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Research Article

## Pattern of non-obstetric infectious recto-vaginal fistula: a case series and literature review in Cameroon, Central Africa

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### ABSTRACT

**Background:** Perineal infection is an uncommon cause of non-obstetrical recto-vaginal fistula (RVF) which is associated with HIV infection. Cameroon (Central Africa) is in the fistula belt but infectious RVFs have not yet been deeply studied in the country. We therefore sought to determine the pattern of non-obstetric infectious RVF in Cameroon.

**Methods:** We carried out a cross-sectional and descriptive review of non-obstetric infectious RVFs managed at the Yaoundé University Teaching Hospital between January 1, 2009 and December 31, 2015. All complete files were included. The following data were retrieved: socio-demographics, characteristics of the RVF, management and outcome.

**Results:** Five non-obstetrical and non-traumatic RVFs of which four were observed in HIV-infected patients were included. All those RVFs occurred spontaneously. The following predisposing factors were identified: perineal warts (one case out of five), perineal suppuration (two cases out of five), hemorrhoids (the HIV-negative patient), spinstherhood (all cases), unemployment (all cases). All HIV-patients were under anti-retroviral therapy (ART) with good immunological and clinical responses for three of them. Three of them underwent previous unsuccessful surgical cure. Management included ART, antibiotics and surgery. Surgical approaches were perineotomy alone or with martius' flap, procto-perineotomy or trans-vaginal advancement flap. Outcome was satisfactory for all HIV patients (closure of fistula and fecal continence).

**Conclusions:** Local infection is a rare cause of RVF which was associated with HIV in our series. Combined treatment including antibiotics, HAART and surgery gave good results.

**Keywords:** Non-obstetric fistula, RVF, Infection, HIV, Cameroon

## INTRODUCTION

HIV infection is a public health problem in Cameroon with a prevalence of 4.3% in the general population and 5.6 % in women.<sup>1</sup> HIV-related diseases are therefore expected. Acquired recto-vaginal fistula (RVF) in HIV positive children is a new and curious pathology in several developing countries.<sup>2-4</sup> A case of HIV-related enterocolic fistula in an adult was reported for the first time in 2012.<sup>5</sup>

RVF is the presence of a communication between the vaginal cavity and the rectum, causing leakage of flatus and/or stool into the vagina. This is associated with unpleasant bodily odour leading to social stigma and ostracism.<sup>6</sup> RVF accounts for 1-5% of genital fistulas.<sup>7-9</sup> This type of genital fistula is associated with obstetrical and non-obstetrical (gynaecological) conditions. Infectious diseases affecting the perineum are the main non-obstetrical causes of RVF. Kouadio et al reported 37 cases of RVFs of which 11 were of infectious origin.<sup>10,11</sup> Bankole et al. described 6 cases of pediatric infectious RVFs of which 5 were in HIV patients.<sup>2</sup> Lymphogranuloma venereum, genital tuberculosis and perineal abscess have been identified by some authors as causes of RVF.<sup>10,12</sup>

Little is known about infectious RVF in adults. There is therefore a great need to explore this pathology. We herein report four cases of RVFs attributed to enterocolic infections in HIV patients.

## METHODS

This study took place at the Yaounde university teaching hospital which also serves as referral hospital for the whole country (Cameroon). All patients who underwent surgery for RVF between January 1, 2009 and December 31, 2015 were included. The site, size and borders of the fistula were confirmed by vaginal examination. The perineum was also examined in order to identify cutaneous and/or mucosal lesions. Management included combination of antibiotics, ART and surgery. The following surgical procedures were carried out: perineotomy, procto-perineotomy and trans-vaginal advancement flap (so called martius' flap). The following data were collected on a pretested questionnaire: including socio-demographic parameters, HIV status, past reproductive history, findings on perineal and vaginal exam, management and outcome. Prior to data collection, ethical and administrative clearances were obtained.

## RESULTS

**Table 1: Distribution of recto-vaginal fistula according to patients' characteristics.**

Characteristics	Patient A	Patient B	Patient C	Patient D	Patient E
Age (years)	31	37	33	36	39
Marital status	Unmarried	Unmarried	Unmarried	Unmarried	Unmarried
Level of education	Secondary	University	Secondary	Secondary	University
Profession	Blue collar	Blue collar	Blue collar	Blue collar	Blue collar
Gestivity	2	3	7	2	1
Parity	2	1	5	1	1
HIV status	Positive	Positive	Positive	Positive	Negative
CD4 cells count at time of surgery (mirolitre)	450	121	748	730***	NA
Taking HAART*	Yes	Yes	Yes	Yes	NA
Drugs of HAART	**Tenofovir lamivudine lopinavir	Zidovudine stavudine ritonavir	Zidovudine stavudine nevirapine	Tenofovir lamivudine effavirenz	NA
Duration of HAART	**Five years	1 week	10 years	2 years and 2 months	NA
Location of fistula	Supra-sphincteric lower third	Sphincteric	Supra-sphincteric lower third	Sphincteric extending to middle third	Supras-phincteric extending to the lower third
Fistula size(cm)	0.5	0.5	2	6	1
Duration of fistula	1 year 6 months	7 months	7 years	1 year	2 years 5 months
Number of surgical attempts	2	None	1	4	0
Suspected causal germ	Herpes simplex	Perineal suppuration	Perineal suppuration	Perineal suppuration	Perineal suppuration
Surgical technique	Transvaginal advancement flap	Perineotomy	Proctoperineotomy	Perineotomy + Martius graft	Proctoperineotomy
Post-surgical follow up	One year	One year	One year	5 months	Not available
Outcome at last visit	Satisfactory	Satisfactory	Satisfactory	Satisfactory	Satisfactory***

\*HAART; Highly Active Anti retro viral therapy; \*\* was under this protocol for 7 months, initial protocol was Lamivudine, stavudine and nevirapine and CD4 at 17/mm<sup>3</sup> justified the modification of protocol; CD4 was at 200/mm<sup>3</sup> at diagnosis; \*\*\*Non-specified chronic infection-at-pathology. NA: Not Applicable. Cm: centimetre

Five of the seven non-obstetrical RVFs recorded during the study period were attributed recto-perineal infection. All of them reported offensive vaginal discharge. Characteristics of patients are presented in Table 1. To protect medical secrecy, patients' names were coded as patient A, patient B, patient C, patient D and patient E. Patients A, B, C, D and E were respectively 31, 37, 33, 33 and 39 year old. None of the patients was married. Patients B and E had attended university, while patients A, C and D ended studies in secondary school. All of them were Blue collar. Patients A, B and D were from the centre region, patient E from the North West region and patient C from the East region of Cameroon.

Patient A was gravida 2 Para 2002 (normal vaginal deliveries); patient B was gravida 3 para 1021 (normal vaginal delivery); patient C was gravida 7 para 5025 (five normal vaginal deliveries); both patients D and E were gravida 1 Para 1001 (normal vaginal delivery). Four patients were HIV positive and were all under ART. Their CD4 cells counts were: 450 cells/microlitre ( $\mu\text{L}$ ) for patient A, 121 cells/ $\mu\text{L}$  for patient B, 748 cells/ $\mu\text{L}$  for patient C and 730 cells/ $\mu\text{L}$  for patient D. The duration of fistula was 18 months for patient A, 7 months for patient B, 7 years for patient C, 1 year for patient D and 2 years for patient E. Patients A, C and D underwent prior unsuccessful surgical cure for their RVFs.

Patient A presented herpetic perineal lesions around the fistula. Patient B, C and D had perineal suppuration before their formation of their RVFs, while patient E had had haemorrhoid before fistula formation. Patients A, C and E presented with a hole of 0.5 to 1 centimeter (cm) of diameter just above the sphincter at around 1.5 cm from the anal opening. Patient C has a hole of 2 cm involving the anal sphincter.

Surgery was the mainstay of management with the aim of closing the fistula. The following molecules were used for antibiotherapy: ceftriaxone, metronidazole, and amoxicillin-clavulanic acid. Surgical procedures were all carried out via vaginal route under loco-regional anaesthesia. Final outcomes were favourable for the five patients with complete closure and good continence.

## DISCUSSION

### Prevalence

Infection is an uncommon cause of RVFs in general but it is the most frequent cause of non-obstetrical RVFs. Indeed in 2014, we found that infection was responsible for 40 % of RVFs managed in our setting.<sup>13</sup> Our findings were similar to those reported by Kouadio et al in Ivory Coast where 78.6% of non-obstetrical RVFs were attributed to infection.<sup>11</sup>

### Patient's characteristics

All our patients were single and literate blue collar. They were thus from a low socio-economic background characterized by poor sanitation that increased their infectious risk. Eighty per cent (4 out of 5 cases) of our patients were HIV positive (under ART). In their series, Kouadio et al. found that 54.5% (6 out of 11 cases) of adults with RVFs were HIV positive.<sup>11</sup> Bankole et al. reported acquired RVFs in 6 children of whom 5 were HIV positive.<sup>2</sup> For several authors the high prevalence of HIV infection among patients with RVFs is due the contribution of immune deficiency to perineal infection.<sup>2,11</sup>

### Aetiology

In our series the causes of RVFs were perineal suppuration and herpes simplex. Various causes of lower third RVFs have been reported: abscess of the recto-vaginal septum, lymphogranuloma venereum, tuberculosis, abscess of bartholin's gland and HIV-associated bacterial and viral infections.<sup>10,11</sup> In developed countries, the main cause of non-obstetrical RVF is Crohn's disease that is less frequent in tropical regions.<sup>12</sup>

### Anatomopathology

All RVFs we herein report were located on the lower third of the rectum. This is similar to findings by Kouadio et al. in Ivory Coast who described 7 pediatric RVFs all located around the anal sphincters.<sup>2</sup>

### Management

Management included surgery and antibiotherapy (ceftriaxone and metronidazole followed by amoxicillin-clavulanic acid for some patients). Outcome was favorable for all our patients with complete closure of the fistula and good anal continence. Kouadio GK et al in their series found that surgery plus antibiotherapy (amoxicillin or a quinolone plus metronidazole) yielded a success rate of 73% at first attempt.<sup>11</sup> De Adams B et al. also described surgery as the best approach for the management of RVFs.<sup>11</sup>

## CONCLUSION

Though infection is an uncommon cause of RVFs in general it remains the most frequent cause of non-obstetrical RVFs. Little is known about the latter but it seems to be highly associated with HIV. There is therefore a great need for further investigation.

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