TUBERCULOSIS PNEUMONIA, A TYPICAL PRESENTATION OF PULMONARY TB.

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ABSTRACT

This study was carried out to see the pattern of pneumonic disease in Basrah general hospital in the two groups of patients, inpatients out patients and to see the extent of tuberculosis presented as pneumonia, not as atypical case of clinical and X-ray findings in the apices of lungs.

This is prospective study for patients with typical history, signs investigation chest x-ray of pneumonia, lobar and bronchopneumonia from the period of (April 2006) to (October 2008) were included in this study, they are attending the out patient department or are admitted in the wards of the Basrah general hospital.

From a total of 374 cases of pneumonia, 26 cases of TB pneumonia diagnosed. There to start. There age range from one to 72 years, the most findings did not suggest TB common age group affected was 20-40 year for both sexes, while at age group 50-70 males affected more, bronchopneumonia was comment type of pneumonia in this group recorded in 13 patients, or bronchitis in 6 patients. ESR was less than 50 mm/hr in 12 patients so it is unreliable in 50% of cases.

This study show that pulmonary TB is increasing (5.36%) and it could present in pneumonia like picture not involving the typical sites (apices) even in those who are not diabetic or immune compromised.

INTRODUCTION

Pneumonia is the term used to describe inflammation of the lungs involving the

alveolar ducts and alveolar sacs and associated with acute respiratory tract infection and recently developed radiological signs [1, 2].

There are different kinds of pneumonia such as primary pneumonia, which is community acquired and secondary pneumonia, which occurs when the host or lungs are diseased or weakened, nosocomial pneumonia, aspiration pneumonia and pneumonia in immunocompromised patients[3]. But it tends to conform into one of two pathological and roentgerographic patterns which is bronchopneumonia resulting from bronchial infection, which can be aspirated into alveolar and result in widespread patches of consolidation. The pneumonic process may involve primarily the interstitium or the alveolai, involvement of an entire lobe is called lobar pneumonia [4].

TB. is an infectious disease caused by *Mycobacterium tuberculosis* characterized by prolongs latency period between infection and overt disease, prominent pulmonary disease, rarely other organs involved with granulomatous response and intense tissue inflammation and damage.

TB. is now the leading infectious cause of morbidity and mortality globally. WHO estimated that third of the world's population (1.7 billion) was infected with *M. tuberculosis*.

Characteristic sites of involvement, posterior and apical segment of the Rt. upper lobe, the apical posterior segment of the Lt Upper lobe and the superior segment of the lower lobes. Lower zone disease is seen in < 15% of HIV negative adults, it is seen somewhat more commonly in diabetics.

Acute pulmonary TB. can simulate pneumonia but patients are seldom as acutely ill as in other types of pneumonia[2].

TB. Pneumonia is not uncommon sequence it occurs due to:

- Aspiration of massive dose tubercle bacilli.
- Rupture of caseous material into a bronchus.
- Hemoptysis or after surgery in the lung.

The onset is sudden with chills, fever, cough, and hemoptysis and pleuretic pain. Physical examination shows signs of consolidation. Sputum for Acid Fast Baclli (AFB). is almost always positive by direct examination, response to treatment is mainly good[5].

MATERIALS AND METHODS

The intention of the study was pneumonia in general, to see etiological agents in Basrah concentrating on isolation of *Mycoplasma pneumoniae*. So all patients with suspected pneumonia by history and examination and investigation attending the out patients or are inpatients at wards of Basrah general hospital were included in the study if other causes like Bronchitis, TB or carcinoma have been excluded.

After exclusion of cases suspected to have pulmonary tuberculosis by the typical history and physical examination and confirmed by CXR and AFB in sputum. Still we isolate another cases of TB. Which was suspected to start with, as ordinary bacterial pneumonia by the finding in history and examination CXR, and negative AFB, but they fail to respond to antibiotics, and by repetition of AFB later on it was confirmed as TB pneumonia.

There sputum was collected early in the morning before breakfast for direct AFB stain, gram stain and culture for different kinds of bacteria on Blood, Choclate and Mackonkey agar and our main attention was toward isolation of *M. pneumoniae* on MDCS [6].

RESULTS

Form the total cases of pneumonia included in the study of 374 patients we isolated 26 cases with TB pneumonia.

Table1 shows the distribution of patients were 9 with non significant different (χ^2 = 4.88,$p \leq 0.05$) are females and others are males, the groups commonly affected from 20-40 in both sexes and 60-70 in male group with significant diffrence (χ^2 = 17.25 , $p \leq 0.05$) and with out significant diffrence between males anf females (χ^2 = 2.46 , $p \leq 0.05$) .

Table 2 shows the cases with fever and hemoptysis were 15 patients have hemoptysis with significant diffrence (χ^2 = 6.168, $p \leq 0.05$).

ESR value in the studied group of shown in Table3 were 12 (46.1%) patients have ESR < 50 mm/h and 7 (26.9%) patients ESR more than 100 mm/h with significant diffrence (χ^2 = 31.72,$p \leq 0.05$)

Table 1- The age-sex distribution for our patients

Age	Males	Females	Total
< 10	**2**	**-**	**2**
11-20	**1**	**-**	**1**
21-30	**2**	**3**	**5**
31-40	**3**	**2**	**5**
41-50	**1**	**3**	**4**
51-60	**3**	**-**	**3**
61-70	**5**	**-**	**5**
> 70 yr.	**-**	**1**	**1**
Total	**17**	**9**	**26**

$\chi^2 = 2.46$ $\chi^2 = 17.52$ $\chi^2 = 4.88$

df = 1 df = 6 df = 3

Table 2- Fever and hemoptysis in our patients

Fever	**23**
Hemoptysis	**15**

$\chi^2 = 6.168$

df = 1

Table 3- ESR value in the studied group

ESR mm/hr	Pts.
< 5	**1**
6-25	**3**
26-50	**8**
51-80	**3**

81-100	**4**
101-120	**5**
> 120	**2**
Total	**26**

$\chi^2 = 31.72$

df = 6

Table 4- X-Ray findings in our patients

CXR finding	N. of Pts.
Bronchopneumonia	**13**
Bronchitis	**6**
Rt lobar pneumonia lower lobe	**3**
Lt lobar pneumonia lower lobe	**2**
Non specific	**2**
Total	**26**

$\chi^2 = 62.41$

df = 4

Table 4 demonstrate the X-rays findings in study patients were 13 patients have bronchopneumonia and 6 have Bronchitis like features with significant diffrence ($\chi^2 = 62.41$, $p \leq 0.05$)

Table 5 shows the distribution of causative agents of pneumonia in the total group of patients were *Streptococcus* is the leading causes followed by *M. pneumoniae* significant diffrence ($\chi^2 = 73.40$, $p \leq 0.05$)

Concomitant *M. pneumoniae* infections with tuberculosis illustrated in Table 6 were 21 patients were with negative cultures for *M. pneumoniae*, and 3 have positive culturing pathogenic mycoplasma significant diffrence ($\chi^2 = 100.05$, $p \leq 0.05$).

Table 5- Distribution of causative agents among different age group

Age	< 15	> 15	Percentage
S. pneumoniae	**61**	**70**	**35.02**
M. pneumoniae	**45**	**27**	**19.25**
K. pneumoniae	**7**	**26**	**8.80**
S. pyogenes	**47**	**8**	**14.0**
S. aureus	**9**	**10**	**5.08**
E. coli	**5**	**8**	**3.47**
P. aureginosa	**4**	**2**	**1.60**
Others	**30**	**6**	**9.62**
TB.	**3**	**23**	**6.95**

$\chi^2 = 73.04$

df = 8

Table 6- Concomitant Mycoplasma infection in TB pneumonia

	M. pneumoniae	***M. salivarium***	**-Ve**
No. of patients	**3**	**2**	**21**
Total	**26**		

$\chi^2 = 100.05$

df = 2

DISCUSSION

Tuberculosis is common disease which few years ago considered under control in western Europe and north America has once again became a serious problem worldwide

because of AIDS and predicated spread of this specific communicable disease to the normal population[3].

Mycobacterium are primary soil or environmental organisms however it became so adapted to human body that it had no natural reservoirs infected and diseased persons. They are obligate aerobe and facultative intracellular parasites. So that tissue attached have high oxygen tension (upper lobes of lungs). Infected person coughs 1-100 million bacilli per minute[2].

Males affected more than females being exposed more to environmental factor and came in contact with infected or diseased persons. Table 1 shows that there are groups let us say before 20-40 years and 50-70 years, 1st involve both sexes, while the other for males. Other study shows that most of patients were young below age of 20 years [7, 8], while another study shows no such association [9]. Female preponderance shown in some studies [8, 10], [11] TB pneumonia is more common in diabetics Negroes.

The clinical features distrbuted among fever, hemoptysis and chest pain , this findings agree with many studies [12].

The ESR is non-specific test is shown in Table 3 that in 12 patients it was less than 50 mm/h it is suggested that it is never reliable in determining the activity of the disease, or the diagnosis [5], it may be correlated to malnutrition of the Patients.

X-rays finding are shown in Table 4 most of cases presented as bronchopneumonia or bronchitis (19) patients; that why it was misleading for initial diagnosis of TB.

X-rays may be even normal in 25% of cases[5]. Even the reaching of the same film made by two experienced radiologists may give as 33% observer errors [5].

The same individual (intra-individual variation) is even more disquieting than disagreement among different readers [9]. Another studies confirmed that 26-34% of films may be under-read [13].

The distribution of cases of pneumonia according to the causative organisms shown in Table 5 were *S. pneumoniae* is the leading cause while *M. tuberculosis* is the seventh.

Lastly, Table 6 shows concomitant mycoplasma infection, which was recorded in 5 patients.

From this we stress the point that tuberculosis not only increasing in these days but atypical presentation below the imaginary line that extended in the interhilar region is

frequent. So that we should not be mislead by presentation, and sputum for AFB should be requested in all patients with chest infection even if it is not typical of tuberculosis.

ذات الرئة الدرنية وطريقة لا نمطية لإظهار إصابة بالتدرن الرئوي

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الخلاصـــــة

أجريت هذه الدراسة لتقصي أسباب ذات الرئة في مستشفى البصرة العام للفئتين الراقدين في المستشفى ومرضى العيادة الخارجية. وبصورة غير مباشرة لاكتشاف مدى حدوث التدرن الرئوي كذات الرئة وليس كالمتعارف عليه من الإصابة النمطية من خلال إصابة قمة الرئة مع الأعراض السريرية والعلامات التشخيصية المتعارف عليها للتدرن.

هذه دراسة مستقبلية شملت جميع المرضى الذي تنطبق عليهم أعراض ذات الرئة وعلاماتها مع التأكد من الإصابة إشعاعيا بنوعيها الفصية والقصبية من الفترة (نيسان 2006) إلى (تشرين الاول 2008) والذين يراجعون العيادة الخارجية أو الداخلين إلى ردهات مستشفى البصرة العام.

من مجموع (374) حالة ذات رئة وجدت 26 حالة ذات الرئة الدرنية والذين لم تكن علامات المرض الأولية تشير إلى التدرن تراوحت أعمارهم ما بين 1-72 سنة. أكثر الفئات إصابة من 20-40 سنة لكلا الجنسين، بينما أصيبت الفئات العمرية 60-70 سنة للرجال أكثر من النساء.

كانت ذات الرئة القصبية الأكثر شيوعاً حيث سجلت لدى 13 حالة ثم حالات التهاب القصبات حيث سجلت لدى 6 حالات كتشخيص أولي وشعاعي. كان مستوى ترسب كريات الدم الحمر أقل من 50 ملم/ساعة لدى 12 مريض لذلك كان غير معولاً عليه لدى 50% من المرضى.

يستخلص من هذه الدراسة إن التدرن الرئوي في ازدياد (5.36%) من هذه الدراسة، وإنها قد تكون مشابهة لاصابات ذات الرئة الأخرى ولا تصيب قمة الرئة حتى لدى المرضى غير المصابين بداء السكري وهبوط المناعة.

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