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Case Report

Gynecological Fistula: Epidemiology and Therapeutic Options in Mozambique -

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ABSTRACT

Introduction: Vescicovaginal fistulae, most of all as consequences of prolonged neglected obstructed labor, occur mainly in low income countries. Fistulas have a devastating impact on affected women and their families from physical, social and economic point of view.

Methods: We collected data of patients admitted to the Urology Department of Maputo Central Hospital from 2004 to 2013. We conducted a descriptive analysis of the collected data as yet available.

Results: We reported more than 250 fistulae, most of all vescicovaginal (72%) followed by urethro-vaginal (8%) and vescico-uterine (6.5%). Surgical approach was mainly the trans-vaginal repair, especially for the vescicovaginal.

Conclusion: Although prevention can dramatically reduce the prevalence of gynecological fistulae, in low-income countries, they represent an important public health issue. Surgical treatments and non-operative managements are possible and both with a high rate of success. We suggest surgeons to know as many techniques as possible in order to assure a tailored treatment for everyone.

Keywords: Obstetric fistula; Vescicovaginal fistula; Rectovaginal fistula; Mozambique; Low income countries; Surgery; Delivery

INTRODUCTION

Genital tract fistulae, after several attempts of classification, are actually divided into four main types, depending on the distance of the distal edge of the fistula from the external urinary meatus [1-10]. These four types are further sub-classified by the size of the fistula, associated scarring, vaginal length or special considerations, as follow:

Type 1: Distal edge of fistula > 3.5 cm from external urinary meatus

Type 2: Distal edge of fistula 2.5 – 3.5 cm from external urinary meatus

Type 3: Distal edge of fistula 1.5 – < 2.5 cm from external urinary meatus

Type 4: Distal edge of fistula < 1.5 cm from external urinary meatus

(a) Size < 1.5 cm, in the largest diameter

(b) Size 1.5 - 3 cm, in the largest diameter

(c) Size > 3 cm, in the largest diameter

i. None or only mild fibrosis and/or vaginal length > 6 cm, normal capacity

ii. Moderate or severe fibrosis and/or reduced vaginal length and/or capacity

iii. Special consideration e.g. post radiation, ureteric involvement, circumferential fistula, previous repair. (Same characteristics are described for ano-rectal fistula).

The really extent of obstetric fistulae in developing countries is unknown due to difficult access to the cure, but the incidence is reported as 124 per 100.000 deliveries, contrary to developed countries where is not more described [1].

Most of the patients are affected by obstetric fistula which is defined as a hole that forms between the bladder and vagina (Vesical Vaginal Fistula- VVF) or between the rectum and vagina (Recto Vaginal Fistula-RVF) during prolonged labor and obstructed labor. The constant pressure of the baby's head against the soft tissue around the vagina and the bladder and/or rectum cause an ischemic necrosis of tissue. In some cases, regarding the youngest girls, the etiology is related to gynecologic trauma as sexual abuse. A hole is then left, and urine and/or feces leak from the vagina [4]. Recto vaginal

fistula may also develop 3rd or 4th degree perineal tears, disrupted repair of perineal tears, or episiotomy sites due to technical factors or infection [5]. Finally, iatrogenic fistulas can occur in women who faced emergency obstetric surgery, often related to ruptured uterus. Majority of women with iatrogenic fistulas had a history of previous cesarean section, suggesting that these women are at heightened risk for iatrogenic fistula during a subsequent surgery [6]. Fistula have heavy consequences both in physical and social terms. In fact, urine, feces and blood secretions cause severe burnt and wounds with consequent infections on the legs from the continuous dripping [7].

In Mozambique, the few data available suggest that the areas with high fistula reported rates are the provinces of Niassa, Tete, Zambezia, Nampula e Inhambane [3]. The high prevalence is due to the low coverage of assistance during childbirth, but also a higher incidence of cultural factors such as premature marriage [2].

We reported the 10 years' experience of a fistula centre of Maputo describing type and management of fistula we have treated.

MATERIALS AND METHODS

Maputo Central Hospital (HCM) is a public, university and the national referral hospital located in Maputo the capital city of Mozambique with population density estimates to about 3.5 million inhabitants. Maputo Central Hospital offers more than 20 medical and surgical specialties. The institution also offers out and in-patients consultations and has 1500 bed capacity for the hospitalization of patients.

Medical residents collected and reviewed all outpatient records of patients admitted to the Urology Department and admitted for surgery during the 2004-2013 period. The extracted data provided a database with information related to fistula type and surgery performed.

We conducted a descriptive analysis of the collected data as yet available.

RESULTS

In table 1 are summarized the main results. In ten years we have managed more than 250 fistulae most of all VVF (72%) followed by urethro-vaginal (8%) and vescico-uterine (6.5%).

In 90% of cases (225 patients) the aetiology was due to labor; 10 cases were post traumatic injuries and 15 cases post infective diseases.

Table: Fistulas.

Type	N (%)	Age (mean)	Range Age	Surgery			
				Aethiology			
				Cause	N (%)	Type	N (%)
Vescicovaginal	180 (72)	26.7	14 - 67	Obstetrical Injury	175 (97.2)	Transvaginal repair	162(90)
				Trauma, including previous surgeries	2 (1.1)	Abdominal access	18 (10)
				Infection/cryptoglandular abscess	3 (1.7)	Mainz Pouch II	0
Urethrovaginal	20 (8)	31	17 - 56	Obstetrical Injury	15 (75)	Transvaginal repair	8(42.9)
				Trauma, including previous surgeries	0	Abdominal access	10(47.6)
				Infection/cryptoglandular abscess	5 (25)	Mainz Pouch II	2(9.5)
Vescicouterine	50 (20)	34.6	17 - 49	Obstetrical Injury	35 (70)	Transvaginal repair	30 (60)
				Trauma, including previous surgeries	8 (16)	Abdominal access	15 (30)
				Infection/cryptoglandular abscess	7 (14)	Non Operative management	5 (10)
Total	250 (100%)	27.7	May-67	Obstetrical Injury	225 (90)	Transvaginal repair	200 (80)
				Trauma, including previous surgeries	10 (4)	Abdominal access	43(17.2)
				Infection/cryptoglandular abscess	15 (6)	Others	7 (2.8)

Surgical approach was mainly the trans-vaginal repair, especially for the VVF (performed in more than 90% of cases) and the abdominal access. In few cases we have performed the Mainz Pouch II procedure.

Postsurgical fistula were diagnosed in 20% of cases (50 cases) during Hospital stay. All this patients were affected by vesico-uterine fistula and the diagnosis were performed before the discharge and in patients treated with cesarian section (13 cases) or prolonged labor (37 cases).

Others patients were evaluated and recognised by consultation.

Women referred passage of flatus or stool through the vagina, feculent odor, or recurrent vaginal mucosal inflammation.

The onset of symptoms was difficult to evaluated, 75% of patients were multiparous and all of them referred at least one delivered at home or with a traditional birth attendant.

DISCUSSION

In our study, as in previous literature, the great majority were VVF. VVF repair depends on several factors, such as distance from ureteric orifice, patient's condition, accessibility from vagina and the type of fistula [11]. Most obstetric causes of VVF tend to be located near the bladder base, trigon, and urethra, since it results from impacted head and/or instrumental delivery. In case of VVF, vaginal repair is, in general, the preferred technique. In fact, it has demonstrated significantly shorter operative times, decreased blood loss, and shorter duration of hospitalization [12]. Vaginal approach is not always possible; limiting condition are: a small introitus, high or inaccessible fistulas, complex fistulas, a recurrent fistula after a failed prior repair attempt, fistulas with significant associated scarring, concomitant involvement of the uterus or bowel, or when the relative position of the ureters is seen as problematic or requires the need for ureteral re-implantation[13]. The two most commonly used repair techniques are the Latzko technique and the layered closure, performed with or without a fat pad or myocutaneous flap. The Latzko procedure has even been successfully utilized in patients with recurrent fistulas already treated in the same way [14].

In the layered closure, the excision of the fistula is performed after separating the bladder from the vaginal mucosa and the underlying fascia for approximately. Is then excised the fistula and the bladder closed with detached points. The main difference with the Latzko procedure consists in the excision of the vesical mucosa during the layered closure. A catheter is then kept after surgery. Again, Martius flap is used for complex fistulas, including recurrent or large fistulas. The procedure involves the use of fat pad along the length of the labium majus which is tunneled subcutaneously into the vagina to act as an inter-positional vascular flap [15]. This flap is classically developed by making a vertical incision along the external surface of the labia majora. Finally, two abdominal approaches can be used: Pfannestiel or median laparotomy. The fistula must be found through a transvesical or extravescical approach. In the first one, like O'Connor and Sokol described, [16,17] a cystotomy of 4-5 cm is performed along the sagittal plane in the extraperitoneal portion of the bladder. The bladder incision is then extended down to the level of the fistulous tract. To identify the tract course of the fistula a smaller catheter can be used. During extravescical approach, first described by Von Dittel in 1803, [18,19] the fistulous tract is dissected in the vesicovaginal space. After surgical repair of fistula bladder should be drained, however, optimal duration of drainage is not clear. Longer duration of bladder catheterization increases the risk of urinary tract infections and other associated morbidities [20].

Urinary incontinence can occur after fistula repair, it depends on the function of the detrusor muscle due to prolonged VVF exposure. Dolan et al. report 16.1% of patients of urinary incontinence, [21] while Zambon et al. had no cases with the vaginal route but had 1 case (16.6%) with the abdominal route [22]. Amenorrhea is commonly reported in women presenting for Obstetric Fistulas repair at rates of 22-44% [23]. Possible causes include Sheehan's syndrome [24] or Asherman's syndrome, but it is often unexplained. The results of the surgical treatment for uro-vaginal fistula are classified according to: repaired; persistent incontinence; failed; attempt to close the fistula was not performed/urinary conduit or other surgery was performed/other; and maternal death.

Referred to RVF Gottgens et al in 2014 concluded that the best



surgical intervention could not be determined [25]. Obstetric RVFs have a lower risk of repair failure than those with non-obstetric etiologies, Tsia-Shu Lo reports, including conservative and surgical managements, a success rate of 45-70% after primary repair [26].

Persistent, recurrent or worsened fistulae are a consequence of poor wound healing or limited blood supply resulting from malnutrition, infection, early defecation and mobilized flap.

Conservative treatment involves urinary catheterisation for four to six weeks. Conservative management can be safe in women with a fistula present for three weeks or less and no larger than three cm in diameter. The catheter must be changed once weekly. Fistula closure can be assured with a dye test. If fistula closure is not achieved after four to six week of conservative treatment, early surgical repair should be done [27].

CONCLUSION

Obstetric fistulae are a real problem in developing countries and often the incidence is unknown. Surgical treatments and non-operative managements, in selected cases, are possible and both with a high rate of success. The real problem in low resources country is to detect the pathology and to let women have the cure. Prevention is surely the best strategy to defeat the problem, not only identifying the patients who can benefit from a medicalization of the labor, but also with political strategies to prevent premature marriage and violence against children. We suggest surgeons to know as many techniques as possible in order to assure a tailored treatment for everyone.

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