury causing a stress reaction in the body. Some may be affected by Sheehan syndrome, which is a hormone imbalance caused by necrosis of the anterior pituitary, whilst others may suffer from Ashermann syndrome, which causes destruction of the lining of the uterus.

There are a few women who will have had a hysterectomy after the birth but may be unaware that this has happened. Some will fail to menstruate

due to their cervical canal being closed, which may have happened during surgery, making them unable to conceive.

However, most women will become sexually active again in time and should be advised to use contraception to delay conception for at least a year following fistula repair. The use of contraception will help reduce the fear they may have of a future pregnancy after the experience they have been through. A few may choose not to be sexually active again, as they are unable to overcome their fear of sex, whilst some may find sexual intercourse too painful (dyspareunia) following fistula repair. Sexual intercourse may also not be possible if the patient has vaginal stenosis (narrowing of the vagina), which may lead to further rejection and stigma.

Elective caesarean section should be offered for all women who have had fistula repair surgery to reduce the risk of any reoccurrence. Stillbirth rates are reported to be high for fistula survivors. There also appears to be an increased risk of miscarriage following fistula repair.

## **Fistula prevention**

Primary prevention of fistula is the most important step in fighting fistula. All women should be seen frequently in the antenatal period and a birth plan discussed with them. Women should be encouraged to deliver their babies with skilled birth attendants, such as midwives, at health centres or hospitals and to attend for regular antenatal care.

Reducing delay in getting to hospital is a priority for women with obstructed labour. All women in pregnancy should be encouraged to plan and save some money for transport when labour begins. Emergency transport vehicles need to be in place for early referral of obstructed cases.

Educating midwives and traditional birth attendants on early signs of obstructed labour will help with prevention of fistula. Perhaps an easy message to educate the traditional birth attendants is that no woman in labour should see the sun setting twice during delivery and to seek advice early to avoid problems.

Routine use of partograms in obstetric care allows obstructed labour to be detected early and improves maternal and newborn health outcomes.

Following a prolonged labour with no urinary leakage, it is advised to leave a Foley catheter in place for 10–14 days. With a fresh VVF (i.e. within the first 3–4 weeks post-delivery), a Foley catheter should be left *in situ* for 4–6 weeks. Some small fistulas will heal completely with decompression of the bladder, and others will reduce in size, making the repair easier. Caesarean sections and gynaecological operations should be performed by competent surgeons using good lighting.

There is a need for enhanced surveillance in areas where fistula rates are high to advise government policies to help improve maternal outcomes. Specialist fistula treatment centres are needed to provide optimal care in treating, reintegrating and rehabilitating women with fistula.

Eradication of obstetric fistula requires safe delivery services with competent midwives using partograms and timely referral in the case of obstructed labour to an emergency obstetric centre for swift caesarean section by a competent surgeon. Launched in 2013, 23rd May each year is observed as the International Day to End Obstetric Fistula. This day is marked to raise awareness of obstetric fistula and mobilise support from around the globe to help eradicate this debilitating condition.

### **Avoidance of 3<sup>rd</sup> and 4<sup>th</sup>-degree tear**

Perineal trauma, including 3<sup>rd</sup> and 4<sup>th</sup>-degree tears, tends to follow a fast delivery. This can be avoided with a slow controlled birth. If the mother delivers with a midwife present, the midwife can flex the baby's head, supporting the perineum as the head is slowly crowning and then delivering.

Perineal massage during the second stage of labour and warm compresses may help to make the perineum more supple, which may facilitate the delivery and is practiced in some centres.

However, reducing tears during labour is dependent on the availability of trained midwives and skilled delivery techniques. In rural areas, there is often a lack of trained midwives or a very high patient-to-midwife ratio.

### **Fistula champions**

Fistula champions are women who have suffered from obstetric fistula and return home to their communities as advocates and agents of change to raise awareness on prevention of obstetric fistula and help

identify other fistula patients who can access treatment. They need a small amount of training to equip them with the skills to raise awareness in their community.

### **Ethical considerations in nursing fistula patients**

The nature of obstetric fistula is such that it leaves women incontinent of urine and/or faeces and unable to work or care for themselves, often being cared for by their mother or closest relative. Fistula patients are usually in their childbearing years, 18–45 years, with very little formal education, making them some of the most vulnerable members of society.

However, it is important to remember there may be older women in their 70s and 80s presenting for fistula surgery who have been living with a fistula for 40–50 years. These women can benefit from a successful repair and should not be turned away because of their age.

Obstetric fistulas persist in the world's most disadvantaged communities, where women have limited rights and opportunities.

The professional codes of conduct and ethics for nurses around the world follow similar principles and should be adhered to by all nurses. For example, in Uganda, the code of conduct for nurses emphasises the importance of human rights, including a person's right to dignity and respect, which are integral components of nursing care.

When caring for fistula patients, it is paramount that all nurses adhere to the professional code of conduct. Due to many of the patients' low level of literacy this may mean taking time to explain carefully what the proposed treatment/operation and recovery period entail. As important members of the fistula care team, nurses play a critical role, helping to make treatment decisions, while respecting the decisions their patients make.

All patients need to be cared for and supported during their hospital stay, whether it be daily monitoring of vital signs, wound checks, catheter checks or just generally checking they are OK and not in any pain. Privacy should be maintained when carrying out intimate procedures with patients, using screens around beds and respecting the patients' dignity and right to privacy.

### *Nursing Care for Women with Childbirth Injuries*

The days and weeks after patients have had surgery and are ambulating around the ward with their catheters draining while their repair heals is a good time to spend with them and get to know them on an individual basis. This gives nurses time to truly connect with the patients, know their story and be able to explain what has happened to them. It is also a good time to reinforce, so they understand, that their injuries have not been caused by witchcraft, charms or bad luck.

# Conclusion

The goal for surgical fistula repair is to close the fistula and to ensure that there is no ongoing incontinence, allowing the woman to reintegrate into her community, to conceive again if she wishes and to live a normal life. High-quality, holistic nursing care is paramount to achieving this goal.

This book aims to educate and empower nurses looking after women who have sustained fistula and perineal tears. With better understanding of the devastating experiences these women have endured and by following the guidance offered, hopefully many more affected women can be helped, and their lives significantly improved in the future.

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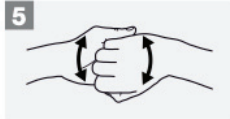

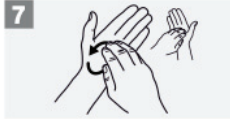
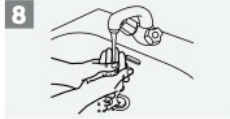


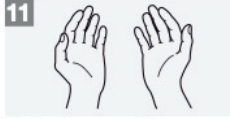
# Appendices

## Appendix A

### HOW TO HANDWASH?

**WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB**

**🕒 Duration of the entire procedure: 40-60 seconds**

<b>0</b>  Wet hands with water;	<b>1</b>  Apply enough soap to cover all hand surfaces;	<b>2</b>  Rub hands palm to palm;
<b>3</b>  Right palm over left dorsum with interlaced fingers and vice versa;	<b>4</b>  Palm to palm with fingers interlaced;	<b>5</b>  Backs of fingers to opposing palms with fingers interlocked;
<b>6</b>  Rotational rubbing of left thumb clasped in right palm and vice versa;	<b>7</b>  Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;	<b>8</b>  Rinse hands with water;
<b>9</b>  Dry hands thoroughly with a single use towel;	<b>10</b>  Use towel to turn off faucet;	<b>11</b>  Your hands are now safe.

#### Hand care

- Take care of your hands by regularly using a protective hand cream or lotion, at least daily.
- Do not routinely wash hands with soap and water immediately before or after using an alcohol-based handrub.
- Do not use hot water to rinse your hands.
- After handrubbing or handwashing, let your hands dry completely before putting on gloves.

#### Please remember

- Do not wear artificial fingernails or extenders when in direct contact with patients.
- Keep natural nails short.

Appendix B

# DDD Observation Chart



Patient Name.....

Operation.....

Surgeon.....

Date								
Day of Operation	0	1	2	3	4	5	6	7
Drinking								
Draining								
Dry								
Temp								
Date								
Day of Op	8	9	10	11	12	13	14	15
Drinking								
Draining								
Dry								
Temp								
Date								
Day of Op	16	17	18	19	20	21	22	23
Drinking								
Drinking								
Dry								
Temp								

## **Appendix C**

# **Pelvic Floor Exercises**

### **(Patient information leaflet)**

Pelvic floor exercises strengthen the muscles around your bladder, vagina and back passage.

Strengthening your pelvic floor muscles can help stop incontinence and treat prolapse.

Both men and women can benefit from doing pelvic floor exercises.

### **Find your pelvic floor muscles**

You can feel your pelvic floor muscles if you try to stop the flow of urine when you go to the toilet.

It is not recommended that you regularly stop your flow of urine midstream, as it can be harmful to the bladder.

### **Pelvic floor exercises**

To strengthen your pelvic floor muscles, sit comfortably and squeeze the muscles 10–15 times in a row.

Do not hold your breath or tighten your stomach, buttock or thigh muscles at the same time.

When you get used to doing pelvic floor exercises, you can try holding each squeeze for a few seconds.

Every week, you can add more squeezes, but be careful not to overdo it and always have a rest between sets of squeezes.

After a few months, you should start to notice the results. You should carry on doing the exercises, even when you notice them starting to work.



Ishbel with Annet, Joan and Joanta, Kamuli fistula nurses



Ian Asimwe with nurse Scovia



Mhairi and Ishbel