VOLUME-6, ISSUE-6, JUNE-2017 • ISSN No 2277 - 8160

Original Research Paper

Neurosurgery

Cerebral abscesses in HIV infection Era

Savadogo M	Department of Infectious Diseases in CHU YO
Zabsonré S	Department of Neurosurgery CHU YO
Sondo K. A	Department of Infectious Diseases in CHU YO
Thiombiano R	Department of Infectious Diseases in CHU YO

ABSTRACT

Introduction : Cerebral abscess are still a public health issue in developing countries. The objective of this study was to study the diagnosed brain abscesses in the Department of Infectious Diseases of the CHU YO.
Patients and method : It was a retrospective study that took place from 1 January 2011 to 31 December 2013 in the infectious diseases department of the Yalgado Ouédraogo CHU.
Results : During the study period, 644 patients were hospitalized in the infectious disease department and five brain abscesses were diagnosed with a computed tomography scan, representing a hospital prevalence of 0.8%. The abscesses were due to toxoplasmosis in three HIV-infected patients and to banal germs in two others (Staphylococcus spp and Escherichi coli). The therapeutic strategy consisted in the introduction of an adapted etiological treatment associated with neurosurgical decompression in two patients. The evolution was favorable in all the patients thanks to a multidisciplinary care.
The prevention of these abscesses requires the fight against HIV infection, correct care of meningitis and pathologies of the ENT sphere.

KEYWORDS : abcess, brain, HIV-infection, AIDS, toxoplasmosis

Introduction

Cerebral abscesses remain a public health issue in developing countries (11). They often complicate infections in the ENT domain (4,5,7,11), rarely the evolution of bacterial meningitis (3) but they may be opportunistic during dysimmunizing pathologies such as HIV infection. These are diagnostic and therapeutic emergencies. Despite the advances in imaging in their diagnosis and current therapeutic effectiveness, these suppurations represent severe prognostic disorders with high mortality, particularly in sub-Saharan Africa, where their diagnosis is often delayed (10). In the Department of Infectious Diseases, no study has focused on the issue hence this study which aims to study the cerebral abscess diagnosed in the Department of Infectious Diseases at the CHU YO.

Patients and method

Context of the study

The Infectious Diseases Department of the Yalgado Ouédraogo Hospital served as a context for this study.

Type of study

It was a retrospective cross-sectional and descriptive study that ran from January 1, 2011 to December 31, 2013. Were included patients diagnosed with cerebral abscess on clinical and CT arguments. Patients with cerebral abscesses were not selected but the records were unusable.

Data collection

The data were collected using a collection sheet.

Result

During the study period, 644 patients were hospitalized and five abscesses were diagnosed with computed tomography (CT); representing a hospital prevalence of 0.8%. Three patients were male against two female. Their age varied between 14 and 44 years, an average age of 28 years. Three patients were infected with HIV1. The TCD4 lymphocyte level ranged from 12 to 139 cells / mm^3, an average CD4 cell count at 55 cells / mm^3. The meningeal syndrome was present in three patients. It was made of an infectious syndrome and a cervical stiffness. Signs of encephalitis were present in two patients with impaired consciousness ranging from obliteration to coma with or without focusing signs. Lumbar puncture was performed in two patients. It was used to diagnose associated purulent meningitis in a patient. CT had been requested from all the patients; it allowed to objectify multiple abscesses in favor of cerebral toxoplasmosis in three patients infected with HIV. The bacterial etiology of the abscess was confirmed in a patient who had been isolated for *Staphylococcus spp and Escherichi coli*. The treatment of these abscesses necessitated the neurosurgical decompression of the abscesses in two patients and a treatment with cotrimoxazole base in three others. Antiretroviral therapy was based on Atripla, Tenofovir + Lamivudine + Lopinavir / ritonavir, and Zidovudine + Lamivudine + Efavirenz in all three patients. The comorbidities associated with abscesses were represented by HIV infection, orbital cellulitis, tuberculosis, purulent meningitis and viral hepatitis B. Evolution was favorable in all patients thanks to multidisciplinary care.

Discussion

With the progress in antibiotic therapy, endocranial suppurations have become relatively rare but potentially severe (5, 6, 13). All patients infected with HIV were severely immunosuppressed. Indeed, the literature reports that 40% of endocranial complications are promoted by immunosuppression (8,9). Orbital cellulitis has been the gateway to the abscess in a patient. In the absence of urgent treatment of cellulitis, these may develop secondarily to a cerebral abscess or meningitis (12). *Staphylococcus spp and Escherichia coli* were isolated from a patient corroborating the findings of Loembe et al. (10). Cerebral toxoplasmosis was diagnosed in three severely immunocompromised HIV-infected patients (1). It is indicative of either a failure of antiretroviral treatment or of delay in initiating antiretroviral therapy (1). The diagnosis of abscesses was based on cerebral computed tomography (CT), which had demonstrated multiple brain abscesses in the majority of our patients, corroborating observations made in Morocco (2,13). The optimal therapeutic strategy for these abscesses is the introduction of an appropriate etiological treatment, possibly associated with neurosurgical decompression of the expansive lesions, either by aspiration or by craniotomy. This strategy requires close multidisciplinary collaboration between the neurosurgeon, the infectious disease specialist and the microbiologist (9,10).

Conclusion

With a hospital prevalence of 0.8%, cerebral abscesses are rare but dominated by cerebral toxoplasmosis in the infectious disease department. They constitute medico-surgical emergencies. Their diagnosis is improved by computed tomography. Their prevention involves correct care of the pathologies in the ENT domain, the fight against the causes of immunosuppression and the correct treatment of meningitis. Sensitization of populations on HIV screening and regular follow-up of patients on antiretroviral therapy will help avoid the abscessed forms of cerebral toxoplasmosis which are dangerous complications in AIDS.

References

1) Balogou AAK, Volley KA, Belo M, Amouzou MK, Apetse K, Kombate D, Grunitzky EK. Mortality of HIV positive patients in the Neurology Department in Lomé Campus CHU-Togo. African Journal of Neurochirurgical. 2007 ; 26(1) : 27-32.
2) Benjelloun-Dakhama B.S, Madani AE, Hassani AE, Mahraoui C, Benchekroun S, Jorio M, El Harim L, El Malki-Tazi A. Brain abscess among children. About 25 cases. Medicine and Infectious Diseases. 1999 ; 29(6) : 395–400.
3) Brisou P, Chamouilli JM, Gaillard T, Muzellec Y. Pneumococcal infections. Medico-Surgical Encyclopedia. 2004 ; 4-260-B-10.
4) CMIT. Brain Abscess. In E. PILLY: Vivactis Plus Ed; 2012: pp 212-213.
5) Dao M, Ouoba K, Kabré M, Sanou B, A Sanou. Complications of sinusitis in hospitals in an ENT Department in Ouagadougou (Burkina Faso). Burkina Med.1998 ; 2 (2) : 69-73.
6) Eholie SP, Boni N, Aoussi E, Konan A, Orega M, Koffi Adonis L, Ba Zeze V, Bissagnene E, Kadio A. Neurosurgical complications of purulent meningitis in tropical areas. Neurosurgery. 1999 ; 45 (3) : 219-224.
7) Floret D, C. Dumont. Neurological complications of otitis. Medicine and Infectious Diseases. 1988 ; 18(2) : 486–492.
8) Harrabi H, Lahiani D, Elleuch E, Marrakchi C.H, B. Hammami, Maâloul I, M. Ben Jemâa. Place of phenicolates in the treatment of neuromeningitis infections. Study of 37 cases. Medicine and Infectious Diseases.2009; 39(1) p48 .
9) Hitoshi HMD, David KW. Central Nervous System Infections: Meningitis and Brain Abscess. Infect Dis Clin.2009; 23: 609–623.
10) Loembe PM, Okome-Kouakou M, Alliez B. The collected intracranial suppurations in Africa. Tropical Medicine 1997;57(2) :186-194.
11) Sarrazin JL, Martin-Blonde G. Cerebral infections. Journal of Diagnostic and Interventional Radiology.2012; 93(6) : 503–520.
12) Tahiri JIH, Rqibate S , Ouarrach N, Mohad J, Madaidou N, Bennis O, Bada H, Elbelhadji M, Chakib A, Rachid R, Zaghloul K, Amraoui A. Orbital cellulitis in adults: about 31 cases, Journal Français D'Ophtalmologie - J FR OPHTALMOL. 01/2009; 32.
13) Tattevin P. Cerebral abscesses: Clinical bacteriology and treatment. Antibiotics. 2003 ; 5(4) :191-197