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Human immunodeficiency virus infection in a child revealed by a massive purulent pericarditis mistaken for a liver abscess due to *Staphylococcus aureus*

Ngo Nonga Bernadette, N. Kamgaing[1], F. Monebenimp[1], C. Simeu[1]

ABSTRACT

Massive purulent andacute pericarditis in children is a life-threatening disease associated with high mortality. It has been described tocomplicate usuallya bronchopulmonary infectionbut is currently uncommon in the era of antibiotics. Acute and massive purulent pericarditis has been rarely reported in children in association with human immunodeficiency virus (HIV) infection. This is a case of a10-year-old boy who presented with signs of sepsis and cardiac tamponade due to a massive staphylococcal purulent pericarditis complicating an unknown HIV infection.The child underwent pericardiectomy, intensive treatment, and survived this life-threatening disease.

Key words: Immunodepression, massive, purulent pericarditis

INTRODUCTION

Massive purulent pericarditis is rare in children and has been described in association with pleuropulmonary infection due to streptococcus or staphylococcal infections.[1-3] Cases of purulent pericarditis have been reported in Nigeria but the disease is uncommon in Cameroonian children.[1,2,4] Chronic Pericarditis is quite common in human immunodeficiency virus (HIV) patients, it is usually haemorrhagic and may be associated with tuberculosis infection,[5] but massive purulent and acute pericarditis has been rarely reported in HIV infected children.We are reporting the case ofa 10-year-old boy who presented with sepsis and cardiac tamponade due to massive purulent pericarditis complicating an HIV infection transmitted by the mother.

Departments of Surgery, [1]Pediatry and Anaesthesia, University Hospital Centre of Yaoundé, Cameroon

Address for correspondence:
Dr. Ngo Nonga Bernadette,
Department of Surgery, University Hospital Centre of Yaoundé, Cameroon.
E-mail: ngonongab@gmail.com, ngonongab@yahoo.com

CASE REPORT

A 10-year-old boy was referred to our hospital for persistent fever, cough and weight loss for 3 weeks duration. He had previously consulted in a peripheral hospital where a chest X-ray was normal and a treatment for acute bronchitis was prescribed (thiamphenicol and clavulanic acid and amoxicillin).

On admission, he was conscious but in respiratory distress, with dyspnoea, and polypnea of 56 cycles/min, the heart rate was 108beats/min and temperature of 38.7°C. He presented a hepatomegaly, distended neck veins, and muffled heart sounds. He was admitted in the paediatric intensive care unit. A thoracoabdominal sonogram showed a left liver lobe abscess. A chest and abdominal computer tomography scan (CT scan) was requested to further characterize the liver abscess. It showed bilateral pleuropneumopathy, a diaphragmatic collection thru the larrey's aperture, hepatosplenomegaly, and minor ascites [Figures 1-4]. The amoebic serology was normal. He was placed on IV antibiotic (amoxicillin and clavulanic acid, and gentamicin). A review of the scan films made us

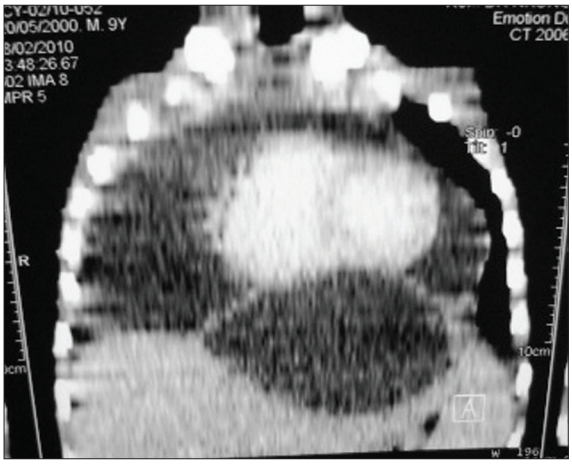

Figure 1: Sagittal view showing the heart surrounded by a massive pericardial effusion

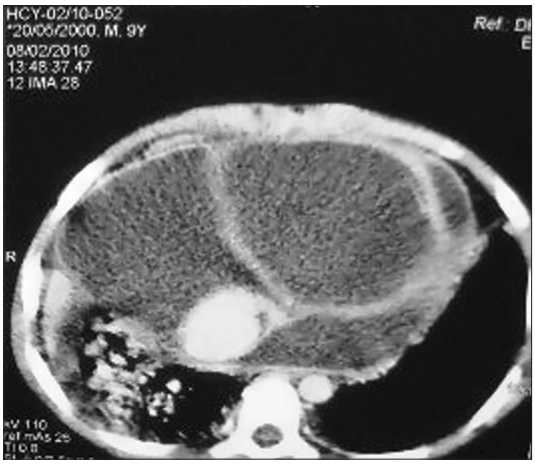

Figure 2: Massive pericardial effusion on a computer tomography scan view

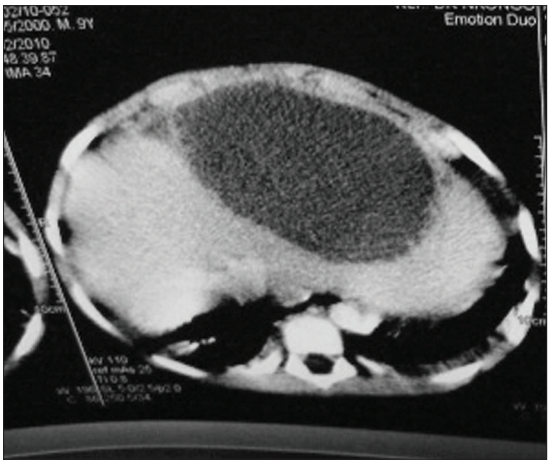

Figure 3: Pericardial purulent effusion confused with a liver abscess

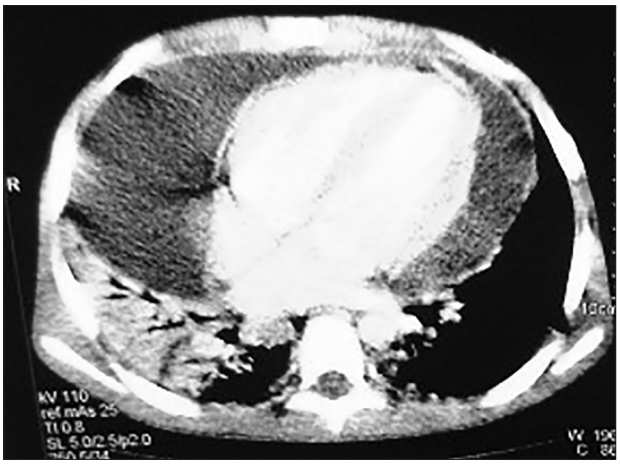

Figure 4: Transverse view at the level of the heart

suspect a pericardial effusion or amediastinal abscess. A rightmediastinal drainage was done and evacuated 500ml of frank greenish pus. There was no improvement with that regimen. The antibiotic was changed to ceftriaxone (100 mg/kg/24 h, metronidazole (mg/kg/24 h) and gentamicin (5 mg/kg/24 h). The child was further stabilized with a blood transfusion for severe anaemia. The evolution was marked by no improvement after 3 days and he was more ill, the preoperative American Society of Anesthesia (ASA) was in class V. He then underwent a thoracotomy and a pericardiectomy at day 4 from admission. Twolitres of frank pus were removed from the pericardium.Two drains were left in place. AT J3 after the surgery, he remained febrile, the culture of the pus growed *Staphylococcus aureus,* and the HIV serology requested after counselling of the mother was positive. Based on the antibiogram, gentamicin was stopped and ciprofloxacin was started. At J9 post-operatively the temperature subsided and the hemodynamic parameters improved, but there was a persistent purulent drainage. AT J13, he was stable, a corticotherapy was introduced to decrease the fibrosis and drains were removed. The chest radiograph showed a persistent bilateral lower lobe infiltrate and a mild cardiomegaly. The cardiac sonogram showed a thickened pericardium, but no pericardial effusion and no valvular anomaly. AT J24, he was discharged home with per os ciprofloxacin and iron treatment. The steroids were stopped. He was seen in the out-patient department 1 week after and was doing well. He was again seen 1 month after discharged. The confirmation HIV testing was still positive, the Cluster determination (Lymphocytes T4) [CD4] count was 14 cells/ml. He was placed on antiretroviral drugs associated to cotrimoxazole. The child was referred back to his hospital were the mother was a nurse. After counselling, the mother admitted being on antiretroviral treatment for many years.

DISCUSSION

Purulent pericarditis is an old disease which still carries a high mortality because it is associated with cardiac failure and sepsis. The clinical signs and symptoms presented by our patient are classical in cardiac tamponade associated with severe sepsis as it has been reported in children with massive purulent pericarditis.[1,2,4] The reported quantity of pus range from 0, 5 l to 1, 4 l of pus, in our case, we drained 2 l of pus from the pericardium. The infection may spread hematogenously or contiguously or secondary it may be secondary to a foreign body,[1-4,6] pneumonia, and empyema are the primary sources of these infections specially, in children. The most common germ reported are *Streptococcus* and *Staphylococcus*.[1,2,4,6,7] Massive purulent pericarditishave become a rare disease, since we have reported 41 cases oflife-threateningempyema in children treated surgically by decortication and none was complicated with pericarditis.[8] Pericarditis itself is not uncommon in Africa, most of these infections are chronic and secondary to tuberculosis, the main risk

factor remains immunodepression as found in acquired immunodeficiency syndrome.

The presence of cardiomegaly, with distended neck veins, and hepatomegaly in a septic child should raise the suspicion forpurulentpercarditisespecially, if the child presents signs of immunodepression.

The diagnosis was first missed and confused with one of the differential diagnosis which is an amoebic liver abscess; amoebic infection is common in our environment and has been associated with pericarditis.[9] But in this case, the serology was negative. The CT scan was misread as liver abscess [Figure 3] as this collection was bulging inside the left lobe of the liver, and it was believe that the liver abscess extended in the chest thru the Larrey's aperture; as liver abscess are frequent in Cameroon. The child was not known HIV positive, The HIV testing was requested because of the quantity of frank thick pusfounded around the heart as this is common in immune depressed patients. Although, pericardiostomy have been recommended,[1,2]pericardiectomy is necessary when pus is thick and massive as in our case.[4]

CONCLUSION

massive purulent pericarditis is quite uncommon, but may still be found in HIV infected children. It should be suspected in any child presenting with sepsis and signs of cardiac tamponade.

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