

**PULMONARY ABSCESS
IN CHILDREN
ADMITTED TO THE
DAVID BERNARDINO
PEDIATRIC HOSPITAL
(ANGOLA): CASE STUDY
(2018-2019)**

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Abstract: Introduction: Lung abscesses are cavities in the lung parenchyma with necrotic lung tissue and fluid inside. **Objective:** To describe the characteristics of children admitted to the David Bernardino Pediatric Hospital with lung abscess from June 2018 to February 2019. **Methodology:** Prospective descriptive study carried out in 18 children and adolescents aged 2 months to 14 years, admitted to the David Bernardino Pediatric Hospital with pulmonary abscess confirmed by chest X-ray. Through a form, information on clinical processes and companions, the variables age, sex, nutritional status, vaccination, clinical manifestations, previous antibiotic therapy, underlying diseases, radiological findings, type of abscess, type and duration of treatment and complications were evaluated and analyzed. Results: The most affected age group was 5-9 years old, with 50% of cases. The most frequent symptom was fever (100%), followed by cough and dyspnea with 94.4 and 38.9% of cases, respectively. Malnutrition was present in 16.7% of the cases. 66.7% of the children presented a vaccination card, of which 44.4% had a complete vaccination schedule for their age. In 88.9% of the cases the abscesses were single, 66.7% secondary. and 94.4% were located in the right lung. Clindamycin and postural drainage was the treatment instituted in 100% of the cases. Pleural effusion and empyema were complications in 5.6 % of cases. The mean hospital stay was 19.7 days. 94.4% of children were discharged. **Conclusion:** Lung abscess is a rare complication of pneumonia in children and is often secondary to foreign body aspiration. Despite being severe, the prognosis is good.

Keywords: Pulmonary abscess. Children. David Bernardino Pediatric Hospital.

INTRODUCTION

Lung abscesses are cavities in the lung

parenchyma, with necrotic lung tissue and fluid inside, caused by microbial agents. They are more frequent in the right lung parenchyma, radiologically verifying the presence of an air-fluid level inside the cavity.⁽¹⁾

They arise in predisposed individuals with chronic lung disease or secondary obstruction and in patients at increased risk of aspiration. It is uncommon in children, with an incidence of 0.7 per 100,000 admissions/year. Recent data in the literature suggest an increase in its incidence in children due to the greater number of necrotizing pneumonias and the greater virulence of different strains of pneumococci⁽²⁾.

Among 230,325 admissions to Children's Memorial Hospital in Chicago from 1985 to 1990, only 28 children were diagnosed with lung abscess, a rate of 1 case per 8,226 admissions⁽³⁾.

At the Ibadan University Hospital in Nigeria, in a study carried out on 45 patients with lung abscess over a period of 3 years, only 6 belonged to the pediatric age group⁽⁴⁾.

This study aims to raise awareness of the incidence of the disease at the David Bernardino Pediatric Hospital in Luanda, as it is described as a rare disease.

METHODOLOGY

A prospective descriptive study was carried out in 18 children and adolescents aged 2 months to 14 years, admitted to the David Bernardino Pediatric Hospital (HPDB) in Luanda (Angola), with lung abscess confirmed by chest radiography.

Data were collected by interviewing the child's companion, complemented with those present in the clinical process, using a form.

The variables age, sex, nutritional status, vaccination status, clinical manifestations, previous antibiotic therapy, underlying diseases, radiological findings, type of

abscess, type and duration of treatment and complications were evaluated.

For the analysis of the variables, the Excel program was used. Data were presented as frequency, mean and percentage. Statistical significance was considered present when $P < 0.05$.

RESULTS

The most affected age group was 5 – 9 years old for males and 1 – 4 years old for females, with 50 and 37.5% respectively. The

male sex was predominant with 55.6% of the cases.

Fever was the most frequent symptom with 100% of cases, followed by cough and dyspnea with 94.4 and 38.9% of cases, respectively. Moderate and severe malnutrition were present in 16.7% of the cases. 66.7% of children presented a vaccination card, of which 44.4% had a complete vaccination schedule for their age. Approximately sixty-seven (66.7%) of the children had taken an antibiotic before admission.

Age range (years)	No. of patients				Total	%
	M	%	F	%		
< 1 year	2	20	2	25	4	22,2
1 – 4 years old	3	30	3	37,5	6	33,3
5 – 9 years	5	50	2	25	7	38,9
> 10 years	0	0	1	12,5	1	5,6
Total	10	55,6	8	44,4	18	100

Table 1: Distribution according to age and sex of patients hospitalized with lung abscess in the HPDB from June 2018 to February 2019.

Clinical manifestations	Frequency	%
Fever	18	100
Cough	17	94,4
Dyspnea	7	38,9
Moderate malnutrition	3	16,7
severe malnutrition	3	16,7
Complete vaccines	8	44,4
Incomplete vaccines	4	22,2
With prior antibiotic therapy	12	66,7
No prior antibiotic therapy	6	33,3

Table 2: Distribution according to clinical manifestations, nutritional status, vaccination and previous antibiotic therapy of patients hospitalized with lung abscess at HPDB from June 2018 to February 2019.

	Frequency	%
Primary abscess	6	33,3
Secondary abscess	12	66,7
Right lung	17	94,4
Left lung	1	5,6
Single	16	88,9
Multiples	2	11,1

Table 3: Distribution according to radiological findings of patients hospitalized with lung abscess in HPDB from June 2018 to February 2019.

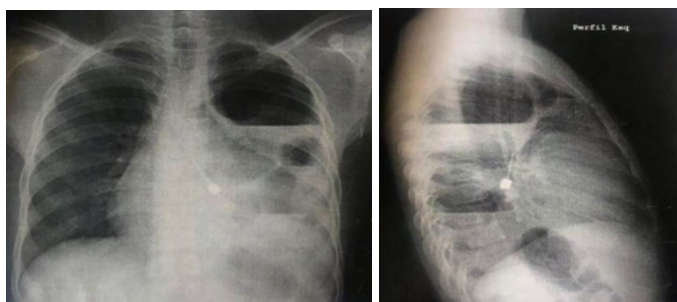


Figure 1: Radiological images of lung abscess (HPDB).

Antibiotic therapy	Number of patients	%
Clindamycin	18	100
Postural drainage	18	100
Fever duration (days)	7,5 (5-22)	
Complications		
- Pleural effusion	1	5,6
- Empyema	1	5,6
length of stay	19,7 (6-45)	
Exit state		
- Improved	17	94,4
- Death	1	5,6

Table 4: Distribution according to type of treatment, duration of fever, complications, length of stay and status at discharge of patients hospitalized with lung abscess in HPDB from June 2018 to February 2019.

In most cases, abscesses were single (88.9%) and secondary to foreign body aspiration (66.7%), with a preferential location in the right lung (94.4% of cases). Figure 1 shows the only pulmonary abscess located on the left.

Clindamycin and postural drainage was the treatment instituted in 100% of the cases. In 5.6% of the cases had pleural effusion and empyema as a complication, with an average hospital stay of 19.7 days. Improved 94.4% of children were discharged.

DISCUSSION

In the present study, during a period of 9 months, 18 cases of lung abscess were observed, in contrast to other studies: In Taiwan, a 20-year study found 23 cases of lung abscess ⁽⁵⁾; In Iran in 15 years, there were 22 cases ⁽⁶⁾; In Houston in 11 years there were 45 cases ⁽⁷⁾ and in India, 1 case in 1 year ⁽⁸⁾. This finding in the present study demonstrates the trend of increasing cases of lung abscess as a complication of pneumonia in the community, or by aspiration of foreign bodies, in Luanda (Angola) where socioeconomic conditions favor the development of the disease. There is agreement with the studies cited ⁽⁶⁻⁹⁾ in relation to the predominance of secondary and right-located abscesses. Regarding previous antibiotic therapy, more than 50% of children in the present study received antibiotics before hospital admission, as opposed to 62% of children in another study ⁽⁹⁾. This reflects the indiscriminate and misuse of antibiotics in Luanda's peripheral health centers. We verified the agreement with other studies in relation to the good prognosis of patients ^(10,11).

LIMITATIONS

The study had some limitations:

- Difficulty in accessing other works on Pulmonary abscess in children in Angola, due

to the scarcity of available literature.

- Failure to carry out cultures to determine the causal agent.

CONCLUSIONS

Lung abscess is a rare complication of pneumonia in children and is often secondary to foreign body aspiration. Despite being severe, the prognosis is good.

ETHICAL CONSIDERATIONS

The study had the consent of the Directorate of the David Bernardino Pediatric Hospital in Luanda, and was approved by the institutional Ethics Committee. Anonymity, confidentiality of data and samples of participants were guaranteed.

INTEREST CONFLICTS

None.

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