

A Case of Congenital Tuberculosis in a Tertiary Care Hospital

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Abstract

Congenital tuberculosis is an unusual and severe clinical presentation of Mycobacterium tuberculosis (MTB) infection. It is usually difficult to diagnose and treat. We report a ten-week-old male infant who had presented with fever, difficulty in breathing, abdominal distension, convulsion, low weight gain since one month of his age. The diagnosis was made by demonstration of MTB bacilli in the gastric aspirate of baby and chest radiography. Treatment with the four drug regimen including streptomycin was initiated, but the baby died on the third day of ATT. This case gives an account of difficulties in diagnosis and therapeutic management of congenital tuberculosis and alerts for development of protocols that foresee these difficulties.

Key words: Congenital tuberculosis, Gastric aspirate

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Introduction

Congenital tuberculosis is considered when infection with tubercle bacilli takes origin either during the intrauterine life or before complete passage through birth canal.¹ Infection has clinically been thought to be acquired in three ways: (a) transplacentally, with primary complex in liver, (b) aspiration of infected amniotic fluid during passage through birth canal, when lungs are primary foci and (c) ingestion of infected materials where the primary focus is the gut. The diagnosis of the disease is missed due to the difficulties in performing the diagnostic tests which are mostly invasive. Despite high prevalence of tuberculosis in the world, only 300 such cases have been reported so far in literature.² Here we are reporting a case of congenital tuberculosis.

Case Report

A 10-week-old male infant had presented with fever, a progressively worsening state of dyspnoea, abdominal distension, anaemia, low weight gain since one month of his age. When the infant was two months of age, he developed several episodes of convulsion. He was born to a 32-year-old, first gravida mother at home by normal vaginal delivery and the patient was healthy at birth. The baby was exclusively breastfed. Initial chest radiography showed patchy opacity on left lung field. He was shown to several physicians and had received several antibiotics without improvement. Mother was on irregular antenatal check-up. She had been suffering from cough for three months in last trimester of pregnancy and was diagnosed as a case of pulmonary tuberculosis.

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Antitubercular treatment (ATT) was initiated after the diagnosis was confirmed. However, following diagnosis she failed to take the prescribed medicines. On examination, weight of the baby was 2.8 kg, length was 48 cm and head circumference was 37 cm. BCG mark was not noticed. The infant was lethargic and moderately pale, had poor peripheral perfusion and bulged fontanel. Respiratory system examination revealed respiratory rate 80 breaths/min with subcostal and intercostal indrawing, decreased air entry over left side of lungs with bilateral crepitations. There was hepatomegaly. Other systemic examinations revealed no abnormalities. Tests carried out were complete blood count, liver function tests, HBsAg, blood culture, cerebrospinal fluid study and culture, purified protein derivative, gastric lavage for *M. tuberculosis*, serological investigations for HIV, toxoplasmosis, cytome-galovirus, herpes virus 1 and 2. Investigations showed hemoglobin 7 g/dL, total leucocyte count 12,300/cumm with 68% neutrophils and platelet count 150,000/cumm. Chest radiography showed miliary pattern (Fig 1). CSF study was suggestive of tubercular meningitis. Abdominal ultrasonography revealed hepatosplenomegaly with increased echotexture of the liver. Gastric lavage was positive for acid-fast bacilli on 3 consecutive days. All other tests were negative. The child was initially treated with antibiotics but did not show any improvement till 4th day of hospital stay. Then ATT was started using four drug regimen, but the baby died on third day of ATT.

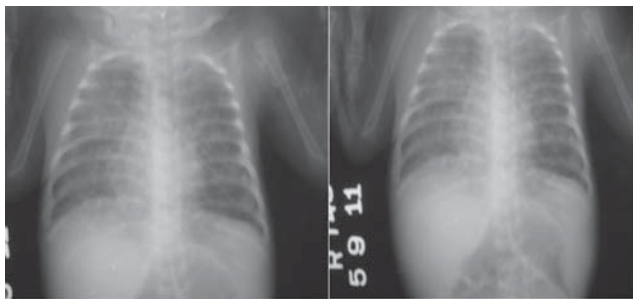


Fig 1. Miliary shadows all over the both lung fields

Discussion

Congenital tuberculosis is a rare disease. It is fatal if untreated. Early detection is difficult because of the nonspecific nature of symptoms during pregnancy and infancy.³ Despite the high incidence of tuber-

culosis in women of reproductive age, the incidence is estimated at only 2% because of subclinical forms of the disease during pregnancy, and the lack of adequate prenatal care in countries with a low development rate. Some authors believe that under-notification of cases could explain this low incidence.⁴ The appearance of AIDS has contributed towards an increase in the incidence of the disease, thereby increasing the risk of congenital tuberculosis. Although the incidence is low, congenital TB is generally a serious manifestation with a mortality rate of 22% among patients receiving chemotherapy.⁵

The patient described here was typical with respect to his age at presentation and the nonspecificity of symptoms and radiographic findings. In 1935, Beitzke proposed the following criteria for diagnosis: (i) tuberculosis must be established by isolation of *M. tuberculi* in an infant, (ii) primary complex must be demonstrated in liver as a proof of dissemination of tubercular bacilli from umbilical vein, (iii) if primary complex is not demonstrated, then tubercular lesion must be present in neonate within few days of birth and postnatal infection must be excluded.⁶ Our patient fulfilled criteria (i) and (iii) as MTB was demonstrated in the gastric aspirate of baby and the lesion was found in the chest radiograph.

It is difficult to reach an aetiological diagnosis according to severity or using the available means, since PPD is negative in the first four weeks of the disease, and sputum microscopy and cultures are frequently negative. However, the possibility of the presence of this disease should always be considered. In 1994, Cantwell et al proposed a new set of diagnostic criteria. These are (i) lesion in infant in first week of life, (ii) primary hepatic complex or caseating hepatic granuloma in the infant, which may be demonstrated by liver biopsy, (iii) tubercular infection of placenta or maternal genital tract and (iv) exclusion of postnatal transmission.⁵ These criteria increase diagnostic sensitivity, leading to earlier initiation of therapy. However, this diagnosis is often difficult since confirmation of the primary complex or detection of granulomas in the liver has to be carried out by biopsy, which is not always available in some healthcare centres, or at autopsy. Reduced positivity following initiation of treatment should also be shown.⁵ Treatment of congenital tuberculosis consists of standard ATT regimes.

This case illustrates some important obstacles that exist in the management of this disease, such as inadequate epidemiological surveillance for the management of pregnant women with tuberculosis; negligence with respect to early diagnosis (examination of the placenta and amniotic fluid, lack of referral of the newborn to a specialized healthcare service) and the consequent delay in diagnosing the disease; and difficulty in treatment due to dissemination of the disease. Therefore, these are important issues that have to be taken into consideration to diagnose the cases correctly and to improve the efficacy of therapy of this fatal disease.

Conclusion

Difficulties in diagnosis of congenital tuberculosis points to the need to develop specific protocols to deal with this rare but fatal disease. Congenital tuberculosis should be considered to be included in the Revised National Tuberculosis Programme to reduce maternal and infant morbidity and mortality.

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