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Medicine

COMPLICATION OF TUBERCULOSIS IN THE INFANT

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ABSTRACT:
TUBERCULOSIS IS A DISEASE PRESENT IN A LEADING POSITION IN WHO ANNUAL STATISTICS. INFANT AGE IS SPECIAL IN TERMS OF SOMATIC EVOLUTION AND ANTI-INFECTIOUS DEFENCE.
THE INFECTIONS MAY HAVE SEVERE PATTERN, AS LONG AS THE DISSEMINATIONS ARE MORE FREQUENT IN THE CHILD THAN IN OTHER AGES.
THE CASE PRESENTED REFLECTS A MAJOR COMPLICATION OF PULMONARY TB, THE OCCURRENCE OF NEUROLOGICAL DETERMINATIONS BEING A PECULIARITY OF SMALL AGE.
THE RISK OF CHIMIORESISTANCE INDICATES POLICHIMIOTHERAPY IN TRIPLE OR QUADRUPLE ASSOCIATION FOR 9 MONTHS, WITH CEREBRAL EDEMA BEING TREATED IN TURN.
THE ANAMNESIS IS VERY IMPORTANT FOR THE DISCOVERY OF POSSIBLE INFECTION WITH THE BK BOVIUM FORM, THE RECOVERY OF THE INFECTIOUS OUTBREAK HAVING THE SAME IMPORTANCE AS THE CORRECT TREATMENT OF THE DISEASE.

KEY WORDS: TUBERCULOSIS, NEUROLOGICAL AFFECTION.

Tuberculosis is a bacterial infection with endemic evolution caused by etiological agents called the "Mycobacterium tuberculosis complex" comprising 3 species - M. tuberculosis, M. bovis, M. africanum[7]. Romania, unfortunately remains the top European leader in spreading the disease. Practically, the location may be extremely polymorphic, the

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pulmonary site is responsible for the dissemination of the disease, but there are extrapulmonary sites in the pleura, lymph nodes, joints, spine, genitourinary system, CNS, abdomen[8]. The tuberculous host-bacillary relationships have histopathological and immunological features that explain the different evolution of the disease in different patients[9].

The World Health Organization (WHO) publishes global TB data including new and relapse cases by age. In its 2018 report, the WHO estimates that of the estimated 10 million incident cases of TB in 2017, approximately 1 million (10 percent) occurred among children <15 years; similar numbers of boys and girls were affected[10]. In 2018, the WHO estimated that there were 234,000 deaths due to TB in children <15 years (40,000 occurring in HIV-infected children)[11]. These deaths represent 15 percent of all TB deaths (which is higher than the estimated proportion of cases in children), suggesting a higher mortality rate in this age group[12].

Intracranial tuberculomas occur in 13% of children with neurotuberculosis[13]. Brain tuberculomas are generally asymptomatic[14], but their symptoms depend largely on their anatomical location[15], with seizures being the commonest presenting symptom[16]. Clinical presentations are due not to tubercle bacilli or their antigens but to pressure effects of space-occupying lesions[17].

Diagnosis of TBM based on clinical history and examination findings, cerebrospinal fluid (CSF) findings and tomography of brain. CT scan has been proved helpful in diagnosis and evaluation of the complications of TBM.

Due to the peculiarities of the age, rapid growth rate, immunity in consolidation, infant age, tuberculosis is prone to severely potential infection[18].

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CLINICAL CASE

A 7 months old baby admitted to the clinic for altered general condition, rhinorrhea, wheezing.

Anamnesis. It is the third child of the family born in term, G = 3500g, Agar = 9, naturally fed 3 months, subsequently with cow's milk, prophylaxis of incomplete rickets performed, neonatal physiological jaundice, incomplete vaccination (in maternity and 2 months).

Hereditary chronic history did not mention chronic illness among family members, despite poor socio-economic status.

The child presented with two bronchiolitis episodes at 2 and 3 month and several treated episodes of acute upper respiratory infections.

The objective exam assessed an influenced state of health, pale, poor nutritional state, coughing, wheezing, expiratory dyspnea, FR = 40 per minute, right paravertebral subcrepitant rales, rhythmic heart sounds, AV = 100b / min, inflammated pharyngx, abdominal bloating, persistent skinfold, liver at 1.5 cm under below the rib cage, reduced urinary output, normal stool, anterior fontanelle sunken = 2 / 1.5 cm, dry lips, sunken eyes, patellar reflex, skin reflexes, neurological development corresponding to age.

The initial diagnosis was: Acute Viro-Bacterial Pneumonia, Secondary IRA. Acute rhinopharyngitis. Dystrophia gr. I. Acute renal insufficiency (prerenal), Acute dehydration syndrome 5%. Intrainfectious anemia.

Laboratory test showed leukocytosis (L = 16,800 / mm3), anemia (Hb = 10,8%), Lymphocyte (= 68%), Neutrophil= 21%, Monocyte = 8% Eosinophil = 3%, ESR=15 / 30mm / h. The liver, kidney tests have normal values, the ionogram shows acidosis, hypoglycemia (Glycemia = 55mg / dl), hyponatremia (Na = 129mEq / l), SaO2 = 91%.

Pulmonary radiography - condensation in the right pulmonary region (figure 1).

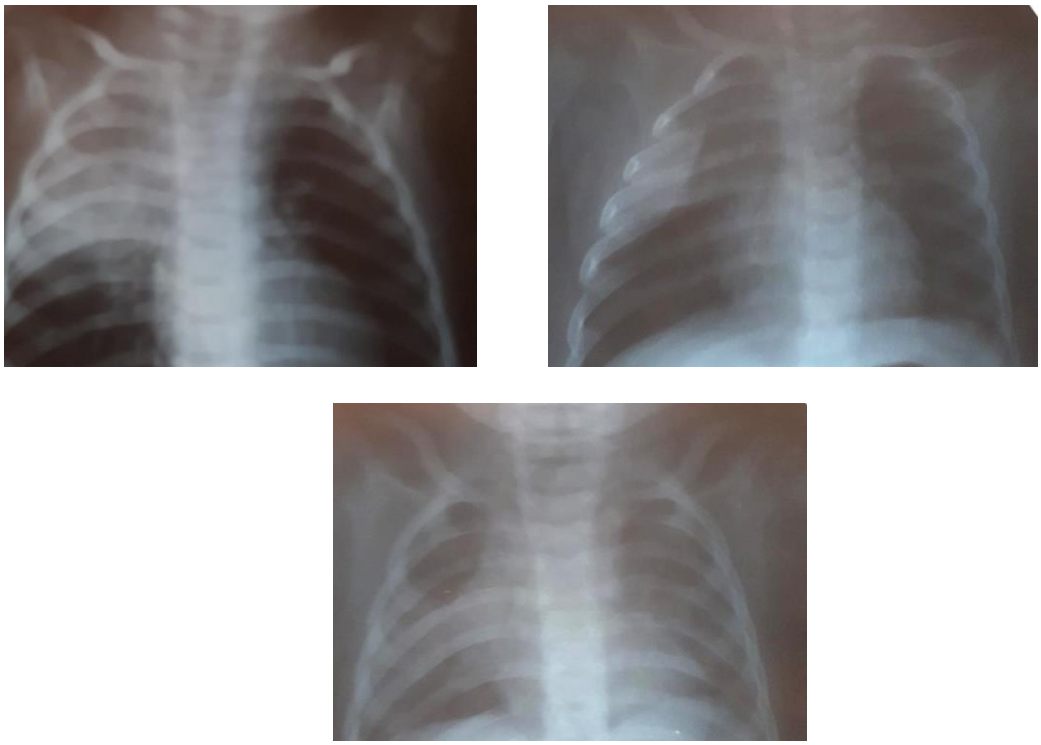

Fig. 1 Evolution under treatment

Antibiotic treatment (cephalosporins), hydroelectrolytic rebalancing with intravenous administration of fluids, oxygen therapy, nasal obstruction treatment, adrenaline in aerosols have been established.

Evolution of the case was unfavorable after 24 hours, with neurological signs; the infant is no longer in the seating position, the presence of vomiting in jet, anisocoria, difficult to catch objects, accentuated cough. Breath bronchoalveolar lavage is performed for the bacteriological examination of bronchial secretion (by bronchoscopy) and lumbar puncture for CSF examination.

The bacteriological examination revealed BK and Cerebrospinal fluid analysis showed - Glucose=23,2 mg/dL, Pandy++++, albumin=264 mg/dL, chlorides=702 mg/dL, cell count=310/mm^3,

CT shows tuberculoma and perilesional cerebral edema, confirming the stage of cerebral TB. (figure 2)

Fig. 2 CT scan

Treatment is adjusted for diagnosis with 9 months tuberculostatic medication (isoniazid, ethambutol, pyrazinamide and rifampicin) and anti-inflammatory corticoid (dexamethasone) for cerebral edema. Evolution was good, the patient being discharged after 1 month.

DISCUSSIONS

- Children are an easy target for TB, implicit for its complications
- Unhealthy hygiene rules for food preparation had an increased risk for various diseases, implicitly TB.
- The cow's milk offered to the baby up to 1 year of age is a "mistake" for various reasons: hypersomolarity overloading the kidney, beta-lactoglobulin incriminated in the etiopathogenesis of occult haemorrhages, implicitly of the iron deficiency anemia of the infant in rural areas, where almost any family had animals whose products feed the children, veterinary control of domestic animals is not achieved[19].

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- The potential of M. Bovis to trigger pulmonary TB is increased in infants where defense mechanisms are immature and ineffective[20].
- The poor socio-economic level, poor educations are risk factors for TB infection.
- The polymorphism of the disease indicates complex explorations (bronchoscopic lavage, CT with contrast substance, etc.) for rapid and complete diagnosis.
- BK with chemotherapy resistance indicates complex therapy with 3-4 tuberculostatic associations in 9-12 months.
- Eradication in the outbreak is equally important for the sterilization of other family members and the animals.

CONCLUSIONS

Cerebral tuberculomas are a rare and serious form of tuberculosis due to the haematogenous spread of Mycobacterium Tuberculosis

Symptoms and radiologic features are nonspecific, leading sometimes to misdiagnosis.

If diagnosed early, tuberculomas respond well to antituberculostatic treatment alone.

Serial CT scans allow an objective assessment of the effect of medical treatment on both the tuberculoma and the surrounding oedema

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