

HEPATIC AMOEBIASIS WITH PLEUROPULMONARY INVOLVEMENT : A RARE ASSOCIATED CONDITION

GUEYE D, TRAORE M M, NDOYE N A, MBAYE P A, WELLE I B, SECK N F, SAGNA A, NGOM G.

Albert Royer children hospital center, Dakar, SENEGAL

ABSTRACT

Pleuro-pulmonary amoebiasis is the most common involvement after hepatic and intestinal localisations. We report the case of a two-year-old and half child who presents a hepatic amoebiasis with pleuro-pulmonary involvment confirmed by amoebic serology.He underwent a drainage and an antibiotherapy based on Metronidazole. The outcome was favorable under adequate treatment.

Keywords : NIL

No : of Figures : 02

No : of References : 14



INTRODUCTION

Amoebiasis is an infectious disease caused by a bloodsucking protozoan known as *Entamoeba histolytica*. It describes a dysenteric clinical course. Besides gastro-intestinal involvement, the parasite can affect other organs [1]. Pleuro-pulmonary involvement is the most common extra-intestinal concern after the hepatic ones. Exclusive pulmonary amoebiasis remains uncommon, even in endemic regions. The frequency of the association ranges from 0,54% to 1,7% [2].

We share a case of a featuring condition of liver amoebiasis with pulmonary involvement that affects a 2-year-old and half child posited on the basis of radio-clinical findings and the positivity of amoebic serology.

OBSERVATION

It was about a two-year-old and half child, admitted for the management of right basithoracic and hypochondrium pain, associated with a productive cough with muco-purulent sputum. This clinical feature had been evolving for 2 weeks. We noted a past medical history of diarrhea that occurred 3 weeks ago managed by a symptomatic treatment.

The clinical examination revealed a fever at 39,6°C. Abdominal palpation showed a painful right hypochondrium. Pleuro-pulmonary examination found a basal right fluid pleural effusion featuring stony dull sound, low vocal resonance and breath sounds. Biological findings showed hyperleucocytosis at 26.000/mm³ with lymphocytosis, a positive CRP at 116mg/l with unremarkable liver disorder. Parasitic stool examination was negative. Standard thoracic X-Ray revealed a rounded homogenous opacity of the right basal lung. The ultrasound pointed out a collection of 170cc straddling segments VII and VIII measuring 66/67/72 mm and a right pleural collection. The thoraco-abdomino-pelvic CT showed a pulmonary abscess of 34/25mm and a hepatic abscess of segments VII and VIII (figures 1 and 2). Amoebic serology by passive haemagglutination was positive at 1/2560 UI. He underwent an ultrasound-guided drainage and a 10-day antibiotherapy based on metronidazole at a dosage of 30mg/kg was conducted. The outcome was favorable and featured the offset of the clinical and imaging (X-Ray and Ultrasound) signs, CRP and white blood cell turned back to the normal rate.



Figure 1: Abdominal CT-Scan : cross-sectional image showing the hepatic abscess (arrow)



Figure 2: Abdominal CT-Scan : cross-sectional image showing the pulmonary abscess (arrow)

DISCUSSION

An expert case-report on amoebiasis, directed by WHO in 1997 down Mexico, defined this parasitic condition as a state in which the human body host the protozoan *Entamoeba histolytica* regardless clinical manifestations [2]. It is a cosmopolitan condition known to be the third most common cause of parasitic related mortality after malaria and schistosomiasis [3].

Pleuro-pulmonary amoebiasis is the most common extra-intestinal infectious pattern after liver amoebiasis [4].

Pleuro-pulmonary amoebiasis generally occurred after liver amoebiasis condition through intra-thoracic way, either by trans-diaphragmatic spread by diffusion or by effraction in free pleura or stucked pleura, either by vascular spread by venous effraction [5].

Two patterns are identified such as non-specific (diaphragmatic cupola elevation, pleural effusion) and specific manifestations : abscess, purulent pleural effusion that could be worsened with chololate vomiting, unresponsive

antibiotherapy pneumopathy causing a high mortality and morbidity [1].

The clinical course of non abscessed amoebic pneumopathy is slightly different to a banal pulmonary infection. Hemoptysis and rusty colored sputum are common. A syncopal pain revealed by the shaking of the right hypochondrium is evocative. However, the absence of gastro-intestinal manifestations doesn't rule out the diagnosis because more than 70% of the patients affected by extra-intestinal amoebic location have never run a diarrhea [6,7].

Ameobic abscess, a very rare condition, occurred more or less acutely. For our patient, the amoebic etiology was conjured up according to the preferential right-sided location, fever, and especially the mucopurulent vomits. The radiological approach reveals a cavitary or air-fluid image that is sometimes large attached in a pulmonary infiltrate. Pyogen surinfection of the abscess is frequent if treatment is not administrated [6,10].

Regarding the pleuro-pulmonary involvement, the diagnostic methods are mainly based on serological investigations [6]. Stool parasitology examination can be negative in case of tissue amoebiasis, as we noted for our patient. The most reliable method for specific antibodies detection relies on indirect immunofluorescence [8] and is often associated to indirect hemagglutination. Immune response occurs between the 1st and the 4th week after infestation. The antibodies serum levels gradually decrease in 6 to 12 months under treatment, however sometimes we note their persistence for many years after treatment [7]. At this moment, it is estimated that if the positivity of serological techniques is moderate and not regular in case of intestinal amoebiasis, false-negatives are rarer in tissue amoebiasis. Therefore, for our patient, the fact of a previous intestinal amoebic condition didn't allow to clearly set apart a serological sequellae from a tissue amoebiasis if we could not have an hemagglutination levels of 1/800. The presence of elevated serum antibodies is a predictive argument for amoebiasis.

During amoebic pneumopathy, X-ray findings show a well-defined or not opacity of the right lung, band-like consolidation of the right base. It rarely finds cannonball-like images or atypic locations (right proximal lobe, left-sided lung) related to haematogenous spread [9]. Radiological findings during amoebic pulmonary abscess feature a cavitary or air-fluid image, that can be large, attached on a pulmonary infiltrate. Pyogenic infection of the abscess is common if treatment is not conducted [9,10]. The radiological aspect reported in

this paper is evocative for an abscess. The first line therapy of amoebiasis infection is medical approach and is based on tissue amoebicide (metronidazole, ornidazole, secnidazole) eventually associated to contact amoebicide (difetarsome, tiliquinol + tilbroquinol) [6,11]. Surgical treatment (pulmonary decortication, pleuro-pulmonectomy, transabdominal or trans-diaphragmatic hepatic drainage) is indicated for suppurated cavity and sequellae management (pachypleuritis, chronic abscess, broncho-pleural or broncho-hepatic fistulas...) [12].

For our patient, it's important to highlight the responsive « test of treatment » with metronidazole, after performing the drainage.

Because of non-available vaccine, prevention in endemic areas is based on fighting against faecal peril by improving sanitary and hygiene conditions (water control and faecal hygiene) and insisting on health education (washing hands, fruits and raw eaten vegetables). Up-to-date, the prophylaxis relies only on food hygiene and health education to prevent fecal-oral contamination. There is no reliable chemoprophylaxis [13].

CONCLUSION

Any right basal pleuro-pulmonary infectious condition should raise a degree of suspicion of pleuro-pulmonary amoebiasis especially when it follows an amoebic liver abscess. The serological tests, by their high specificity, give an efficient diagnostic approach.

REFERENCES

F. Dubut, D. Benhamou, N. Kouziaeff, J.-F. Muir Infection respiratoire à *Entamoeba histolytica* *Revue des Maladies Respiratoires* 2000;17(4):878.

Koffi N, Ngom A, Kouassi B, Aka-Danguy E. Amibiase pleuro-pulmonaire. Contribution à l'étude en zone d'endémie. *Médecine et Armées* 1997;25:473-477.

Edouard B., Bohand X., Maslin J. Médicaments des infections à protozoaires (paludisme exclu). *Encycl. Med. Chir, Maladies infectieuses* 2005;15:8006.

Mbaye PS, Koffi N, Camara P, Burgel PR, Hovette P, Klotz F Manifestations pleuro-pulmonaires de l'amibiase. *Rev Pneumol Clin* 1998;54:346-52

H. Rachid, A. Alaoui Yazidi, F.Loudadssi, M.El Biaze, A.Bakhtar, N.Yassine, A EL Meziane, A Bahlaoui. Les atteintes pleuropulmonaires à *Entamoeba histolytica*. *Revue des Maladies Respiratoires* vol 2005;6(22)

Aubry P. Amibiase *Encycl. Med. Chir. Thérapeutique.* 1994;25-062-A-10

B RUCKNER DA. Amebiasis. *Clin Microbiol Rev* 1992;5:356-69.

R AVDIN JI : Amebiasis. *Clin Infect Dis* 1995;20:1453-66.

F UJIHARA T, N AGAI Y, K UBO T, S EKI S,

S ATAKE K. Amebic liver abscess. *J Gastroenterol* 1996;3:659-63.

PENE P, N OSNY Y, E STERNI JP. Affections exotiques du poumon et parasitoses pulmonaires. *Encyclopédie médico-chirurgicale Poumon*, 6003 L9-198 ;9:13-9.

SHARMA OP, M AHESHWARI A. Lung diseases in the tropics. Part 2: common tropical lung diseases : diagnosis and management. *Tubercle Lung Diseases* 1993;74:359-70.

B RUCKNER DA : Amebiasis. *Clin Microbiol Rev* 1992;5:356-69.

C HUAH SK, C HANG -C HIEN CS, S HEEN IS, L IN HH, C HIOU SS, C HIU CT, K UO CH, C HEN JJ, C HIU KW. The prognosis factors of severe amebic liver abscess: a retrospective study of 125 cases. *Am J Trop Med Hyg* 1992;46:348-402.

Blessmann J, Van Linh P, Nu PA, Thi HD, Muller-Myhsok B, Buss H, et al. Epidemiology of amebiasis in a region of high incidence of amebic liver abscess in central Vietnam. *Am J Trop Med Hyg* 2002;66:578-83.