Management of opportunistic infections and other surgical conditions in HIV infected patients.

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The emergence of HIV infection and AIDS has changed the pattern of many diseases in various fields of medicine including surgery. In surgical practice changes have been documented in the pattern of diseases such as pyomyositis, Kaposi's sarcoma, tuberculosis, empyema thoracis among others. The pattern of change is however different between the developed and the developing world. The management may also differ according to the disease presentation. The patient's response to surgical treatment has also changed. This paper reviews and discusses the pattern of disease presentation of HIV related surgical conditions and the management of such conditions in the developing world.

Introduction

The emergence of HIV and AIDS has changed the pattern of many diseases including surgical ones. Some of the diseases, which were almost being eliminated such as tuberculosis, have surged up as new epidemics. Others such as Kaposi's sarcoma, which were indolent, are now more aggressive while opportunistic infections have become a common problem causing high morbidity and mortality.

Introduction

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Changes in disease pattern are worldwide, but the pattern of change reported in the developed world is different from that we see in Africa and other third world countries. For example, while empyema thoracis is common in AIDS in the developing world, it is a rare entity in the west[1,2] . Even the management protocols may differ from place to place depending on the pattern of diseases themselves as well as the nature of services available.

In surgical practice, changes have been noted and documented in the pattern of previously known diseases such as pyomyositis, Kaposi's sarcoma, and tuberculous empyema thoracis. These have become either more aggressive or their prevalence has risen with the AIDS epidemic. The surgeon

may encounter patients at any stage of HIV infection. Those in CDC groups I and II may present to the surgeon like any other non-HIV infected patients with the usual surgical problems. Those in CDC groups III and IV will present to the surgeon with a variety of problems related to their HIV infection including opportunistic infections[3]. Apart from changes in the pattern of disease presentation, even the response to treatment has changed in some disease syndromes. It is therefore important for the surgeon not only to understand the surgical problems associated with HIV infection, but also to appreciate how HIV infected patients tolerate surgical procedures[4].

In Africa, where HIV infection is in an epidemic form, the following are some of the most common surgical conditions seen[5,6].

- Lymphadenopathy,
- Pyomyositis.
- Kaposi's sarcoma,
- Tuberculous thoracis empyema,
- Tuberculous pericardial effusion,
- Anorectal diseases and
- acute abdominal conditions.

The management of these conditions will be briefly discussed with particular reference to the East African situation.

Lymphadenopathy.

Lymph node enlargement is very common in HIV/AIDS patients, especially the cervical lymphadenopathy[5,6,7]. The syndrome being so common, some authors have questioned the role of lymph node biopsy in HIV infected patients, with others resorting to giving empirical anti-TB treatment to each patient to begin with [4]. When lymph nodes are enlarged in such patients, the most likely causes in our region include tuberculous adenitis, reactive lymphadenopathy, Kaposi's sarcoma, and lymphoma, usually the non-Hodgkin's type[5,7,8].

It is important therefore to determine the specific cause as the treatment of each condition is different. Morad [9] makes a very valid comment in this regard that: "the empirical use of anti-tuberculous treatment without histopathological diagnosis may lead to undue delay in diagnosis and treatment of malignancy and may also incur unnecessary anti-TB therapy in patients with other benign conditions". Therefore cytological diagnosis should be done as this is less invasive, but this is not conclusive and especially if the nodes are asymmetrical and are more than 1.5 cm in size, open biopsy should be taken to establish the diagnosis and institute the appropriate treatment[5,6,7,8,9,10]. However in selected cases, upper aerodigestive evaluation may be necessary before cervical lymph node biopsy to exclude primary ENT malignancy.

Pyomyositis

This disease was first described in 1909.The known predisposing factors include chronic ill health and debility, though vitamin A deficiency and trauma have been incriminated[11]. Currently, the disease is seen in young patients aged between 21 and 40 years, predominantly males[12,13]. In one study, 61.3% of all patients with pyomyositis were positive for HIV by Elisa test[5]. The lesions tend to be multiple and recurrent. The commonest pathogen in most studies is stapylococcus aureus and drug sensitivity pattern suggests cloxacillin and erythromycin as the drugs of choice[3]. Just like in non-HIV related pyomyositis, incision and drainage of the pus collection is the mainstay of treatment[3,12].

Kaposi's sarcoma.

This old disease is now seen in two broad clinical forms, the "old" endemic disease and the "new" epidemic disease that is aggressive and HIV/AIDS related[14]. Whereas the endemic variety was a disease of males in their forties with a

"benign" course, sometimes undergoing spontaneous regression, the AIDS related type is a disease of young adults in their twenties and thirties with a male to female ratio of 4:1; it is aggressive and extensive[6,14,15,16,17]. The disease is seen in patients with advanced HIV/AIDS and may be cutaneous or visceral. Human herpes type 8 has been identified as an aetiological agent[6,15]. The clinical presentation of the epidemic disease is well summarized by Bailey[14] as follows:

- A male to female ratio of 4:1,
- Age at onset: males 35 years, females 25 years.
- Short history or acute onset,
- Symmetrical lymphadenopathy occurring even in adults,
- More visceral disease as manifested by oral lesions and
- Early death compared with endemic Kaposi's sarcoma.

The disease may present with skin nodules, plaques, associated oedema, lymphadenopathy, visceral lesions or any combination of the above. The role of surgery is mainly for biopsy, to establish the histological diagnosis. The treatment is either chemotherapy with actinomycin D and vincristine or a sequential half-body irradiation or local irradiation for localized disease. Where a radiotherapy centre is available as in the case in Tanzania, this becomes an economical form of treatment. The disease regresses with treatment but relapses are common. The widespread form of AIDS related Kaposi's sarcoma may not respond significantly to treatment[6].

Tuberculous empyema thoracis and pericardial effusion

Empyema thoracis is common in HIV infected patients. In developed countries, the disease occurs as a complication of community acquired pneumonia [18,19] while in the developing countries the cause is mainly tuberculosis [20,21]. Tuberculosis, which had been brought under control, has thus resurged with the HIV epidemic. The most common surgical complications of pulmonary tuberculosis are empyema thoracis and pericardial effusion. In Zambia, 66 to 81 percent of patients with TB pleural disease were reported to have HIV infection[1].

The treatment of tuberculous empyema thoracis follows the same principles as in the non-HIV infected patients. Pleural drainage by tube thoracostomy is the initial form of management[8,12,20,22]. If there is no improvement with this form of treatment then rib resection and open chest drainage (the so called chest window) is the best option. This must however be done when the mediastinum is fixed by fibrosis, otherwise exposure of the empyema cavity to the atmospheric pressure will certainly lead to collapse of the underlying lungs[22]. This "fixing" of the mediastinum usually takes about 6 weeks[22]. Patients usually show remarkable improvement with clearance of the sepsis. The underlying problem, that is tuberculosis, must be treated accordingly with the appropriate anti-tuberculous drugs[20,22].

Pericardial effusion is a common problem complicating tuberculosis in HIV infected patients. In a study done in Dar es Salaam, it was found that 99.9% of all pericardial effusions were tuberculous in origin[23]. Currently the condition comes under surgical care only if it causes cardiac tamponade or it has caused constrictive pericarditis. Otherwise it is now treated medically with anti-tuberculous drugs. If the effusion causes cardiac tamponade, it can be managed by thoracocentesis or subxiphoid pericardiostomy in selected cases. If the disease progresses to cause constrictive pericarditis, the treatment is pericardiectomy[23].

Anorectal diseases

Anorectal diseases are very common in patients with HIV/AIDS. The common conditions include anal warts, fissures, fistulae, abscesses, haemorrhoids, and anal ulcerations[3,12,24,25]. Before the AIDS pandemic, anorectal sepsis was uncommon in Eastern Africa, but currently this is very common even in among people who do not practice anal intercourse[12]. Patients present with perianal ulcers, abscesses and fistulae of spontaneous onset. Painful anal ulcerations may be due to herpes simplex virus or cytomegallovirus infections and these are managed by antiviral drugs such as acyclovir[3,24,25]. They could also be due to specific infection such as tuberculosis or syphilis[4] and therefore relevant investigations including biopsy in selected cases should be done to make a specific diagnosis and give appropriate treatment[26]. Perianal abscesses, seen more commonly in HIV-positive than in HIV-negative patients, have to be adequately drained for if they are improperly or inadequately drained they can result into septicaemia and death or could lead to fistula in ano[25]. Since sometimes HIV-positive patients may not show the typical features of fluctuation, a high index of suscipicion may be required in some of the cases.

In general, patients with perianal conditions who are in CDC stage I and II HIV disease are managed just like anybody in the general population. However, in patients with CDC stage III and IV, the tendency is to lean more towards conservative treatment as it has observed that these patients have poor healing potential and a high surgical morbidity even for minor anorectal diseases[3,4,25]. The exception is in patients who have anorectal abscesses who should be surgically drained regardless of their HIV status as per CDC classification. This leads to remarkable relief of pain and prevents septicaemia, which is likely to occur if pus is not drained[4,27].

Acute abdominal pain

Abdominal pain is a very common problem with AIDS and it has been found that up to 50% of patients with AIDS will develop gastrointestinal manifestations during the course of their illness[28]. Several studies have revealed that the most common causes of abdominal pain in these patients include the following[3,4,5,28,29]:

- Cytomegallovirus colitis,
- Intra-abdominal lymphoma,
- Atypical mycobacterial infection,
- Visceral Kaposi's sarcoma,
- Abdominal tuberculosis and
- Acalculus cholecystitis.

In trying to establish the cause of the pain, one may wish to consider among other things the site of pain. Usually the patients present with one of the four types or sites of pain[3]:

- Epigastric pain with or without oesophageal symptoms,
- Right upper quadrant pain with or without jaundice,
- Right iliac fossa pain and
- Diffuse abdominal pain.

If the diagnosis is straightforward (e.g. acute appendicitis or perforated duodenal ulcer) then the patients should be operated on just like in any other HIV-negative patient.

However, in CDC group IV AIDS patients, sometimes a period of careful conservative management may be beneficial as it could save the patient from having laparotomy for conditions where surgery may not have a place such as intra-abdominal lymphadenopathy or focal liver or biliary diseases which are common in these patients[3,29].

Conclusion

While this paper gives general guidelines for management of HIV-related surgical conditions, it remains a fact that in the final analysis the management of the patient will have to be tailored towards each patient as an individual, bearing in mind the available diagnostic and therapeutic facilities in the health care institution as well as the practical experience of the attending doctor.

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