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CLINICAL ARTICLE

Analysis of a pilot program to implement physical therapy for women with gynecologic fistula in the Democratic Republic of Congo

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ABSTRACT

Objective: To describe components of a physical therapy pilot program for women with gynecologic fistula, and to report prospective data from the first 2 years of program implementation. **Methods:** A single-cohort observational study with repeated measures was conducted at HEAL Africa Hospital, Goma, Democratic Republic of Congo. Hospital staff received training in pelvic floor physical therapy. Guidelines for exercise, functional training, and reproductive health education were integrated into the existing program. Demographics, clinical findings, and functional outcomes were recorded. Key stakeholders were interviewed to understand the perceived strengths and limitations of the program. **Results:** A total of 205 women were followed up; 161 participated in physical therapy, with an average of 9.45 sessions. Of 161 women examined postoperatively, 102 (63.4%) reported no incontinence; they remained continent at discharge. Of 21 who indicated a change in level of incontinence during postoperative physical therapy, 15 (71.4%) improved. The program was feasible and well received by staff and patients. **Conclusion:** Pelvic floor physical therapy could have significant results in women with gynecologic fistula, may be an important adjunctive treatment in comprehensive fistula care, and warrants further investigation.

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1. Introduction

Gynecologic fistula is a devastating injury associated primarily with childbirth complications, resulting in an abnormal connection between the genital tract and the urinary or intestinal tracts, leading to the uncontrolled passage of urine and/or feces [1]. It is estimated that 3.5 million women and girls worldwide are living with untreated gynecologic fistula and that 50 000–130 000 new cases arise annually [2]. The most common cause of gynecologic fistula is obstructed labor. Delays, inefficiencies, and inequities in maternal health care contribute to a labor experience that may last for several days, during which time pressure of the presenting fetal part (typically the skull) on the soft tissue of the maternal reproductive tract leads to profound tissue damage, creating the fistula [2,3]. Iatrogenic and traumatic causes are less prevalent, being responsible for 17%–24% and 4%–6% of fistula cases, respectively [4–7].

Factors contributing to obstructed labor and gynecologic fistula are among the most extreme in the Democratic Republic of Congo (DRC),

a country with tolerance of sexual violence against women, persistent insecurity, a weak central government, and an insufficient health system [4–10]. The eastern region of the DRC has been affected by conflict for over two decades and lacks the infrastructure to adequately provide basic needs for the population, including access to health care for its poor and displaced population [8–10].

Women with gynecologic fistula live with a high burden of disease. They are vulnerable to myriad social and psychological effects including loss of income, loss of status in family or community, loss of self-esteem, depression, and in some cases divorce, complete social isolation, and forcible expulsion from their villages [2,11]. Comorbid physical burdens can include foot drop, joint contractures, and pain [12].

Surgery is the only cure for all but the smallest and most newly formed fistulas. Many governmental and non-governmental organizations have supported outreach, hospital-based fistula surgeries, and physician training in safe surgical techniques. Despite the success of many fistula surgeries, 16%–32% of women will continue to have incontinence even after successful fistula closure and an estimated 12%–31% will require more than one fistula repair in their lifetime [13–16].

Pelvic floor physical therapy has been demonstrated to be beneficial in treatment of incontinence and pelvic floor dysfunction; however, the

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literature exploring perioperative rehabilitation for women with gynecologic fistula is sparse [17]. One study of women with gynecologic fistula in Benin [18] indicated that pelvic floor physical therapy and health education had a positive impact on postoperative recovery, with lower rates of reported incontinence. Guidelines from WHO [19] and the International Federation of Gynecology and Obstetrics [20] include physical therapy as part of a comprehensive fistula program, yet offer little to support specific protocols or training guidelines for health professionals in the development and implementation of such services.

The aim of the present study was to assess a physical therapy pilot program that was integrated into an existing fistula care program at a referral hospital in Goma, DRC, and to analyze prospective data regarding patient outcomes during the first 2 years of its implementation.

2. Materials and methods

A single-cohort observational study with repeated measures was performed at the HEAL Africa Hospital, Goma, DRC. This hospital is a nonprofit, 160-bed tertiary care facility that serves a population of approximately 15 million as the primary referral center for North Kivu province. It also specializes in community education and public health. One major hospital-based program there provides medicosurgical management of gynecologic fistula, coupled with socioeconomic empowerment initiatives to assist women with fistula in postoperative community reintegration. Specialty-trained surgeons have performed 2000 fistula repairs since 2003, with an average of 300 surgeries annually during years when active conflict in the region did not limit daily hospital operations and surgeries performed during outreach missions [21]. Hospital staff requested education and training in pelvic floor physical therapy to optimize patient outcomes after repair. The resulting project was approved by the institutional review boards of the University of California San Francisco (San Francisco, CA, USA) and HEAL Africa Hospital. Participants provided verbal informed consent.

Physical therapists based in the USA who had regional experience, as well as expertise in community-based rehabilitation and pelvic floor physical therapy, conducted a detailed needs assessment in March 2009 prior to launching a rehabilitation program in April 2009. Training was provided to medical staff at HEAL Africa Hospital between April 1, 2009 and August 15, 2010. An evidence-based training manual was compiled, translated into French, and distributed to two physiotherapists, the chief nurse managing postoperative fistula care, and physicians specializing in obstetrics, gynecology, and urogynecologic surgery. The manual addressed pelvic floor anatomy, physiology, and pathophysiology related to pregnancy and obstetric complications, particularly fistula and incontinence. It also included chapters on patient education, lifestyle modification, exercise prescription, and progression of functional activities, such as bed mobility, and the lifting and carrying of children or firewood. All staff working with patients with fistula attended a series of lectures. Two female physical therapists received further clinical training to perform and document a digital pelvic floor muscle assessment and to instruct patients on proper exercise techniques and functional activities.

Interactive instructional sessions were developed and led jointly by nurses and physical therapists to teach patients about female reproductive anatomy, fistula, and preoperative and postoperative expectations. Patients were taught about continuation of pelvic muscle exercises after discharge, attention to body mechanics to avoid stress to the repaired tissues, access to family planning, and appropriate obstetric care for future pregnancies. Counselors were also present to provide psychological support. **Box 1** provides details about the clinical pathways.

Visiting clinicians from the USA remained on site to provide necessary logistical and clinical support until August 15, 2010. After this time, support was provided remotely via e-mail and during 1-month site visits in 2011, 2012, and 2013.

Upon completion of physical therapy training and in collaboration with a US-based obstetrician/gynecologist and the Congolese fistula

Box 1

The clinical pathway for each patient with gynecologic fistula from hospital admission to discharge.

Admission

- Counselor intake
 - Orientation to services available
 - Psychosocial support
- Preoperative medical examination
 - Characteristics of fistula
 - Symptoms
 - Comorbidities
 - Eligibility for surgery
- Preoperative physical therapy examination and treatment
 - Abdominal and perineal tissue mobility and presence of scar tissue
 - Pain and sensitivity to palpation
 - Pelvic muscle strength and endurance
 - Level of continence
 - Functional mobility (ability to perform bed mobility, transfers, ambulation, squatting, lifting, and carrying loads)
 - Diaphragmatic breathing and pelvic muscle exercise/relaxation training
- Surgical repair
 - Foley catheter placed for 14 days
 - Bed rest for 24–48 hours postsurgery
- Postoperative nursing and physical therapy care—days 1–14
 - Nurses mobilize patient; encourage out-of-bed activity with assistance if needed
 - Physical therapy in small groups or one-to-one; submaximal pelvic floor muscle exercises with the catheter still in place
- Postoperative physical therapy examination and treatment—days 15+
 - Repeat physical therapy assessment
 - Exercise/functional activity progression
- Pelvic floor muscle exercises; goal of 10 repetitions, 10-second hold, 10-second relaxation

Discharge

- Coordinated breathing, abdominal, and pelvic muscle exercise progression while supine, on all fours, or standing; functional tasks
- Bowel and bladder training, as needed: timed voiding, double or triple voiding, urge response, control, and suppression; lifestyle modifications (adequate water intake, avoidance of caffeine)
- Interactive group session with nurse, physiotherapist, and counselor
 - Female reproductive anatomy; definition and causes of fistula; dispelling myths surrounding reproduction, childbirth, and fistula; pregnancy model for demonstration
 - Review of pelvic floor physical therapy exercises
 - Family planning education

team, a patient documentation form and corresponding database were created. Demographic and clinical information was collected, including information on medicosurgical treatment and physical therapy participation. Physical therapy outcome measures included manual pelvic floor muscle assessment as described by Laycock and Jerwood [22], which has demonstrated good validity for measuring strength ($r = 0.786$; $P < 0.001$) and endurance ($r = 0.549$; $P < 0.001$) when compared with perineometric evaluation, and high interexaminer and

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