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# HIV-Associated Abdominal Surgical Pathologies: A Report of 108 Cases from the General Surgery Department Ignace Deen National Hospital of Conakry, Guinea

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**Abstract:** *Introduction*: The aim of this study was to identify HIV-associated abdominal surgical pathologies and to report the socio-demographic profile of infected patients. *Material and methods*: This was a five-year retrospective descriptive study, from January 2016 to December 2021, carried out in the general surgery department, Ignace Deen national hospital of Conakry, Guinea, on the consecutive records of patients who had abdominal surgery associated with positive HIV serology. *Results*: We compiled 108 records of patients with abdominal surgery and positive HIV serology, representing 2.8% of all patients screened in the department (n=3839). The mean age was 38.5±15.9 years, with extremes of 15 and 86 years; the 31 to 40 age group was the most represented (37%). There were 64 men (59.8%) and 44 women (40.2%). Married patients accounted for 65% of cases. Appendicitis and hernia were the most frequent pathologies, followed by peritonitis. In our series, 68 patients (63%) had a known positive HIV status prior to hospitalization, versus 40 cases (37%) of incidental discovery, and 48 patients (71%) were on antiretroviral therapy. All patients in our study were infected with HIV type 1. Mortality was 3.7%. *Conclusion*: Despite the low rate of HIV infection in surgical departments, HIV infection remains a reality. Raising the awareness of all nursing staff to the risks of contamination and systematic screening could minimize these risks.

**Keywords:** HIV Infection, Abdominal Surgery, Conakry, Guinea

## 1. Introduction

A real public health problem, human immunodeficiency virus (HIV) infection has existed now for over three and a half decades. In fact, the United Nations Aids Organization (UNAIDS) estimated that in 2021, 38.4 million people were living with HIV worldwide, of which 23.3 million were on treatment [1].

All these data should lead surgeons to consider the risk of HIV infection in their daily practice where the handling of patients in emergency is done without much precaution in an environment conducive to infection by hepatitis B and HIV viruses [2].

Despite the advent of antiretroviral drugs and the efforts of national and international control programs, the management of patients with HIV patients involves enormous risks for surgeons and all paramedical staff [3]. In the recent years; there are increasing demands for surgical interventions in Human Immunodeficiency Virus (HIV)-infected patients as a consequence of antiretroviral therapy.

The aim of this study was to identify the abdominal surgical pathologies associated with HIV infection and to report the socio-demographic profile of infected patients.

## 2. Material and Method

This was a retrospective descriptive study of a period of

five years, from January 2016 to December 2021, carried out in the general surgery department, Ignace Deen national hospital of Conakry (Guinea) including consecutive records of patients admitted and operated on for an abdominal pathology associated with a positive HIV serology, regardless of age, sex and origin of the patient.

The variables studied concerned socio-demographic aspects (frequency, age, sex, profession, marital status), clinical aspects (diagnosis of the surgical condition, screening mode, serological status, type of virus, WHO clinical classification), therapeutic aspects (surgical technique, postoperative follow-up, average length of hospital stay), prognostic aspects (prognostic factors). The data were entered using Word software, Epi- data version 7.0 and analyzed on SPSS software (version 21.0). Chi2 and Student's t test was used for comparisons and the test was significant if the p value was less than 0.05.

## 3. Results

During the five years of the study, we collected 108 records of patients abdominal surgery with a positive HIV serology, representing 2.8% of all patients screened in the department (n=3839). The mean age was 38.5±15.9 years, with extremes of 15 and 86 years. The age range of 31 to 40 years was the most represented (37%). The patients were 64 men (59.8%) and 44 women (40.2%). The most common socio-professional groups were shopkeepers (58.6%) followed by the soldiers (22.4%). Married people represented 65% of the cases.

***Table 1.*** *Distribution of Patients by pathologies.*

| Pathologies | Number | Percentage |
|---|---|---|
| Acute appendicitis | 42 | 38.5 |
| Inguinal hernia | 38 | 35.2 |
| Peritonitis | 15 | 14.1 |
| Acute bowel obstruction | 13 | 12 |
| Total | 108 | 100 |

In our series, 68 patients (63%) had a known positive HIV status before hospitalization; 40 cases (37%) were discovered incidentally, and 48 patients (71%) were under antiretroviral treatment. All patients in our study were infected with HIV type 1.

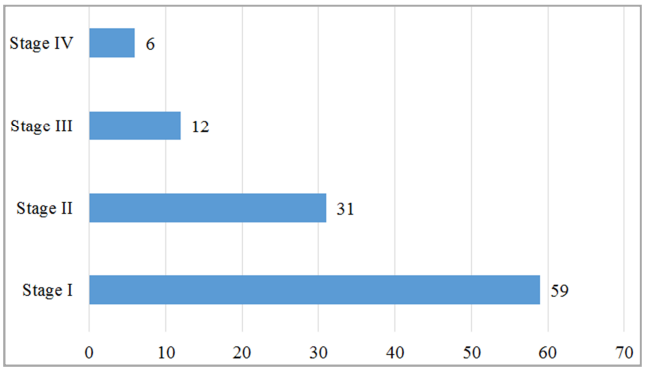


***Figure 1.*** *Distribution of patients according to the WHO stage.*

***Table 2.*** *Frequency of the surgical procedures.*

| Surgical procedures | Number | Percentage |
|---|---|---|
| Appendectomy | 42 | 38.5 |
| Hernia repair | 38 | 35.2 |
| Peritoneal washing and drainage | 21 | 19.4 |
| Suture closure of perforated ulcer | 15 | 14.1 |
| Bowel resection and anastomosis | 9 | 8.3 |

The postoperative course was marked by a morbidity of 5.5% (surgical site infection).

We recorded four deaths (3.7%) of which two patients suffered from peritonitis due to tuberculosis perforation with a WHO stage of 4, and two (2) others suffered from acute intestinal occlusion with necrosis of the ileal loop with a WHO stage of 4.

The average length of hospitalization was 9.1 ± 1.2 days with extremes of 5 and 21 days.

The factors that influenced the occurrence of morbidity and mortality were dominated by peritonitis and WHO stage 4 (P=0.03).

## 4. Discussion

During our study period, we collected 108 records of abdominal surgery with positive HIV serology, representing 2.8% of all the patients screened in the department (n=3839). However, we noted a poor record keeping and a lack of systematic screening of all operated patients. This result is lower than those of Boukinda F et al [4] who found a prevalence of 20.9%.

The mean age was 38.5±15.9 years with extremes of 15 and 86 years; the age range of 31 to 40 years being the most represented (37%). This result is close to that of Ngowe et al [5] at the Yaoundé General Hospital who reported an average age of 40 years.

The fact that young adults are more concerned in the African context is due to the youth of the African population on the one hand, and on the other hand to the fact that this age group is the most sexually active and the most mobile.

In our study, there was a predominance of males, with a sex ratio of 1.45. This result is similar to that of Dieng et al [6] in Dakar who reported a sex ratio of 1.46. On the other hand, Diallo AD et al [7] in Guinea found the opposite with a superiority of the female gender over the male gender. This can be explained by the natural anatomical predispositions of women which expose them to a higher risk of HIV transmission on the one hand and on the other hand by gender inequality and sexual violence [8].

The high frequency of married patients reported in our study was recorded by Fouedjio JH et al [9] during a study conducted on the prevalence of HIV infection in scheduled gynecological surgery. The predominance of married patients could be explained by the fact that in the Guinean population, many people tend to marry early.

Acute appendicitis and inguinal hernia were the main surgical conditions surgical conditions found. Indeed, these two conditions are quite frequent in young adults in our context. However, it is difficult to link these surgical

conditions to HIV infection. In the literature, El Ktaibi A et al [10] have suggested that appendicular wall involvement is due to hematogenous or lymphogenous spread from a distant primary site.

The predominance of HIV type 1 infection observed in this study is similar to the data in the literature because according to the World Health Organization HIV serotype 1 is responsible for the HIV/AIDS pandemic in the West African sub-region [11].

In our series, more than half of our patients had a known positive HIV status before hospitalization, but 40 cases were discovered incidentally. We recommend the acceptance of systematic screening, as it leads to adherence to treatment when appropriate, which is the goal. Even in an emergency, we proceeded to screening without WHO classification and without advice of screening-treatment as suggested by the CDC [12].

The postoperative course was marked by morbidity dominated by surgical site infections. This high rate of surgical site infection could be explained by the immune status of our patients, especially in stages 3 and 4 [13-16].

The average length of hospitalization was 9.1 ± 1.2 days with extremes of 5 and 21 days. This long hospital stay could be related to the severity of the surgical pathology, the therapeutic option and the postoperative complications.

The factors that influenced the occurrence of death were dominated by the occurrence of peritonitis which is often diagnosed late resulting in multi-visceral failure and WHO stage IV.

## 5. Conclusion

Despite the low rate of HIV infection in surgical services, HIV infection remains a reality. All surgeons should consider the risk of HIV infection in their daily practice where the handling of patients in emergency is done without much precaution in an environment conducive to infection by hepatitis B and HIV viruses. A systematic screening for patients undergoing any surgery and awareness of the risks of contamination among all health care personnel could minimize these risks.

## Conflicts of Interest

The authors declare no conflicts of interest.

## Author's Contributions

All authors have contributed to the development and implementation of this work. The authors also declare that they have read and approved the final version of this manuscript.

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