

Aids and Surgery

G. Morino¹, M. Baldan², E. D'Onofrio³, A. Melotto¹, L. Bertolaccini⁴

¹CCM-Mbagathi Hospital, Nairobi, Kenya.

²ICRC, Nairobi, Kenya

³Paideia Hospital, Rome, Italy

⁴Ospedale Maria Vittoria, Torino, Italy.

HIV constitutes one of the most difficult challenges facing the healthcare profession today. It is estimated that HIV infects over 40 million people in the world and 14 million have died from the disease so far. The objective of the study was to evaluate the outcome of treatment of HIV-related surgical conditions, estimating the morbidity and mortality of surgical intervention cross infection risks to surgical equipes and analysing preventive strategies to HIV perioperative transmission.

Introduction

HIV/AIDS have had a dramatic effect on the practice of surgery. It is estimated that between 20% and 25% of HIV/AIDS patients require surgery sometimes during their illness. The objective of the study was to evaluate the treatment of those surgical problems directly related to HIV, estimating the morbidity and mortality of surgical intervention and cross infection risks to surgical equipes and analysing preventive strategies to HIV perioperative transmission.

The correlation between HIV infection and surgery began to be highlighted only two years after the publications concerning the identification of the virus by Luc Montaigner and Robert Gallo appeared on "Science" in 1983; in 1985 Kaiser *et al.*¹ published their surgical considerations regarding the treatment of immune suppressed patients; one year later Canino *et al.*² reported their experience concerning surgical problems in patients presenting HIV, AIDS and AIDS related syndromes.

As the prevalence of the HIV infection continues to rise, healthcare workers in all geographic regions can expect greater clinical exposure to patients with HIV/AIDS. Thus HIV/AIDS infected individuals may present with surgical problems common to the general population. A survey conducted in 2003 by the *Department of*

*Oral and Maxillofacial Surgery, Preventive Dentistry, Surgery of Awolowo University in Nigeria*³ showed that almost half (41.5%) of the surgeons had operated on a known HIV/AIDS infected individuals; besides, this is probably an underestimate as many HIV-positive individuals have never been tested and are therefore unaware of their status. Becker *et al.*⁴ present a successful surgical outcome rate of 79% (range: 68%-90%) without any significant increase of

mortality and morbidity. Epidemiological data by Flum *et al* shows that the rate of accidental percutaneous injury during surgical operations is 6% (range: 2.5%-15%); the rate of HIV transmission after percutaneous exposition is 3%, while the rate of transmission from HIV positive patient to surgeon varies from 1/1,300,000,000 to 1/450,000, this leading to a rate of HIV transmission to the surgeon per intervention of 1/130,000.

HIV epidemiology in Africa is different: if on one hand the HIV exposition rate is lowⁱⁱ, on the other the seropositivity of the local population is high as over 20 million people are living with the virus. That's why cross infection risk for a surgeon working in Africa is 15 times higher than in western countries. When surgery started dealing with the stigma of AIDS some surgeons avoided operating on HIV-positive patients, as they were worried to contract the virus. Moreover, especially in the United States a surgeon who was known to be positive could have his career, practice and reputation severely damaged. Yet many scientific organisations and societies have underlined that it is unethical to screen an individual without consent or to exclude an HIV/AIDS infected from treatment or to refer them to other colleagues and that there is an ethical duty to treat all patients without being influenced by any eventual seropositivity, but adopting the highest measures against cross infection. Furthermore, it has been established that HIV positive surgeons can continue their clinical activity and practice of surgical interventions.

Surgical indication is complex and must come after an evaluation of the stage according to the criteria established by the *Centre for Disease Control (CDC) of Atlanta*, and after an assessment of the performance status and of the possible therapeutic options.

Pre-operative HIV screening of patients is not necessary, as all the patients must be considered as potentially infectious. Harris *et al*⁹ propose a scheme for the surgical risk evaluation: looking back on the fact that HIV infection does not constitute on its own a risk for surgery but that this risk is super-imposable to that of an immune suppressed or malnourished patient, they suggest to apply the same guidelines normally applied to a non-HIV patient with a standard pre operative screening associated with an evaluation of opportunistic pathologies and of chronic organic damage.

Surgical management includes the same standard precautions necessary for cross infection control such as the uses of goggles with side screens and double gloving and anaesthetic procedures are not different from those ones for non-HIV patients. Must be reduced the incidence of any eventual exposition to biological fluids during the intervention and must be adopted an indirect sharp instrument passing technique.

Endris *et al*⁵ highlight the role of mini-invasive surgery (laparoscopy and thoracoscopy: endoscopic surgery reduces post-operative immune suppression and the exposition to biological fluids and to sharp instruments as well. Thus these authors suggest evacuating the pneumo- peritoneum within a close system in order to reduce contamination possibilities in case of laparoscopy.

Unfortunately there are no perspective data available for what concerning mortality, morbidity and complications. Some retrospective studies evaluated by Schecter *et al*⁶ show an increase of mortality in the stage of pathology as it caused by respiratory insufficiency and severe sepsis. In almost all the studies can be noticed a high incidence of surgical injury morbidity with a healing time twice or three times higher especially regarding anal rectal and emergency surgery.

On the contrary mortality is not significantly high in HIV patients; thus there is no increase of mortality during mini-invasive procedures compared to that normally occurring during traditional thoracotomies or laparoscopies. Generalised lymphadenopathy is a common symptom of HIV infections. FNA usually gives sufficient diagnostic information. Surgical biopsy is requested in case you need to confirm and classify a lymphoma, TB, lymphadenitis.

Kaposi's sarcoma is a rare cutaneous tumour quite common in AIDS patients. The surgeon is involved in the diagnosis and the control of complications. Thrombocytopenic Purpura can appear in asymptomatic HIV patient and AIDS patient as well. ARV Therapy has showed an increment in platelets count. Splenectomy is indicated only to control Purpura in those selected cases not responding to therapy.

Emergency Surgery in HIV patient includes different pathologies like internal organs perforations and peritonitis related to Cytomegalovirus (CMV), Cryptosporidium, Candida. Obstruction and haemorrhage are possible complications of Lymphomas and Kaposi of GIT.

Opportunistic infections can involve gallbladder and biliary tract. Acute Cholecystitis demands an urgent cholecystectomy. Biliary tract obstruction caused by sclerosing cholangitis and ampullary stenosis is treated by ERCP. The obstruction can also be caused by hyperplastic portal lymph nodes and CBD lymphoma as well.

The anal rectal pathology is one the most common surgical problem in HIV patient. Anal condylomata, anal squamous cell carcinoma, perianal fistula and abscess are the most frequent cases. Regarding Gynaecological diseases PID is the most frequent one very often with severe presentation and Fits-Hughs Curtis Syndrome. We have to consider the eminent role of diagnostic laparoscopy.

HIV patients present very often a variety of thoracic diseases. Kaposi's sarcoma, Lymphoma, opportunistic infection like Pneumocystis Jirovecii are common and TB pleural effusion and empyema as well. Thoracentesis has an essential role in diagnosis and thoracoscopy and VATS are increasing their importance.

Data from the *School of Surgery of Torino* do not clash for what concerning epidemiology, complications and mortality with those showed by Literature: the only differences concern the admission typology which comprises a relevant day-Surgery experience as well in our centre. This evidence cannot be perceived by Literature as the centres for the surgery of HIV positive patients would rather admit shortly even for minor pathologies anyway.

Concerning Orthopaedic Surgery the earlier studies of Hoekman et al¹⁴ and Jellis¹³ report increased frequency of infection after open reduction of fractures in HIV patient, although too little is known about the relationship between HIV and implant sepsis. The risk of wound infection increases as the immunity deteriorates. A recent article of Brijlall et al¹⁵ recommends early implant removal in HIV patient soon after union to avoid future septic complications.

In conclusion surgical procedures in HIV individuals present with indications and characteristics common to non-HIV population. In particular there are no statistically significant differences between the surgical success rate and mortality and morbidity rates. Mini-invasive surgery, in particular laparoscopy and the more recent thoracoscopy is more and more relevant. Besides, according to us the possibility of minor surgery interventions (anorectal pathology) in Day-Surgery should be more widely exploited. Harris and Schechter⁹ laid emphasis on the fact that surgical equipes members have a professional, moral and ethical responsibility to give their patients an optimal quality without caring for their eventual seropositivity.

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