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Medicine

STAPHYLOCOCCAL PNEUMONIA - CASE REPORT

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ABSTRACT:
STAPHYLOCOCCAL INFECTIONS HAVE BEEN A MAJOR CONCERN OF THE CHILD'S INFECTIOUS PATHOLOGY.
STAPHYLOCOCCAL PNEUMONIA, ALTHOUGH RARER THAN PNEUMOCOCCAL PNEUMONIA, REMAINS ONE OF THE CHILD'S MOST SERIOUS BACTERIAL PNEUMONIA, DESPITE THE GREAT ADVANCES OF ANTIBIOTIC THERAPY AND RESPIRATORY RESUSCITATION TECHNIQUES. STAPHYLOCOCCUS AUREUS IS THE DETERMINANT OF THE DISEASE, BUT AN IMPORTANT ROLE IS PLAYED BY A NUMBER OF FAVORABLE FACTORS: LOW AGE, PRESENCE OF NUTRITION DEFICIENCY (PREMATURITY, DYSMATURITY, PROTEIN-ENERGY MALNUTRITION), CONVULSIVE COUGH, CONGENITAL MALFORMATIONS, PREEXISTING VIRAL INFECTIONS (MEASLES, VARICELLA) PROLONGED ANTIBIOTIC THERAPY, DIABETES MELLITUS, IMMUNE DEFICIENCIES, CYSTIC FIBROSIS, BRONCHIECTASIS, ETC.

KEYWORDS: STAPHYLOCOCCUS, PNEUMONIA, CHILD.

The separation of the 4 clinical stages (interstitial, abdominal, pleural and bullous) is currently obsolete. Interstitial stage either does not exist in a significant number of cases, or, when present, is not due to staphylococcus, but to a previous viral infection.

The other stages and corresponding injuries (abscesses, pleural involvement, pneumatocele) actually evolve in successive associations and variables on a case-by-case basis.

The onset of sudden onset with fever, cough and dyspnoea usually occurs in a small baby or child who has either a "respiratory viral" or a staphylococcal dermis.

Clinical picture is rapidly constituted and includes: general manifestations, respiratory manifestations and digestive manifestations. General manifestations translate into: serious alteration of the general state (indicating from the beginning a severe illness): high fever, gray skin, lethargy alternating with periods of agitation; signs of cardiovascular collapse s.a.

Functional respiratory manifestations are nonspecific and may be encountered in any other condition that causes a respiratory failure syndrome: tachypnoea, expiratory cough, nasal

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flaring, inter- and subcostal retractions, cyanosis. The older child may also have: chest pain, chills, sanguinolent sputum. Before the appearance of pleurisy, the picture is that of a pulmonary condensation syndrome (thudlike sounds, wheezing, bronchophony, crepitant rales).

With the appearance of pleural empyema, the physical examination reveals a pleuretic syndrome (percussion dullness, abolition of vocal vibrations and vesicular murmur, presence of pleural rubs, reduction of respiratory amplitude on affected part, etc.)

Staphylococcus aureus is a major cause of bacterial infections associated with medical care and postoperative wound infections (1-4). Skin and soft tissue infections are a common type of S. aureus infection, which can be recurrent in many people (5, 6). S. aureus also produces a severe invasive disease such as bacteremia, meningitis, endocarditis, osteomyelitis, pneumonia, sepsis and toxic shock (4, 7). Bacteremia is associated with increased mortality (20 to 40% in adults) despite appropriate antibiotic treatment (8). S. aureus colonizes approximately 20 to 80% of the human population at a given time, providing a reservoir for infection and subsequent transmission (9,12). Rapid growth of S. aureus strains that are resistant to multiple antibiotics, such as S. aureus resistant (MRSA) and vancomycin resistant strains, both community and nosocomial (13-15), complicated the treatment of these infections.

CLINICAL CASE

BEM 1 month old baby is hospitalized for fever, nasal obstruction, and diarrhea stools. From his personal history, he is the first child, born at 9 months, with birth weight = 3380g, artificially fed. Four days after admission, fevers are 39°C; hemocultures are taked in a spike of a fever that is negative. The diarrheal stools are maintained throughout the first week, the infant is perfused, and Aminoven is given with hydro-electrolytic rebalancing. From the 8th day of hospitalization fever reappears after 3 days of afebrility, and productive cough, bronchial and rallies, difficult appetite. Initially received ceftriaxone, Gentamicin, hydroelectrolytic rehydration therapy, racecadotril, Lactobacillus reuteri, hydrocortisone succinat, then Cefoperazone /Sulbactam for 8 days, chest tapotage with slow favorable evolution and weight recovery over the first 4 days after changing therapy. Afterwards the fever reoccurs; the hemocultura became positive for Staphylococcus aureus.

PARACLINICAL

At admission: CBC: Hb = 10.4 mg%, leukocytes = 5200/mm^3, platelets= 364,000/mm^3, ly = 13.1%., M = 4.2%, Gr = 82.7%, ESR=15/30 mm.

28 01: Hb = 11.4 mg%, leucocyte = 8300 / mm^3, platelets = 364,000 / mm^3, ly = 39%, M = 8%, Gr = 51%, E=2%,, ESR= 92/120 mm, protein C = positive

4 02: CBC: Hb = 11 mg%, leucocyte = 8200 / mm^3, platelets = 364,000/mm^3, ly = 32% M = 6%, Gr = 59%, E = 3%, ESR= 40/70 mm, protein C = positive

03. 02. hemoculture = Staphylococcus aureus, candida = present. Antibiogram = sensitive- ampicillin, cefoperazone, biseptol, amikacin, penicillin, resistant- clarithromycin, ceftriaxone, cefuroxime, cefaclor.

RESULTS AND DISCUSSIONS

The radiological resolution of extended lung opacity may last for weeks or months.

Pneumocele is common and usually develops approximately 7 days after the onset or when the pulmonary pathological resolution begins. (Figure 1)

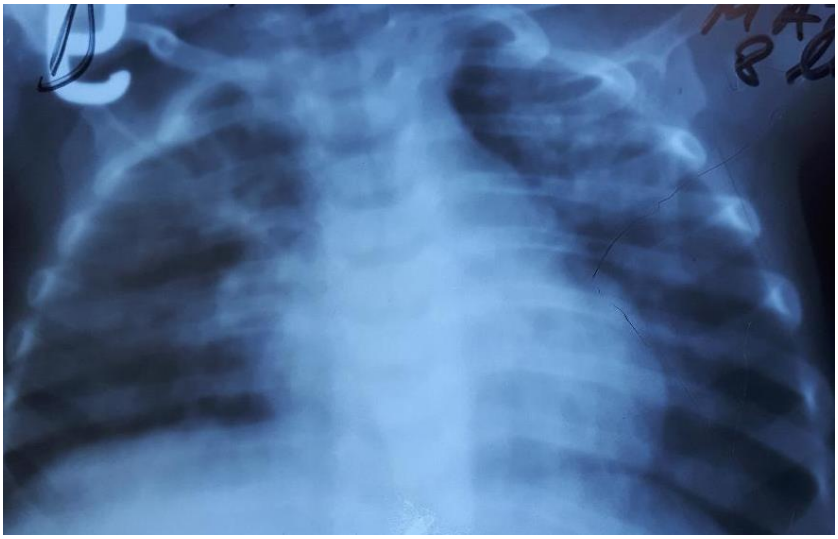

Figure 1. Radiological aspect with pneumatocele

They are not pathognomonic for staphylococcal infection, and may also occur in pneumococcal pneumonia, pneumoniae produced by H. influenzae, Klebsiella, gram negative enteric germs.

The starting point of septicemia with staphylococcus, which led to secondary multiply of the lung, was digestive. Initial hemoculture failed to properly capture the bloodstream of the microbe. At the second, positive, hemoculture, the etiological diagnosis could be clearly stated.

Although the patient had been treated "blindly" with cephalosporin to which, according to the antibiogram, the microbe was sensitive, practically therapeutic efficacy was greatly reduced to the antibiotic, leading to the conclusion of clear differences of "in vitro" sensitivity to "in vivo".

Successive antibiotic treatment secondary to the colonization of candida albicans spores, complicating both the clinical picture and the appropriate therapeutic response. The child also received treatment for 7 days with triple combination: vancomycin, fluconazole, meropenem, the evolution being favorable.

CONCLUSION

1. Small age correlates inversely with the severity of the condition
2. The severe, septicemic progression of some digestive or cutaneous infections, imprints the prognosis of the disease by secondary pulmonary damage
3. Staphylococcal pneumonia is a severe, lethal condition even at the age of newborn and small baby
4. Differences in antibiotic susceptibility in vivo and in vitro influence the quality of response to target antibiotic therapy.
5. The prolonged treatment with antibiotics is secondary colonization with Candida, the therapy being adjusted by associating an antibiotic with the antibiotic regimen.
6. Immune physiological immaturity predisposes to severe, septicemic aspect, of infections considered banal at other ages, except for infants and young children.
7. Prolonged hospitalization had a secondary effect as a delay in normal growth and development, with possible future repercussions.

8. The hygiene of the family of the newborn must be kept rigorously, the transmission path being, in the present case, from the contaminated mother's skin.

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