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Congenital tuberculosis: first case proved and reported in Madagascar

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ABSTRACT

Background: Tuberculosis remains a major problem of public health on a global scale. The congenital form is rare. In Madagascar, where is an endemic tuberculosis focus, no case was published. In this paper we report the first proved Malagasy congenital tuberculosis case. This is a preterm (29 weeks of gestation) who presented the 20th day of his life a febrile respiratory distress which has not improved under empirical antibiotic therapy. But due to the presence of scenography lesions in favor of tuberculosis -in the case (infant)- and a maternal radiological miliary objectified at the 8th month of pregnancy (discovered during the exploration of a chronic cough by her doctor but neglected), a direct examination of gastric aspirate liquid was performed and positive income for acid-fast bacilli (AFB). The evolution was fatal after two months of antituberculosis.

Keywords: *congenital tuberculosis, preterm infants, Madagascar*

Introduction

The congenital form is rare. It is estimated to be 2% in the country with high tuberculosis endemicity [1]. It is a serious pathology with a dark prognosis because the mortality can go up to 50% [2]. Congenital tuberculosis is often secondary to infection during pregnancy of the placenta, amniotic fluid or genital tract . Most newborn infants were prematures and hypotrophics [3]. We report the case of congenital tuberculosis of a preterm infant whose mother was suffering from tuberculous miliary.

Observations

It is a male infant, prenatal coverage was high, pregnancy estimated at 29 weeks of amenorrhea and his mother was primigravida. The delivery was carried out by vaginally way without incidents with immediate cry. At birth weighing was 1700g. The infant was delivered from a mother with a clinically (chronic cough with persistent fever one month before delivery) and radiologically tuberculosis miliary (bilateral and symmetrical diffuse micronodular opacity) (Figure 1). He -The baby- had been incubated since birth. From the 20th day of life, he began to devlop respiratory distress characterized by cyanosis, flutter of the nose's wings , use of accessory respiratory muscles. He remained hypotrophic with stagnation at 1700 g. Despite the probabilistic antibiotic therapy (ceftriaxone 170 mg / d) the respiratory signs persisted. The thoracic CT scan (Figure 2) found diffuse nodular images of two pulmonary fields suspected of tuberculosis. The search for acid-fast bacilli (AFB) in the infant's gastric suction fluid was positive. The infant was separated from hir mother, benefited from artificial feeding and an oral tuberculosis treatment with isoniazid: 9 mg daily, rifampicin: 17 mg / day and pyrazinamide: 51 mg / day for two months followed by rifampicin and isoniazid for four months (regimen 2 RHZ / 4 RH). Evolution was unfavorable due to the occurrence of death in a cytolysis context after one month of tuberculosis treatment.

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It should be noted that his mother was seen by her attending physician a month before delivery for a coughing and persistent fever without dyspnea nor alteration of the general state whose radiography carried out at the time regained micro nodular opacities Diffuse.

Miliary tuberculosis has not been treated by her physicien.

And she was placed under anti tuberculosis by another confrere at a distance from the confinement and before the aggravation of her clinical condition.

HIV serology was negative. She also received tuberculosis treatment for 6 months according to the national program against tuberculosis in Madagascar with 2 months of isoniazid, rifampicin, ethambutol and pyrazinamide followed by 4 months of rifampicin and isoniazid. Its evolution was favorable.

In all, the diagnosis of congenital tuberculosis was retained given the radiological image of miliary in the context of febrile stat for the mother improving getting better under anti tuberculosis, given the clinical and scanning symptoms presented by the infant and the positivity of the research of BAAR (Bacillus Acido Alcoholo resistant) in gastric suction fluid.

Discussion

Congenital tuberculosis is a rare form with about 300 cases reported in the literature, but most likely underestimated, especially in Madagascar where tuberculosis is still endemic. [4]. Diagnostic criteria for congenital tuberculosis, proposed by Cantwell and al [5] in 1994, require the presence of bacteriologically confirmed tuberculosis lesions and at least one of the following: Tuberculosis manifestations during the first week of life, specific hepatic granulomatous lesion, tuberculosis of the placenta or genital tract of the mother, the exclusion of possible postnatal transmission.

The latter criterion involves the separation of the child from his mother at birth to avoid the contamination of the child by those around him. However in Africa, breastfeeding has an important vital place which makes this separation virtually impossible. This explains the difficulty of differentiating post-natal tuberculosis than congenital tuberculosis.

There are two possible modes of contamination which determine two types of pathological changes in the newborn. Either the contamination is hematogenic and leads to liver damage via the placenta and umbilical vein. Either this contamination is amniotic: a placental tuberculosis focus of hematogenic or endometrial origin (maternal tuberculosis endometria) can open in the amniotic cavity and contaminate the fetus throug his digestive (after deglutition) or pulmonary (after inhalation) way. In our case, we know that mother have miliary tuberculosis, but we have not had any evidence for the tuberculosis involvement of the placenta or the genital tract. Therefore, should the diagnostic criterion of congenital tuberculosis be changed?

Diagnosis is difficult when maternal disease is unknown, which explains the mortality rate of 50% [2]. In preterm infants, the diagnostic difficulty is compounded by an aspecific clinical picture that can be attributed to the complications of prematurity. They may be present at birth, but in the majority of cases symptoms occur within the first two to three weeks of life [6, 7, 8]. For the diagnosis of congenital tuberculosis, the Intradermo Reaction to tuberculin (IDR) should be performed even if it generally remains negative during the first six weeks of life [1,9]. In the newborn, any induration is considered a positive test. Chest x-ray shows a miliary image in 50% of cases, parenchymatous infiltrates, adenopathies and exceptionally cavitation. Our case was nodules in the baby and micronodule in the mother. The examinations to be performed at the time of delivery in the case of active maternal tuberculosis discovered at the end of pregnancy are: the search for Bacille de Koch in the placenta, amniotic fluid, ear canal, gastric fluid, urine and cerebrospinal fluid, And pathological examination of the placenta [8]. The case that we

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The case that we have managed has been presented in a way compatible with what is described in the literature: prematurity, aspecific symptoms, appearance of symptoms on day 20 (close to that reported in the literature (15 to 30 days). Congenital tuberculosis is also a form of discovery of latent maternal tuberculosis, especially genital tuberculosis. In 75% of cases of congenital tuberculosis, the mother was asymptomatic mainly in the case of genital tuberculosis [3, 10, 11].

n this case, delay in diagnosis decreases the chances of survival of the newborn [1, 4]. The treatment of congenital tuberculosis depends on the national protocol. For our case, treatment was rifampicin, isoniazid and pyrazinamide for 2 months and rifampicin-isoniazid for 4 months. The absence of a consensual therapeutic protocol and especially the rarity of galenic form of antituberculosis in children constitute an obstacle to treatments. These factors can contribute to the rising mortality rate in addition to the severity of the disease. The evolution was often fatal as in our case even under treatment. In Sub-Saharan Africa [12, 13] 33% of cases of tuberculosis in newborn infants evolve towards death. In some literature [4, 14], the mortality rate was of the order of 22 to 50%. Given this situation, screening for tuberculosis during pregnancy is the best way to reduce the mortality rate and to avoid delays in taking care of them. In our country, isoniazid is indicated to any exposed child.

Conclusion

Congenital tuberculosis is still rare and has a dark prognosis. Its prevalence was high in countries with high TB endemicity. In Madagascar, the exact prevalence still unknown. In most cases, prematurity is the consequence of maternal tuberculosis. This explains the lack of specificity of clinical signs often overlaid with the sign of prematurity. The risk of mortality is always high even in case of adequate treatment. The detection and treatment of maternal tuberculosis is essential to prevent congenital tuberculosis.

Conflict of interest:
The author(s) declare(s) that there is no conflict of interest

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Figure 1: *Postpartum chest scan of the baby's mother showing diffuse bilateral and symmetric diffuse micronodular opacities*

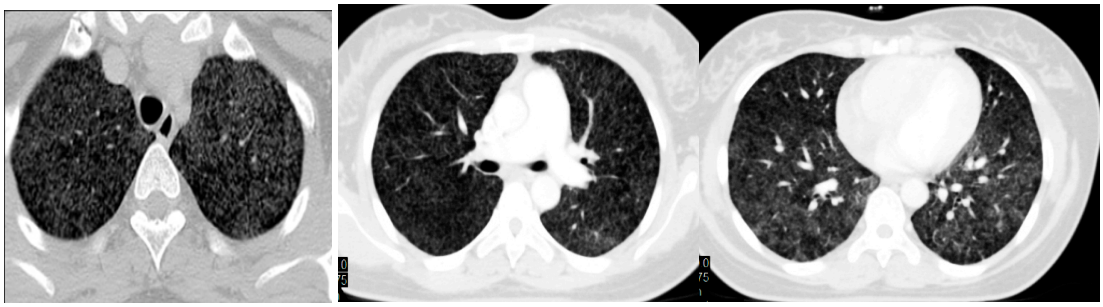
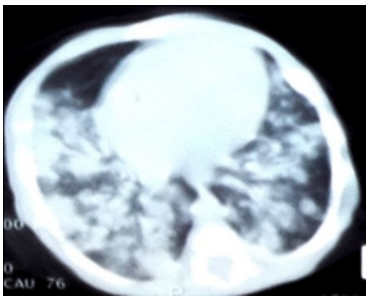


Figure 2: *newborn's thoracic scan showing diffuse and confluent nodules, bilateral*



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