SRYAHWA PUBLICATIONS

Archives of Urology
ISSN: 2638-5228 | Volume 5, Issue 1, 2023
https://doi.org/10.22259/2638-5228.0501002

RESEARCH ARTICLE

Iatrogenic Urogenital Fistulas: Causes and Management in a West African City

SIKPA Komi Hola[1], SEWA Edoe Viyome[2], AMOUZOU Efoe-Ga[3], AWANYOH Komlan Bruno-Yannick[4], BOTCHO Gnimdou[5], AGBEDEY Messan Semefa[6], NONOA Bawa[7], PADJA Essodina Rodrigue[8], LELOUA Essomindedou Adolphe[9], KPATCHA Matchonna Tchilabalo[10], TENGUE Kodjo[11]

[1,5,7,10]*University of Kara, Togo.*
[2,3,4,6,8,9,.11]*University of Lomé, Togo.*

Received: 24 May 2023 Accepted: 21 June 2023 Published: 05 July 2023
Corresponding Author: SIKPA Komi Hola, University of Kara, Togo.

Abstract

Background: The management of obstetric fistulas is part of the daily life of the urologist in sub-Saharan Africa. More and more urogenital fistulas caused by health personnel are encountered. What about her iatrogenic urogenital fistulas in Lomé? What are the causes?

Methods: This was a retrospective study over 10 years, concerning cases of iatrogenic urogenital fistula treated at the teaching hospital Sylvanus Olympio in Lomé. The inclusion criteria were: all well-completed records of IUGF operated in urology. The variables studied were: age, the circumstances of occurrence of the IUGF, the type of operator, the delay in diagnosis, data on the fistula, the treatment of the iatrogenic fistula, the postoperative course, and the correlation between these parameters.

Results: From 2011 to 2020, i.e. 10 years, 43 cases of IUGF had been diagnosed and treated, i.e. a hospital frequency of 4.3 cases/year. The average age of the patients was 39.8 +/- 11.4 years with extremes of 25 to 85 years. Most of the patients were married with a rate of 95.4%; many patients had at most 2 living children, i.e., 46.5%. Among these surgical history, caesarean section was the most represented in 58.1% of cases. VVF was the most represented type of fistula, 81.3%. Most of the fistulas (in 27 patients or 62.7%) had appeared following surgical interventions performed by surgeons and obstetrician-gynecologists in training; there was a statistically significant link (p=0.002). The average time between the intervention that caused the fistula, and the repair surgery was 114.98 +/- 28.53 days. The approach was suprapubic in 74.4% of cases. The IUGF identified in our series had been treated either by fistulorraphy via the upper approach or via the vaginal approach. Caesarean section was associated with 21 cases of VVF. There was a statistically significant link (p= 0.0024)

Conclusion: The main point made during this work was that caesarean section and hysterectomy were the main causes of IUGF. VVF were more frequent, and surgeons in training were often incriminated.

Keywords: Iatrogenic Urogenital Fistula, Vesicovaginal Fistula, Etiologies, Reconstructive Surgery, West African City.

Citation: SIKPA Komi Hola, SEWA Edoe Viyome, AMOUZOU Efoe-Ga, *et al.* Iatrogenic Urogenital Fistulas: Causes and Management in a West African City. Archives of Urology. 2023;5(1): 07-13.

1. Introduction

Urogenital fistulas (UGF) constitute a solution of continuity causing abnormal communication between an element of the urinary system (bladder, ureter, and urethra) and an element of the genital system (uterus and vagina).

Iatrogenic urogenital fistula (IUGF) is a fistula arising between the bladder or ureter, or urethra and uterus or vagina secondary to surgery on the female internal genitalia, or because of instrumental manipulations [1,2]. UGF is a real humiliating health concern insofar as the carrier woman is labeled by the smell of urine; an excluding health concern, since the surrogate woman is rejected by her husband, her family, and her community; a suicidal health concern because it is difficult to live like this in a normal psychological state. Today, many of these women continue to live with fistula around the world. Very few have access to care and, among the latter, several face dyspareunia, non-pregnancy amenorrhea and infertility in developing countries [3]. Rare in developed countries, it is still relevant in developing countries. UGF has been the subject of several studies in Togo as in the sub-region [4], and attention is too often focused on vesicovaginal fistula (VVF), its obstetric causes, its treatment, and its socio-economic consequences [3].

But there have been very few studies that have focused on iatrogenic fistulas. Apart from obstetrical causes, medical personnel are among the providers of UGF during the management of certain gyneco-obstetrical conditions.

Thus, the aim of our study was to describe the occurrence and management of IUGF at the teaching hospital Sylvanus Olympio, in Lomé, Togo.

2. Methods

This was a retrospective analytical study over 10 years, from January 1, 2011 to December 31, 2020. It was framed by the urology department of the teaching hospital Sylvanus Olympio in Lomé.

The study population consisted of all patients operated on for IUGF in the urology department during the study period. The inclusion criteria were: all well-completed records of IUGF operated in urology; the non-inclusion criteria were: all incomplete files (no age, no history of the disease, no assessment, absence of preoperative information on the fistula).

Using the department's register, we were able to identify the cases and retrieve the files that we had used to fill out the pre-established investigation sheets. The variables studied were: age, the circumstances of occurrence of the IUGF, the type of operator, the approach of the intervention having caused the fistula, the delay in diagnosis and management of the fistula, data on the fistula, the treatment of the iatrogenic fistula, the postoperative course, and the correlation between these different parameters.

The data collected was statistically processed using IBM SPSS Statistics software. The Chi-square test and Fisher's Exact Test were used for the analysis of proportions. Values were significant if $p<0.05$

3. Results

3.1 Socio-Demographic Characteristics

3.1.1 Frequency

From 2011 to 2020, i.e. 10 years, 43 cases of IUGF had been diagnosed and treated, i.e. a hospital frequency of 4.3 cases/year.

3.1.2 Age

The average age of the patients was 39.8 +/- 11.4 years with extremes of 25 to 85 years. The age group of 20 to 40 years was the most represented with a rate of 60.5% as shown in Figure 1

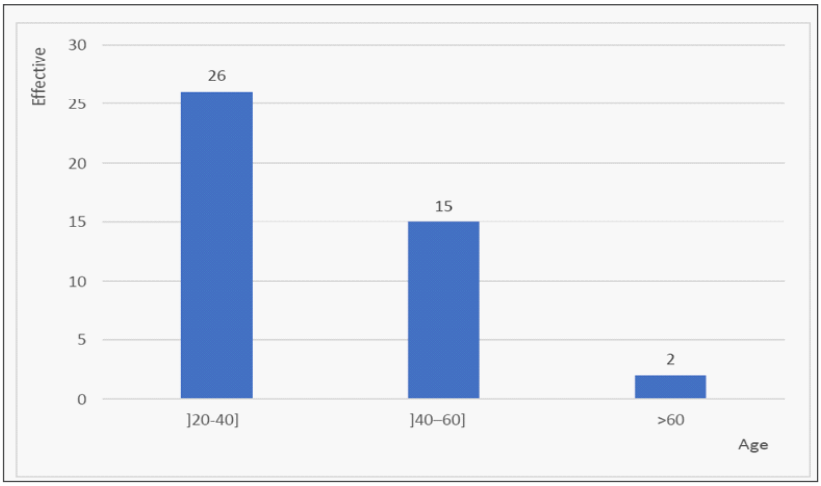

Figure 1. *Distribution of patients according to age group*

3.2 Marital Status

Most of the patients were married with a rate of 95.4%; single patients were found and divorced in each 2.3% of cases.

3.3 Place of Residence

Patients residing in Lomé were the most represented, in 83.7% of cases; those residing outside Lomé accounted for 16.3% of cases.

4. Medical History

4.1 Gyneco-Obstetric History

Many patients had at most 2 living children, i.e., 46.5% as shown in Figure 2

4.2 Surgical History

Among these surgical history, caesarean section was the most represented in 58.1% of cases; followed by hysterectomy and myomectomy in 32.6% and 9.3% of cases respectively

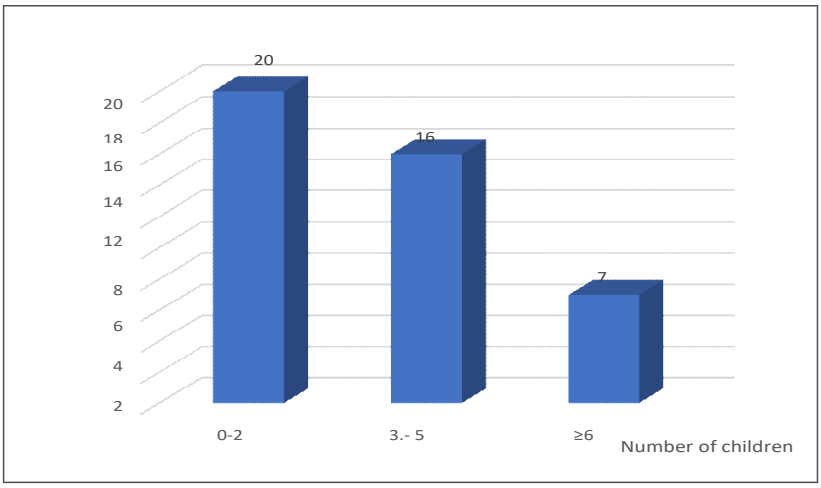

Figure 2. *Distribution of patients according to the number of children had*

Thus, among the 25 patients with a history of caesarean section, 22 had benefited from the caesarean section only once, i.e., 88%; and 03 patients, i.e., 12% had benefited from caesarean section 03 times.

5. Data on the Fistula

5.1 Type of Fistula

VVF was the most represented type of fistula, 81.3% (35 patients). Ureterovaginal fistula (UVF) was found in 16.2% of cases; and in 2.3% of cases, we found the association VVF + UVF.

5.2 Type of Surgery that Caused the Fistula

Caesarean section was a provider of IUGF in 58.1% of cases (Figure 3).

5.3 Qualification of the operator

Most of the fistulas (in 27 patients or 62.7%) had appeared following surgical interventions performed by surgeons and obstetrician-gynecologists in training (figure 4). There was a statistically significant link (p=0.002), i.e., the surgeons and obstetrician-gynecologists in training were more responsible for the occurrence of iatrogenic urogenital fistulas.

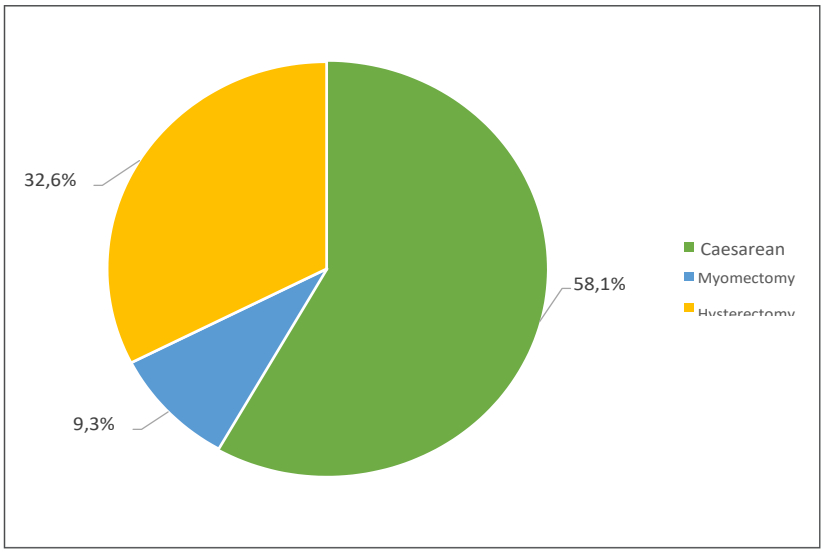

Figure 3. *Distribution of patients according to type of surgical intervention that caused the fistula*

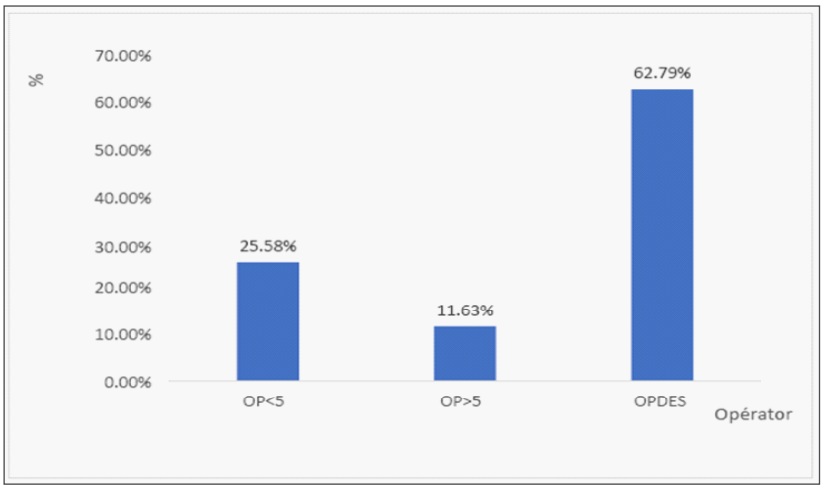

Figure 4. *Distribution of patients according to operator qualification*

OP < 5: Surgeon, gynecologist with less than 5 years of experience.

OP > 5: Surgeon, gynecologist with more than 5 years of experience.

OP DES: Surgeon, gynecologist in training

- Average time between the intervention that caused the fistula and the repair surgery

The average time between the intervention that caused the fistula, and the repair surgery was 114.98 +/- 28.53 days. This delay was greater than 120 days in 60.4% of cases (Figure 5).

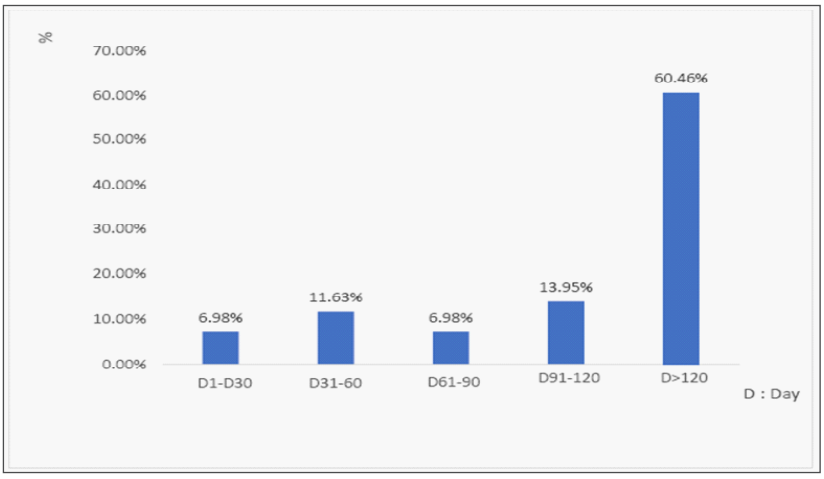

Figure 5. *Distribution of patients according to time to diagnosis*

6. Treatment of Iatrogenic Fistula

6.1 Surgical Approach

The approach was suprapubic in 74.4% of cases (32 patients) and the vaginal approach in 25.5% of cases (11 patients).

6.2 Fistula Repair

The IUGF identified in our series had been treated either by fistulorraphy via the upper approach or via the vaginal approach; and ureterovesical reimplantation without an anti-reflux system had been performed for the management of UVF. Thirty-five (35) patients or 81.4% had received a repair of VVF; ureterovesical reimplantation (UVR) was performed in 7 patients, i.e., 16.2%.

6.3 Evolution After Repair of the Fistula

There had been a failure of the IUGF repair in 10 patients, a failure rate of 23.2%. It should be noted that the repairs of recurrent fistula had been carried out by surgeons in training. All these failures had been successfully taken up by more experienced surgeons.

7. Study of Correlations

- Relationship between the occurrence of IUGF and the type of causal surgery

Caesarean section was associated with 21 cases of VVF as shown in Table I. There was a statistically significant link (p= 0.0024),

Table 1. *Distribution of patients according to the type of causal surgical intervention and the type ofIUGF*

	VVF	UVF	VVF+UVF	Total
Caesarean	21	3	1	25
Hysterectomy	14	0	0	14
Myomectomy	0	4	0	4
Total	35	7	1	43

Caesarean section was involved in 60% of VVF and 42.8% of UVF.

- Relationship between the occurrence of IUGF and the qualification of the operator

Surgical interventions performed by surgeons and gynecologists in training were responsible for 27 cases of IUGF (Table II).

Table 2. *Distribution of patients according to operator and type of IUGF*

	VVF	UVF	VVF+UVF	Total
OP(in training)	24	2	1	27
OP<5ans	8	3	0	11
OP>5 ans	3	2	0	5

The suprapubic approach was the approach that caused the most IUGF with a rate of 74.4% (p = 0.07) (TableIII).

Table 3. *Distribution of patients according to approach and type of fistula*

Approach	VVF	UVF	VVF+UVF	Total
Suprapubic	24	7	1	32
Vaginal	11	0	0	11
Total	35	7	1	43

8. Discussion

8.1 Frequency

The frequency in our series was 4.3 cases/year. In the literature, similar figures have been found. Diallo in Guinea [5] had also found 4.3 cases per year; Kpatcha in Dakar [6], and Popoola in Nigeria [7] had each found 3.6 cases per year. Bouya in Congo [8], on the other hand, had found a much higher frequency of 9 cases per year.

Raassen in 2014 collected 5959 cases of repaired fistulas in 11 countries and found that 13.2% of fistulas were due to surgical error; 80% were secondary to the management of obstetric complications [9].

The results in the literature [9,10] are superior to our result. This is explained by the fact that, in our study, we were interested in all cases of caesareans, myomectomies and hysterectomies, in the gynecology and urology departments during the study period, to isolate the proportion surgical interventions resulting in a fistula;

while the aforementioned authors were interested in all cases of recent fistulas, and identified among them, fistulas of iatrogenic origin. Sanda in Niger [10], found that in 624 patients hospitalized for urogenital fistulas, 62 (9.9%) were iatrogenic.

8.2 Age

Twenty-six patients were between 20 and 40 years old, i.e., 60.5%; the average age of our patients was 39.83 +/- 11.49 years with extremes of 25 and 85 years. Our result is like that of Bouya [8] and Bentaleb [11] who found 37.37 years and 41 years respectively. On the other hand, Buanga had reported younger patients [12].

8.3 Medical History

In our series, 58.1% of patients had already had caesareans before the surgical intervention responsible for the fistula. It is therefore likely that previous pelvic surgeries played a major role in the genesis of IUGF. Bladder wounds occurring during pelvic surgery are predisposed to a history of abdominal or gyneco-obstetrical surgery, which will lead to anatomical changes in the pelvis [1].

Kpatcha had found in his study on the urological complications of pelvic surgery in Dakar, that the only case of bladder injury had occurred in a parturient who had already had a cesarean section [6]. In Morocco, Tazi had identified twenty cases of bladder injury out of a series of 1,636 gynecological-obstetrical interventions, representing an incidence of 1.4%; the incriminated risk factor was scarring of the uterus [13]

More than half of our patients (23) were multiparous, with at least 3 children per household. We did not find a correlation between number of babies bornand the occurrence of VVF or UVF in the literature; but we believe that number of babies born may have contributed indirectly to the occurrence of VVF and/or UVF found in our series.

These women had given birth by caesarean section, and the repetition of the surgical act certainly led to adhesions in them, which surely made the surgical intervention generating the fistula laborious. According to Raassen [9], several factors are believed to put a woman at risk for IUGF. These include previous surgery on the uterus, endometriosis, cervical myoma and previous pelvic radiotherapy [14,15,16]. Scar tissue and adhesions from anterior laparotomies can create challenges for surgeons performing obstetrical and gynecological surgical procedures. It is therefore reasonable to hypothesize that obstetrical or gynecological surgery might carry a greater risk of iatrogenic injury in women who have undergone laparotomy in the past [14].

8.4 Gynecological Surgery Generating Uro-Genital Fistulas.

Caesarean section was the surgical intervention, the most provider of IUGF in our series, with more than half of cases or 58.1% (25 cases). It was involved in 60% of VVF and 42.8% of UVF. Caesarean section was strongly implicated in the occurrence of VVF (p=0.0024). In the sub-Saharan literature, [17,18,19,20], we also note that caesarean section is a surgical procedure that causes a lot of IUGF. Ngongo [21] in his study, found that more than a quarter of his patients had UGF due to caesarean section. Our results are contrary to those found in the USA, where hysterectomy for benign pathology is the intervention providing the most VVF and UVF [barber].

8.5 Average Time o Reconstructive Surgery

The average time between the intervention that caused the fistula, and the repair surgery was more than 120 days in twenty-six patients, i.e., 60.46%.

Our result is like that of Badiaga [18] and Diallo [5], who found 130 days and 150 days respectively. These figures show us that unfortunately these patients who haveaIUGF, live with this burden for a long time, without resorting to appropriate treatment.

Even if they did not die from it, this disease excluded them from the community because of the negative impact it produces in their environment and especially because of the conception of the pathology. Kpatcha [6], speaking of the urological complications of pelvic surgery, thinks that the long average delay for the diagnosis could be explained by the lack of specificity of the clinical pictures of the lesions, which delays the consultation of the patients, and therefore diagnosis and management by the medical team. One could also explain the long average delay for care, by the existence of financial difficulties experienced by patients, which makes it difficult to access care. In the literature, some authors have found an average time before repair of the fistula shorter by about 19 days[8].

8.6 Fistula Treatment

All the UGF identified in our series had been treated either by fistulorrhaphy by high approach or by mixed approach and direct ureterovesical reimplantations had been performed for the management of UVF. Thirty-five (35) patients or 81.4% had received a repair of VVF; ureterovesical reimplantation (RUV) was performed in 7 patients, i.e., 16.2%. In the literature, VVFs are sometimes repaired vaginally [6].

Although this approach is the most used in fistula repairs, the abdominal approach should be preferred in high fistulas but also when associated intrapelvic lesions must be treated during the same operation [22]. The only case of mixed fistula (UVF+VVF) had benefited from a mixed repair in our study. Almost a quarter of our patients (23.2%) had recurrence after treatment of their fistula.

8.7 Operator Qualification

We found in our series that surgeons and gynecologists in training represented 62.79% of operators. The latter operate under the supervision of a young surgeon who is himself under the orders of an experienced, more informed surgeon. But very often emergencies are taken care of at night, when the staff is reduced and the work material is inappropriate, thereby reducing the concentration of the main actors in the care of these women who often arrive in critical condition. Scheduled surgeries are managed during the day with a greater number of staff available who can lend a hand if necessary.

Such a situation must be considered in the development of training and retraining curricula in surgery and surgical specialties.

Training surgeons and other health personnel in obstetrical care and other surgical skills is also essential to prevent new cases of iatrogenic fistulas.

9. Conclusion

The main point made during this work was that caesarean section and hysterectomy were the main causes of IUGF. VVF were more frequent, and surgeons in training were often incriminated. Too high a frequency of IUGF shows a low level of the health system. Advocacy must be made with the political authorities to remedy such a situation.

List of abreviations

- UGF: urogenital fistula
- IUGF: iatrogenic urogenital fistula
- VVF: vesicovaginal fistula
- UVF: ureterovaginal fistula
- OP: operator (surgeon)
- UVR: ureterovesical reimplantation

10. References

1. Obarisiagbon EO, Olagbuji BN, OnuoraVC, OguikeTC, AndeABA.Iatrogenic urological injuries complicating obstetric and gynaecologicalprocedures. Singapore MedJ2011 ;52 :738–41.
2. Likic IS, Kadija S, Ladjevic NG, Stefanovic A, Jeremic K, Petkovic S, et al.Analysis of urologic complications after radical hysterectomy. Am J ObstetGynecol 2008;199(6): 644
3. Ndiaye P, Amoulkini G, AbdoulayeI, DiagneI, CamaraM,Tal-DiaAParcoursdelafemmesouffrantdefistuleobstétricaleauNigerMedTrop2009;69:61-5
4. Kpatcha TM, Wangala P, Botcho G, Tchandana M, NambuzuD, Aboubakari AS. Profil epidemiologique, anatomoclinique et therapeutique des fistules urogenitales et rectovaginales au Togo Prog.Urol. (2020); 30(11):597-603
5. Diallo AB, Sy T, Diallo TMO, Bah AB, Touré A, Bah MD, et al. Surgical treatment of urological complications of gynecological and obstetric surgeries at the university hospital of conakry guinea. OJU, 2015; 05 :231-237
6. Kpatcha TM, Tengué K, Anoukoum T, Botcho G, Sikpa KH, Fall PA, et al. Complications urologiques de la chirurgie pelvienne au CHU Aristide Le Dantec de Dakar; AJU (2014)20 :206-210.
7. Popoola AA, Ezeoke GG, Olarinoye A. Urological complications from obstetrics and gynaecological procedures in ilorin, nigeria – case series. J West Afr Coll Surg. 2013 Oct-Dec; 3(4): 99–109.
8. Bouya PA, Odzébé AWS, Otiobanda FG, Itoua C, Mahoungou-Guimbi K, Banga MR, et al. Les complications urologiques de la chirurgie gynécologique ; Prog. Urol. (2011) 21 :875-78.
9. Raassen TJIP, Ngongo CJ, Mahendeka MM. Iatrogenic genitourinaryfistula: an 18-year retrospective review of 805 injuries. Int Urogynecol J. 2014;25: 1699-1706
10. Sanda G, Chipkao R, Harissou A, Soumana A, Tassiou FM. Les fistules urogenitales iatrogenes : à propos de 62 cas et revue de la littérature. AJU (2016) ; 22 (2), 55-60.
11. BentalebH, KarniH, KarmouniT, TaziK, El Khader K, Ibn AttyaA, et al. Fistulesurétéro-vaginales: Aproposde15cas. Afr J Urol 2009 ;15(3):200–5.
12. BuangaJK, NdioneJB. Syndromede Youssefoufistulevésicoutérineaprèscesarienne. Analyse rétrospective de six (6) dossiers. Med Afr N. 2001 ;(48) :274–9.
13. Tazi MF, Ahallal Y, Ahsaini M, El Fassi MJ, Farih MH.M.F. Plaies vésicales d'origine gynéco-obstétricale : mise au point à propos de vingt cas Journal Marocain d'Urologie, 17 (2010), pp. 17-21.
14. Mathevet P, Valencia P, Cousin C, Mellier G, Dargent D (2001) Operative injuries during vaginal hysterectomy. Eur J ObstetGynecolReprod Biol 97:71–75
15. Mteta KA, Mbwambo J, Mvungi M (2006) Iatrogenic ureteric and bladder injuries in obstetric and gynaecologic surgeries. East Afr Med J 83:79–83.
16. Tancer ML (1992) Observation on prevention and management of vesicovaginal fistula after total hysterectomy. Surg Gynecol Obstet 175 :501–506
17. Sangare D, Berthé HJG, Diakité ML, Samassekou A, Diakité AS, Diallo MS et al. Les complications urologiques liees a la chirurgie pelvienne au chu du point-g, a proposde 23 cas. Mali medical 2018 tome xxxiii n°2 : 9-12
18. Badiaga C, Diakite ML, Berthe h, Samassekou a, Berthe a, CoulibaLy MT, et al. Les lesions urologiques secondaires à la chirurgie gyneco-obstetricale dans le service d'urologie du chu point-G. Uro'Andro (2020); 2 (4):129-32
19. SebukotoHR, SemwagaE,RugakingilaRA.Urological injuries following Obstetricaland Gynecological Surgeries. East and Central African Journal of Surgery. March/April 2016 21 (1) : 148-55.
20. Mian DB, Kassé R, Kakou C, Angoi V, Yao A, Akinyole S et al.Lésions urologiques iatrogènes au cours de la chirurgie gynécologique et obstétricale au CHU de Cocody. Annales de la SOGGO 2020 ; 35 (15): 66-9.
21. Ngongo CJ, Raassen TJIP, Mahendeka M, Lombard L, Roosmalen JV. Iatrogenic genito-urinary fistula following cesarean birth in nine sub-Saharan African countries: a retrospective review. .BMC Pregnancy Childbirth (2022) ;22, 541.
22. A. Benchekroun, et al.Les lésions associées aux fistules vésico-vaginales. Acta Urologica Belgica, (1987) ; 55 (4), 615-662