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# PLEURAL EMPYEMA OF UNUSUAL PRESENTATION IN PEDIATRIC PATIENT


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**ABSTRACT**

**Objective:** To determine the etiology, diagnosis and treatment of pleural empyema in a pediatric patient
**Method:** A retrospective study was carried out, which consisted of reviewing a clinical case of a pediatric patient diagnosed with pleural empyema, from the onset of symptoms to her definitive treatment, which was surgical.
**Conclusion:** Community-acquired pneumonia is a common and potentially serious infection, which has a significant prevalence in childhood and causes more deaths than any other disease, especially in developing countries, between 20 to 40% progress to pleural effusion. , and only 0.6-2% evolve to pleural empyema; In our case, the patient was diagnosed with said pathology (pleural empyema), the same that ended in surgical resolution with a good response.


**KEYWORDS :** Pneumonia, Pleural empiema.

## INTRODUCTION

Community-acquired pneumonia remains a common disease, and is the leading cause of infant mortality, especially in third world children. The most frequent causative agent of bacterial pneumonia continues to be Streptococcus pneumoniae, however, in the last decades the detected etiological agents have varied due to the introduction of conjugate vaccines and the use of molecular biology techniques that have allowed the identification of new pathogens ( one).

In most cases, the respiratory infection tends to be self-limiting and restricted to the lung parenchyma, but on many occasions it spreads to the pleura causing empyema. In the presence of an empyema, the evolution and prognosis of the respiratory infection are radically modified. This complication occurs with a relatively high incidence in our setting, due to the lack of timely consultation and, in many cases, due to inadequate management, as there are no clearly established protocols.

Empyema is a purulent pleural effusion and is a phase in the progression of an inflammatory exudate.

It has three stages: exudative, fibrinopurulent and organization. For your diagnosis, the clinic, the laboratory findings and the imaging are important.

Regarding treatment, many protocols propose early decortication, other authors propose more conservative treatments, with antibiotics and thoracostomy tubes.

A school patient with no known immunodeficiency is presented as a case. She presented with a picture of otalgia, otorrhea and respiratory symptoms with cough, thermal rise, and chest pain, with a diagnosis of Pneumonia complicated with pleural empyema, undergoing thoracotomy, and performing Pleural Decortication and antibiotic management. in UCI.

## METODOLOGIA

A retrospective study was carried out, a clinical case of unusual presentation from the beginning of the symptoms until its definitive surgical treatment.

The information and images obtained belong to the medical personnel in charge of the case, whose reinforcements rest on the statistical package Excel, Word and JPG

## PRESENTACION DE CASO CLINICO

This is a 8-year-old, 5-month-old female patient, resident in Loja, Ecuador, a student, with a prenatal history of 9 normal controls, a birth history of a second pregnancy, obtained by cephalovaginal delivery at 39 weeks gestation without complications, history postnatals with exclusive breastfeeding until 6 months of age, with no personal, family or surgical pathological history. Who, 8 days before his Pediatric evaluation, started with pain in the left ear, went to the doctor who prescribed ibuprofen plus Cetirizine without improvement. irradiation, accompanied by a non-quantified thermal rise for two days, with this symptomatology, he went to the Basic Hospital where they revealed Pleural Effusion and decided to transfer to a specialized hospital.

Upon arrival at Pediatrics, a chest X-ray is performed (Photo: 1); evidencing opacity of the right upper lobe, so a simple Chest Tomography (Photo: 2 and 3) was taken, objectifying a

partitioned right pleural effusion; Due to the clinic of the patient accompanied by the radiological findings and the non-response of antibiotic treatment, it was decided to perform a Decortication by Thoracotomy with findings:

- Thickened pleura and peripulmonary fibrinopurulent material are observed.
- Segment 3 of the upper lobe digested in its entirety, with the presence of fibrinopurulent material and necrotic tissue.

For these findings, they proceed to perform: removal of purulent material together with necrotic visceral pleura of the anterior apical lung segment 3.

Admitted to her ICU post-surgery for comprehensive management, during her ICU stay the patient remained orointubated and mechanically ventilated for 2 hours and successfully extubated, without vasopressor support, with mean arterial pressure of 65 mmhcg and heart rate of 65 beats per minute. Hemodynamically stable discharged from the ICU service to a pediatric hospitalization, he also received ceftriaxone plus vancomycin antibiotic therapy for 5 days with good clinical evolution. During his hospitalization, blood tests were carried out with 12,000 Leukocytes, Neutrophils 78.4% HB: 12 13g / dl HCTO: 35%, Glucose: 100 mg / dl Creatinine 0.40 mg / dl, Urea: 40mg / dl, PCR: 5 mg / dl PCT: 1 ng / dl Sodium: 139, Potassium: 4.0. Patient who completed antibiotic therapy for 10 days based on ceftriaxone and vancomycin

The patient evolves favorably from the clinical and radiological point of view. (Photo 4)

**Photo 1: Admission chest x-ray:**

**Photo 2-3: tomography: Simple chest Opacity in the upper lobe Septate right pleural effusion**

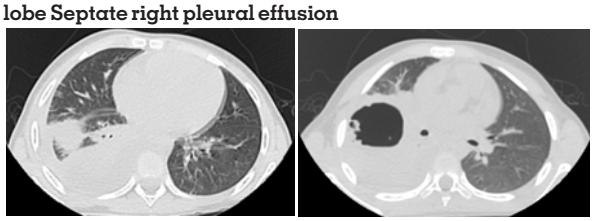
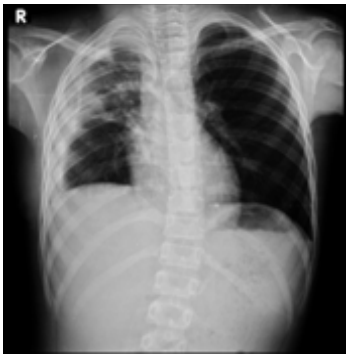


**Photo 4: Control chest radiograph: decreased apical opacity in the right upper lobe**




## DISCUSSION

It is significant to assess the evolution of the patient from admission, especially to pediatric patients, since the first step in diagnosing complicated pneumonia is clinical suspicion, persistence of fever, general condition of the patient, changes in auscultation. pulmonary, respiratory distress, should make us suspect the appearance or worsening of a pleural effusion. (5).

The goals of treatment are to control infection with the appropriate antibiotic and to drain the infected and / or complicated pleural effusion. In this case, we proceeded to surgical intervention, through Thoracotomy, performing Decortication without complications, additionally, the third-generation cephalosporin antibiotic scheme (Ceftriaxone) plus a glycopeptide (Vancomycin) with good clinical and radiological evolution were fulfilled.

## CONCLUSION

Acute respiratory infection is one of the leading causes of morbidity and mortality in the pediatric age. Since 1990, an increase in suppurative complications of community-acquired pneumonia has been reported in several countries.

Pleural empyema (PD) is a serious complication that affects up to 28% of pediatric patients. Although it is a common condition in many hospitals around the world, its optimal management and treatment are still a matter of great controversy; These include antibiotherapy and thoracentesis, pleural drainage tube, fibrinolytics, video-assisted thoracoscopic surgery, and open thoracotomy. (6). In our case, the patient did not respond adequately to antibiotic treatment, since when performing a chest tomography, a complicated septate pleural effusion with probable empyema was evidenced, so surgical intervention was necessary where the presence of empyema was confirmed, the same as It was removed together with necrotic visceral pleura, after which the patient evolved favorably, it should be noted that the culture of pleural fluid highlighted S. pyogenes, where we can confirm the cause of said condition.

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