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Medicine

INTERRELATION OF THYMUS HYPERTROPHY - SEVERE PNEUMONIA IN A NEWBORN FROM THE TWIN PREGNANCY

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ABSTRACT:
THYMUS HYPERTROPHY IS AN ANATOMICAL-PHYSIOLOGICAL ENTITY THAT IS SPECIFIC TO THE NEWBORN AGE. TWINNING PREDISPOSES TO "RISKS", PREMATURE BIRTH, LOW WEIGHT, INCREASED (SECONDARY) SUSCEPTIBILITY TO INFECTIONS. WE HAVE CONDUCTED A STUDY OF TWO PAIRS OF UNIVITELINE TWINS THAT SHOW A POSSIBLE LINK BETWEEN THYMIC HYPERTROPHY AND THE SEVERE POTENTIAL EVOLUTION OF A NEWBORN PNEUMONIA, THE EXPLANATION BEING GIVEN BY ANATOMICAL FEATURES, MECHANICAL, INFECTIOUS FACTORS, AND POOR IMMUNE CAPITAL.

KEY WORDS: THYMUS, PNEUMONIA.

INTRODUCTION

Thymus is an organ placed in the upper portion of the anterior mediastinum. It regresses in size with age, the adult is completely involuted. In the baby, the examination is done during the radiological examination in the inspiration / expiration and during crying and the concretization is made in the form of an opacity located in the upper mediastinum, overlapping the vascular pedicle, exceeding it. Differential diagnosis includes a wide range of conditions: adenopathy, segmental atherosclerosis, pleurisy, and upper lobe pneumonia, cardiac malformations with cardiomegaly, thyroid hypertrophy, or even enlargement of the mediastinal shadow (cough, after sucking). The newborn has a "physiological" immaturity of locally

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mediated immune mechanisms in the respiratory or digestive mucosa. Twinning pregnancy may usually be a risky pregnancy requiring close monitoring of pregnancy and predisposing to premature delivery, with all the consequences derived from it: low birth weight, poor neonatal adaptation, and insufficient amount of lung surfactant. Therefore, newborn pneumonia requires "a priori" antibiotic therapy before determining the blood cultures.

Thymus can be quite prominent in the newborn but very little to be seen after the age of two years[6].

Platter described thymic hyperplasia in infants as the enlargement of the thymus, which compresses the airway, resulting in mors thymica or "sudden infant death"[7]. The diagnosis of thymic hyperplasia is formed on the weight and size of the thymus: the thymus is bigger than the predicted maximum range for the age[8] or the thymus weighs over 100 g[9]. In respect to a 1994 report, cellular growth is similar in thymic hyperplasia and the normal thymus; thus, thymic hyperplasia is a benign enlargement of the thymus[10].

Diagnosis of an enlarged thymus on a chest radiograph may be troublesome as its size, position, shape, and growth pattern are variable[11]. Other anterior mediastinal masses that present in children are: teratomas, lymphangioma, lymphosarcoma, hemangioma, substernal thyroid, thymic tumor and thymolipomas and must be considered in differential diagnosis. CT scan is helpful in differentiating the thymic lesion from others. The management of large thymic mass is controversial. When the mass is asymptomatic and the patient is less than two years of age, the patient can be followed under close observation; the mass often regresses with or without steroid administratio[12]. Thymolytic effects of steroids are well established, but this test is inconsistent and lacks specificity[13]. In children under 2 years of age, asymptomatic mass can be observed and a trial of steroid given, as in this age group lymphoma is not a major diagnostic consideration[14].

One of the major functions of the thymus, the maturation of thymocytes, has been researched extensively with molecular and cellular biology. It is now known that various inductive, hormonal, and proliferative signals from epithelial cells has a major role to the

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maturation of thymocytes[15]. T-cell antigen receptors of thymocytes interact with epithelial major histocompatibility complex antigens in the process of thymocyte maturation[16].

Material and method - prospective study on 2 pairs of univiteline twins for 14 days, respectively 23 days admitted in the Pediatric Clinic Philanthropy of different sexes and natural nutrition.

The pairs were single-sex twins, all of them rural children. The first pair - boys (AF and AE) with birth weight = 1450 g and 1870 g, admission weight= 2380 g and 2880 g second pair - girls (CD and CA). birth weight= 1300 g and 1700 g and admission weight= 2400 and 2750 g.

All four children were hospitalized for severe respiratory insufficiency, ineffective cough, periorrhasal and extremities cyanosis.

One of the twins showed worsening of respiratory failure, with respiratory acidosis, cyanosis, severe hypoxia, being transferred and followed through the PICU section.

Several parameters were introduced into the study:

- Age, gender,
- rural/urban origin,
- clinical examination,
- imaging tests (radiography)
- inflammatory tests,
- urea, creatinine, bilirubin, transaminases,
- calcium, magnesium, ionogram,
- pharyngeal exudate

A. F. Hb = 11.4, L = 12,000 / mm3, platelets = 306,000 / mm3, Gr = 39%, M = 8%, Lf = 43% ESR = 50 / 90mm, Urinalysis = 6.64 mg%, TBIL = 6.64 mg%, BC-1.57mg% pulmonary radiography = thymus hypertrophy, multiple micronodules disseminated diffuse, bilateral lung dermatological examination = omphalitis
AE: Hb = 15.5 g%, L = 10,100 / mm 3, platelets = 345,000 / mm 3, Gr = 35% M = 28.9% Ly = 429% ESR = 23/50 mm TBIL=10.5 mg% BC= 2.12 mg%, Urinalysis = normal, pharyngeal exudate = absent, pulmonary radiography = lung stg - hyaline parahillary interstitial drawing, dr. Opacity 3/3 cm with inferior net shape, diffuse contour upper 1/3 superior paratraheal dermatological examination = omphalitis
CA = 11.4, L = 12000 / mm3, platelets = 523,000 / mm3, Gr = 45.9%, M = 7.7%, Ly = 46.4% VSH = 25/40mm, pharyngeal exudate = absent,
Rx = thymus hypertrophy,
CD: Hb = 10.5, L = 19,600 / mm 3, platelets = 452,000 / mm 3, Gr = 52,2%, M = 8,1%, Ly = 39,72% ESR = 30 / 55mm, pulmonary radiograph = thymus hypertrophy

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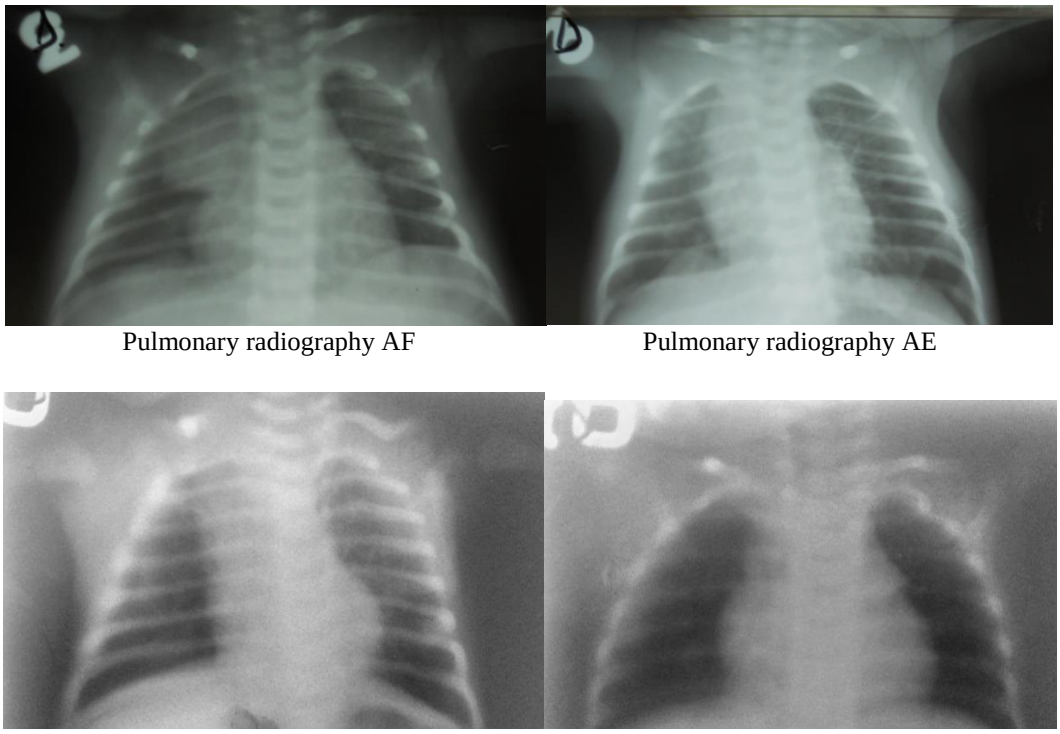

Pulmonary radiography AF | Pulmonary radiography AE

Pulmonary radiography CA | Pulmonary radiography CD

Figure 1 Thymus hypertrophy on all 4 radiographs

The duration of hospitalization was 11 and 15 days respectively, the treatment being complex with cephalosporins, systemic corticotherapy, oxygen therapy, acidosis treatment, furosemide depletion, secretion aspiration, nasal disobstruction, probiotics, hepatoprotective drugs.

RESULTS AND DISCUSSIONS:

1. Both pairs of twins have reached a serious overall condition, marked respiratory failure and required respiratory support and oxygen therapy.
2. Coexisting conditions of pneumonia (omphalitis, jaundice, ITU, folliculitis) prolonged the duration of hospitalization and, implicitly, antibiotic treatment.
3. Thymus hypertrophy acts complementarily by secondary immune deficiency with increased severity and duration of hospitalization. This association can be interpreted as potentially aggravated by mechanical factors (extrinsic compression), immune deficiency.
4. Radiological assessment is necessary both for confirmation of the diagnosis and for the correct diagnosis of the differential diagnosis.
5. Antibiotic therapy is indicated from the first moment of hospitalization, before the result of the laboratory tests, in accordance with the patient's serious condition.
6. Twinning with its consequences: premature birth, low weight, pulmonary immaturity, is a risk factor in potentiating the severity of respiratory diseases.
7. Up to 4 months, both pairs of twins also had 2-3 episodes of respiratory disease, but not the magnitude of the initial episode.
8. The somatic and neuriopsychic development of all children up to the age of 1 was normal, the height and weight being included in the growth percentiles for that age.

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