



## A Study of Patients of HIV Presenting with Surgical Emergencies

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### Abstract

**Introduction:** *Surgical emergencies in patients infected with HIV present with various patterns of presentation and their severity. Depending on the severity of each, management and outcome can differ. Hence, it is important to keep a high index of suspicion for the diagnosis. We aimed to study the clinical and demographic profile and their correlation with CD4 counts. After extensive literature search with keywords as 'Surgical Emergencies in HIV patients', it was found that not many studies were done on this topic. However, there were many articles on 'Abdominal Emergencies and HIV' and various case reports on individual surgical emergencies.*

**Patients and Methods:** *Forty three patients of HIV presenting to surgical emergencies were studied from August 2013 to November 2015. This was a hospital based prospective observational study.*

**Results:** *Of the 43 patients studied, the patients with abscesses formed the highest group. The commonest of the non-abscess group was pancreatitis. 46.52 per cent of the patients presented with CD4 counts less than 200. Four patients died during the study.*

**Conclusion:** *HIV and AIDS can present with clinically challenging situation and different presentations. Hence, a high index of suspicion and awareness among the treating healthcare professionals is required. CD4 count has a good predictive value for mortality and morbidity. To study the patterns of presentation of surgical emergencies in patients of HIV a study of a larger sample size and a longer follow-up is required.*

### Introduction

HIV infection is a pandemic and presents with involvement of various systems in the body. These patients present to various departments with a wide variety of clinical conditions. Looking at the wide spectrum of diseases associated, surgically treatable presentations need to be diagnosed early in the emergency room. Overall, very few studies have been done specifically correlating the association of HIV with surgical emergencies.

Suppressed immunity is an important cause of the severity of presentation. CD4 counts serve as a

good predictor. Adequate workup, timely diagnosis and intervention are the key steps to treating these patients. Severely immunocompromised patients may not have classic presentation of the disease and a high index of suspicion is required.

### Method

This is a Hospital Based Prospective observational study. Prior permission for carrying out this study was obtained from institutional ethics committee. Forty three patients of HIV presenting to surgical emergencies were studied. from August 2013 to

November 2015. All known patients and newly diagnosed cases of HIV presenting with surgical emergencies, both operative and non operative were included. Patients with traumatic emergencies and non consenting patients were excluded from the study. A detailed history of all the patients of HIV presenting to surgical emergencies except traumatic emergencies were taken followed by a thorough clinical examination. Relevant radiological and laboratory

investigations were done. Clinical decisions were taken pertaining to operability and non operative management. Recent CD4 counts, type of procedure done and outcomes were recorded.

### Observations

Out of total 43 cases, there were 21 males and 22 females. Maximum, patients belonged to age group of 30-39 yrs. While minimum patients were seen in 13-19 yrs of age group.

**Table 1.** Table showing age and gender profile of patients of HIV

Serial No.	Age group (years)	Male	Female	Total	Percentage
1	10-19	0	1	1	2.33%
2	20-29	1	4	5	11.63%
3	30-39	7	12	19	44.19%
4	40-49	9	3	12	27.9 %
5	50-59	3	0	3	6.98%
6	60-69	1	2	3	6.98%
7	70 & above	0	0	0	0%
Total		21	22	43	

**Table 2.** Table showing various clinical presentations of HIV Patients

Diagnosis	Male	Females	Total	Percentage
Liver abscess	3	0	3	6.98%
Psoas abscess	2	3	5	11.63%
Thigh abscess	2	3	5	11.63%
Scrotal abscess with Fournier's gangrene	2	0	2	4.65%
Necrotising fasciitis chest wall	1	0	1	2.33%
Breast abscess	0	4	4	9.30%
lower limb cellulitis	0	1	1	2.33%
Subacute intestinal obstruction	1	5	6	13.95%
Perforation peritonitis	2	0	2	4.65%
Pyoperitoneum	1	0	1	2.33%
Renal colic	0	2	2	4.65%
Epididymo-orchitis	1	0	1	2.33%
Pancreatitis	4	3	7	16.28%
Cholecystitis	1	1	2	4.65%
Empyema necessitans	1	0	1	2.23%

Most common type of abscess was psoas abscess. Of these patients, 8 patients were in CD4 count C group (<200), while 5 patients in the B group (200-499) and 6 in the A group (>499). Most common organism grown from culture of these abscesses was staphylococcus aureus. 1 patient of thigh abscess expired and a patient of psoas abscess expired, secondary to septicaemia. Various types of gastrointestinal emergencies included

perforation peritonitis, pyoperitoneum, subacute intestinal obstruction, pancreatitis and cholecystitis. The most common type of emergency was pancreatitis. Most of the patients presented in the CD4 count C group i.e. 12 patients.

### Procedures Done, Cd4 Count And Outcome

46.51% were managed conservatively, 3 patients i.e. 6.98% had to undergo exploratory laparotomy,

3 patients i.e. 6.98% underwent debridement. Incision and drainage was done for 10 patients i.e. 23.26% and pigtail insertion was done for 7 patients i.e. 16.28%.

**Table 3.** Distribution of patients according to CD4 counts

CD4 COUNT GROUP	Number	Percentage
A( $\geq 500$ )	14	32.59%
B(200-499)	9	20.93%
C(<200)	20	46.51%

Of the 43 patients studied, most commonly the patients were in group C, 20 patients, 14 patients were in group A and 9 patients were in group B. Out of the 43 patients, newly diagnosed were 9, and 34 patients were previously diagnosed with HIV infection. Amongst the newly diagnosed, the common presentations were acute pancreatitis (2 patients) and breast abscess (2 patients). Of the 43 patients studied, 4 patients expired. The most common cause of death in these patients was septicaemia. One patient presented with pancreatitis with septicaemia, another patient presented with thigh abscess with septicaemia and the third died of psoas abscess with septicaemia. One patient of subacute intestinal obstruction with abdominal tuberculosis and pre existing glomerulonephritis also expired. All the 4 patients were in the CD4 count group C.

### Discussion

After extensive literature search with keywords as 'Surgical Emergencies in HIV patients', it was found that there were not many studies done on this topic. However, there were many articles on 'Abdominal Emergencies and HIV' and various case reports on individual surgical emergencies.

Patients with HIV infection are susceptible to abscess formation. The presentation may be classical or may be altered due the poor immune status, septicaemia and hence, inability of the immune system to control the infection. The presentations of these abscesses are diverse and can affect various organ systems of the body.

In the present study, 3 patients presented with liver abscess, all patients were males and were treated with intravenous antibiotics with ultrasound guided pigtail drainage. All the patients showed Klebsiella in their culture. Previous studies have shown isolation of Klebsiella pneumoniae and E.coli commonly<sup>[1]</sup>.

The present study showed staphylococcus aureus to be more in comparison to mycobacterium, with more predilection to females in patients of psoas abscess. Navarro et al in their study showed male predilection for psoas abscess and most of the patients in the CD4 count C group, the most common organism in their study being mycobacterium<sup>[2]</sup>. In this study three patients had culture positive for staph aureus and for two patient for pseudomonas. In the present study, 4 patients of HIV presented with breast abscess. Staphylococcus Aureus was found to be the most common organism. This was consistent with previous studies<sup>[3]</sup>.

Two patients presented with scrotal abscesses with Fournier's gangrene both in 20-29 age group. The organisms isolated were staph. aureus and pseudomonas. The organisms isolated were similar to the organisms isolated in the previous studies. In a study by RJ Hillman et al, 4 patients with Fournier's gangrene were studied in age range 31-36 years, the organisms isolated were staph, aureus, streptococcus and pseudomonas<sup>[4]</sup>. 2 patients died in that group.

In our study, 1 male patient presented with necrotising fasciitis of chest wall for which debridement was done. Microbial culture and biopsy did not reveal any organism.

Of the 19 patients of abscess, 6 presented in the CD4 count C group, two patients expired, both in the CD4 count C group suggesting its relation to severity and mortality.

HIV infection can present with various abdominal emergencies. Previous data showed appendicectomies and exploratory laparotomies for perforation peritonitis to be the common procedures being performed in these patients<sup>[5]</sup>.

Tuberculosis, cytomegalovirus and gram negative bacteria are the main causative agents of these pathologies.

Sandhya P Iyer et al in a study showed that HIV seropositivity constitutes 76.47% of total deaths due to abdominal tuberculosis which is a significant observation<sup>[6]</sup>. In our present study, 1 male and 5 females presented, the most common CD4 group involved has was C group. All the patients in our group were managed conservatively in form of observation, nasogastric decompression and adequate hydration. One female patient was an old operated case of appendicitis, subacute intestinal obstruction resolved in 2 days. The radiological findings included multiple air fluid levels on X-Ray. CT-scan showed lymph nodes, thickened bowel loops and ascites. One patient of abdominal tuberculosis expired secondary to septicaemia and glomerulonephritis. 2 patients presented with perforation peritonitis, they were of 45 and 50 years of age and CD4 count in the C group in both. Intra operatively ileal perforation was found in both the patients with gross peritoneal contamination. This is consistent with the available literature, ileal perforations are common in these patients and can be caused by cytomegalo-virus or mycobacterium. In our present study two patients of HIV presented with acute cholecystitis. Patients were asked to follow up for laparoscopic cholecystectomy. These patients were lost to follow up. 7 patients of HIV presented with acute pancreatitis. 5 patients were already diagnosed cases of HIV receiving ART while two patients were newly diagnosed after admission. Old data shows controversial views on the outcomes based on CD4 counts until it is significantly lowered. The patients who died in this series had low CD4 counts suggesting it as a predictor for the severity of the disease.

In a study done by Coburn M et al 21 patients of HIV with epididymo orchitis were studied. 15 patients were previously diagnosed and 6 were found to be newly diagnosed. No intervention was

required and there was no mortality noted in this group<sup>[7]</sup>.

In present study, 1 patient of HIV presented with epididymo orchitis. The patient was a previously diagnosed case of HIV and in the CD4 count group A.

Jover et al described a 22-year-old man with human immunodeficiency virus (HIV) infection who had tuberculous empyema necessitatis and was successfully treated with surgical debridement and antibiotic therapy<sup>[8]</sup>. In our study, a 40 year old patient of HIV presented with empyema necessitatis, in the CD count group C. The patient was already on anti retroviral therapy. Clinically the patient had no signs of fever or septicaemia, however clinical and radiological signs suggested empyema necessitatis. The patient was started on anti tuberculous treatment.

### Conclusions

HIV and AIDS can present with clinically challenging situation and different presentations. Hence, a high index of suspicion and awareness among the treating healthcare professionals is required. CD4 count has a good predictive value for mortality and morbidity. Abscess is the most common reason for a surgical intervention in patients of HIV. Acute Pancreatitis is the second most common surgical emergency in these patients.

To study the patterns of presentation of surgical emergencies in patients of HIV further studies of a larger sample size and longer follow-ups are required.

### References

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