Asian Pacific Journal of Reproduction

Journal homepage: www.apjr.net

Document heading doi: 10.1016/S2305-0500(13)60173-6

Prognostic value of repeated surgery on obstetric vesico-vaginal fistula outcome: A Cameroonian experience

Pierre Marie Tebeu[1,2*], Gisele Kengne Fosso[2], Valentin Vadandi[3], Julius Sama Dohbit[1], Joseph Nelson Fomulu[1], Charles Henry Rochat[4]

[1]*Department of Obstetrics and Genecology, University Hospital Centre, Yaounde Cameroon*

[2]*Ligue d'Initiative et de Recherche Active pour la Santé et l'Education de la Femme (LIRASEF), Yaoundé, Cameroon*

[3]*Obstetric Fistula Project "Papillon", Regional Hospital Abeche, Republic of Chad*

[4]*Geneva Foundation for Medical Education and Research (GFMER), Geneva, Switzerland*

ARTICLE INFO

Article history:
Received 28 September
Received in revised form 29 September 2013
Accepted 29 September 2013
Available online 20 December 2013

Keywords:
Obstetric fistula
Recurrence
Outcome

ABSTRACT

Objective: To analyze the outcome of repeat repair of vesico-vaginal fistula following a failure. **Methods:** This was a cross-sectional analytic study in two different obstetric fistula surgery units at the Regional Hospital of Maroua-Cameroon and the University Teaching Hospital of Yaoundé-Cameroon. The study period covered from January 2005 to December 2007 for the regional Hospital and from January 2008 to December 2011 for the University Teaching Hospital. During these periods, the first author was medical consultant in these institutions. Among the overall 81 operations analyzed, we had 31 repeat operations and 50 operations at first attempt. The *chi*-square test was used to compare the distribution of the various variables in the two study populations. **Results:** Among the overall 81 operations analyzed, we had 31 repeat operations (37%) and 50 operations (63%) at first attempt. The success rates of closure of the fistula deteriorate with the number of attempts and vary from 88.2% at the first attempt, 76.9% at the second attempt, to 64.7% as from the third attempt. The result in terms of closing with continence also varies with the order of attempt with respective rates of 72.5%, 69.2% and 41.1% at the first, second and third attempts. **Conclusion:** The result in terms of closing with continence of obstetric fistula surgery decreases with the number of surgical attempts.

1. Introduction

Some studies present the results of obstetric vesico-vaginal fistula (VVF) repair including repeat operations for the same patient [1]. Other studies present their results only as successful closure without taking into consideration the continence status [2]. WHO proposes an estimated successful closure rate for first repair at 85% in each facility with the continence achievement among the closed cases at 90 % [3]. However, there is no agreement on the definition and how to present the obstetric fistula result as opinions vary widely about the prognostic parameters for success or failure[4]. In a recent study, we reported the results of obstetric fistula managed at the Regional Hospital in the Far North of Cameroon regardless of the recurrence status of the fistula[5]. Little is known about the outcome of obstetric fistula surgery in subsequent operations.

The objective of this study was to analyze the effect of the recurrence on the outcome of vesico-vaginal obstetric fistula repair.

2. Materials and methods

This was a cross-sectional analytic study in two different obstetric fistula surgery units at the Regional Hospital of Maroua-Cameroon and the University Teaching Hospital of Yaoundé Cameroon. The study took place at the time when the first author was consultant in these institutions; from January 2005 to August 2007 in the Regional Hospital, and from January 2008 to August 2011 in the University Teaching

*Corresponding author: Tebeu Pierre Marie, MD, MPH, Department of Obstetrics and genecology, University Hospital Centre, Yaoundé Cameroon.

Tel: +23777675533
E-mail: pmtebeu@yahoo.fr

Hospital.

Women consulted in the Units for leakage of urine or stools through the vagina. The site and size of fistulas were confirmed by speculum examination. Transurethral bladder catheterization was performed, followed by the instillation of 1% methylen blue in the bladder in order to trace the leakage in small cases.

The surgical technique included an infiltration with epinephrine in saline solution, an incision, a vesico-vaginal dissection and a suture without tension in two layers with a Monocryl or Biosyn, 2.0 and 3.0.

The use of the fat tissue from the "labia majora ", called Martius graft was done for some patients who presented cervico-urethral involvement, fibrosis or a bigger size of the fistula.

Data were collected on the history and the number of previous operations, anatomic characteristics of the fistula (localization, size, softening of the tissue, presence of adhesions); the surgical procedure (surgical approach, use of tissue exposition), and the treatment outcome (failure, close but not continent, close and continent).

The data were collected in the standard file prepared for obstetric fistula patients. The information from the file was entered in EPI-Info 5.3.1 software by the assistant nurse or the medical doctor with a good computer skill. Data was stored in the obstetric fistula database of the Department of Obstetrics and Gynecology. The data of this study was retrieved from the obstetric fistula database of the Department of Obstetrics and Gynecology in the Regional Hospital of Maroua-Cameroon and of the University Teaching Hospital of Yaoundé Cameroon during the study period.

Data analysis was performed using EPI Info 3.5.1, CDC; Atlanta, USA. Characteristics from patients who were at their first operation were compared with those of fistulas at repeat operations. The *chi*-square test was used to compare the distribution of the various variables in the two study populations. The success rate was calculated as a proportion of cure among treated patients according to the order of surgery.

3. Results

We operated a total of 125 genital fistulas, among which 26 were pure recto-vaginal fistulas (20. 8%), 95 pure urinary fistulas (76.0%) and 4 mixed fistulas (3.2%). Finally, we operated 99 fistulas that involved the urinary tracts. Among these 99 fistulas, there were, 7 vesico-uterine fistulas (7.1%), 4 ureteral fistulas (4.0%) and 88 fistulas with bladder involvement (88.8%). Among the 88 vesico-vaginal fistulas, 4 underwent urinary diversion. At the end, out of the overall 88 vesico-vaginal fistulas, vaginal cure was achieved in 81 women (92%). Among the 81 women with vesico-vaginal cure, 3 had mixed fistulas involving the digestive tract (4.9%) and 77 had pure bladder involvement (95.1%).

Among the overall 81 operations analyzed, there were 31 repeated operations at second to eighth attempts (37%) and 50 first operations (63%). Compared to the fistulas at their first surgery, characteristics were not significantly different, however, the fistulas at repeated surgery had more rigid edges (83.3% *vs*. 76.5%), were localized on the urethra (30.0% *vs*. 23.5%), and had a size bigger than 5 cm (13.3% *vs*. 9.8%) (Table 1). The route of surgical approach is comparable in the two study populations with 90.1% for the vaginal route, 4.9% for the abdominal route and 4.9% for the mixed route. The Martius graft was used more at the first attempt (39.2% *vs*. 26.7%) (Table 2).

The results of the closure rate of the fistula deteriorate with the number of attempts and vary from 88.2% (45/51) at the first attempt, 76.9% (10/13) at the second attempt, to 64.7% (11/17) from the third attempt. The result in terms of closing with continence varies also with the order of attempt with respectively 72.5% (37/51), 69.2% (9/13) and 41.1% (7/17) at the first, second and third attempts. The failure rate for fistula closure varies from 11.8% at first surgical attempt (6/51), 23.1% at the second surgical attempt (3/13), and 35.3% at the third surgical attempt (6/17). (Table 3).

4. Discussion

This study shows that fistulas at repeated surgery often have rigid edges, are localized on the urethra, and have a bigger size. Previous studies showed that failure and incontinence are frequent in cases of large size, fibrosis, bladder neck and urethra involvement [5-6]. Some studies found that a size more than 4 cm, vaginal adhesion and rigid margins were associated with poor surgical outcome and therefore lead to the repeated surgery[1,7].

We found that the result in terms of closing with continence varies also with the order of the attempt with respectively 72.5%, 69.2% and 41.1% at the first, second and third attempts. The trend observed among our cases are similar to those from Ghana and Eritrea[8,9]. In Ghana, the success rate was 85% at first surgical attempt, 50% at second attempt and 33% at third attempt [9]. In Eritrea the successful repair in women with primary vésico-vaginal fistulas (VVF)

Table 1
Characteristics of fistula.

Characteristics		First operation (*n*=51)	2nd to 8th attemp t(*n*=30)	Total (*n*=81)	*P*
Fistula palpable	No	3(5.9)	2(6.7)	5(6.2)	0.6157
	Yes	48(94.1)	28(93.3)	76(93.8)	
Fistula edge	Rigid	39(76.5)	25(83.3)	64(79.0)	0.4639
	Soft	12(23.5)	5(16.7)	17(21.0)	
Localization	Cervical	18(35.3)	9(30.0)	27(33.3)	0.6419
	Bladder	21(41.2)	12(40.0)	33(40.8)	
	Ureteral	12(23.5)	9(30.0)	21(25.9)	
Fistula size (cm)	[0.5-2.0]	25(49.0)	17(56.7)	42(51.9)	0.5881
	[2.0-5.0]	21(41.2)	9(30.0)	30(37.0)	
	[5.0-8.0]	5(9.8)	4(13.3)	9(11.1)	
Vaginal adhesions (fibrosis)	No	20(39.2)	7(23.3)	27(33.3)	0.1431
	Yes	31(60.8)	23(76.7)	54(66.7)	

Table 2
Surgical approach

Characteristics		First operation (n=51)	2nd to 8th attempt (n=30)	Total (n=81)	P
Surgical approach	Abdominal	2(3.9)	2(6.7)	4(4.9)	0.2598
	Mixed	4(7.8)	0(0.0)	4(4.9)	
	Vaginal	45(88.2)	28(93.3)	73(90.1)	
Martius procedure	Yes	20(39.2)	8(26.7)	28(34.6)	0.2514
	No	31(60.8)	22(73.3)	53(65.4)	
Surgical outcome 1	Global closure	45(88.2)	21(70.0)	66(81.5)	0.0413
	No closure	6(11.8)	9(30.0)	15(18.5)	
Surgical outcome 2	Close and continent	37(72.5)	16(53.3)	53(65.4)	0.1071
	Close but not continent	8(15.7)	5(16.7)	13(16.0)	
	Complete failure	6(11.8)	9(30.0)	15(18.5)	

Table 3
Surgical outcome according to the order of surgical attempt.

Order of operation	Total (81)	Close (66)	Close and continent (53)	Close but not continent (13)	Failure (15)
First attempt	51	45(88.2)	37(72.5)	8(15.6)	6(11.8)
Second attempt	13	10(76.9)	9(69.2)	1(7.6)	3(23.1)
3rd – 8th attempt	17	11(64.7)	7(41.1)	4(23.5)	6(35.3)

was 63%, and that in women with recurrent vesico-vaginal fistulas was 61% [8]. Our results constitute an additional proof that the first operation is the determinant one.

This study also provides a support for prognostic classification. This classification should take into consideration several factors that were seen as being associated with recurrence in the present study, including, the softening of the edges, the localization and the size of the fistula as previously revealed by others[5-7].

Many classifications were suggested by several authors and some of them are included in the manual recently published by FIGO and partners[10]. The FIGO's manual on obstetric fistula surgery proposed two classifications, that from Waaldijk, that from Goh and Browning [11-13]. All these classifications rarely consider all the three prognostic factors. However none of these three classifications made the combination of the three prognostic variables in order to be able to define the classes clearly for the fistulas one is dealing with.

The results of obstetric fistula surgery decrease with the number of surgical attempts. Factors that were seen as associated with recurrence in the present study included the fibrosis of the fistula edges, the localization and the size of the fistula. These factors which influence the result of obstetric fistula surgery should be taken into consideration when defining the expected difficulties for each patient.

Conflict of interest

We declare that there is no conflict of interest.

Acknowledgments

The fistula programs at the Regional Hospital of Maroua and that of the University Centre Hospital-Yaoundé Cameroon.

Reference

[1] Falandry L. Traitement des fistules uro-génitales postpartum en Afrique, 261 cas observés en dix ans. *Prog Urol* 1992;**2**:861-873.
[2] Ramsey K, Iliyasu Z, Idoko L. Fistula fortnight: innovative partnership brings mass treatment and public awareness towards ending obstetric fistula. *Int J Gynaecol Obstet* 2007;**99** (Suppl 1):S130-136.
[3] de Bernis L. Obstetric fistula: guiding principles for clinical management and programme development, a new WHO guideline. *Int J Gynaecol Obstet* 2007;**99** (Suppl 1):S117-121.
[4] Arrowsmith SD, Barone MA, Ruminjo J. Outcomes in obstetric fistula care: a literature review. *Curr Opin Obstet Gynecol* 2013;**25**(5):399-403.
[5] Tebeu PM, Fomulu JN, Mbassi AA, Tcheliebou JM, Doh AS, Rochat CH. Quality care in vesico-vaginal obstetric fistula: case series report from the regional hospital of Maroua-Cameroon. *Pan Afr Med J* 2010;**5**:6.
[6] Roenneburg ML, Genadry R, Wheeless CR, Jr. Repair of obstetric vesicovaginal fistulas in Africa. *Am J Obstet Gynecol* 2006;**195**(6):1748-1752.
[7] Genadry RR, Creanga AA, Roenneburg ML, Wheeless CR. Complex obstetric fistulas. *Int J Gynaecol Obstet* 2007;**99** (Suppl 1):S51-S56.
[8] Husain A, Johnson K, Glowacki CA, Osias J, Wheeless CR Jr., Asrat K, et al. Surgical management of complex obstetric fistula in Eritrea. *J Womens Health* (Larchmt) 2005;**14**(9):839-844.
[9] Elkins TE. Surgery for the obstetric vesicovaginal fistula: a review of 100 operations in 82 patients. *Am J Obstet Gynecol* 1994;**170**(4):1108-1118.
[10]FIGO, ISOFS, UNFPA, EngenderHealth, RCOG. Global competency based fistula training manua [Online]. Avaliable from: http://www.yumpu.com/tl/document/view/7954354/global-competency-based-fistula-surgery-training-manual[Accessed on 28th 2011].
[11]Waaldijk K. Surgical classification of obstetric fistulas. *Int J Gynaecol Obstet* 1995;**49**(2):161-163.
[12]Goh J, Krause H. Modified vaginal surgical technique for the management of the lateral vesico-vaginal fistulae. *Int Urogynecol J Pelvic Floor Dysfunct* 2008;**19**(5):677-680
[13]Browning A. Obstetric fistula: current practicalities and future concerns. *Int Urogynecol J Pelvic Floor Dysfunct* 2008;**19**(3):333-334.