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Pneumonia misdiagnosis. Are we losing time?

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Abstract

Community-acquired pneumonia (CAP) is not only one of the most frequent lower respiratory tract infectious but also one of the most misdiagnosed. There is no clear data in Ukraine on the incidence of CAP misdiagnosis and conditions, which can be difficult to differ with it. Therefore, we carried out a study of case histories of patient with CAP and identified three cases of pneumonia misdiagnosis with lethal outcomes. One of them is presented in the article to demonstrate clinical diversity that can lead to untimely diagnosis of diseases hiding under initially suspected CAP.

Keywords: Community-acquired pneumonia, diagnosis, misdiagnosis, bacterial endocarditis

1. Introduction

Despite the fact that approaches to diagnostic and treatment of CAP have been widely discussed by healthcare professionals for decades, diagnostic mistakes in real clinical practice still occur rather frequently. According to various authors CAP remains one of the most misdiagnosed conditions and range of diagnostic errors can be up to 6,7 % [1, 2].

On one hand, many conditions have been recognized as “masks of pneumonia”. On the other hand, CAP itself can mimic different diseases such as neurological disorders or acute abdomen. In clinical practice, any condition with prevalence of respiratory symptoms is highly probable to be identified as CAP [3-6].

Due to clear guidelines and diagnostic criteria, making a diagnosis of CAP or excluding it may seem an easy task. However, when patients present in critical state especially with fever and / or respiratory insufficiency ruling out pneumonia presents a difficult clinical decision [6].

There is not enough information on incidence of diagnostic errors in patients with CAP in Ukraine, but taking into account that prevalence and mortality rate of pneumonia in our country are relatively high 461.8 per 100 thousand and 11.6 per 100 thousand population respectively, a certain amount of diagnostic errors it is to be expected [7].

2. Materials and methods

That is why we carried out an analysis of 146 case histories of patients admitted in first half of 2018 year, which had a final clinical diagnosis – CAP. It is important to emphasize that 29 % (n=43) of them have initially been suspected to have other diseases, such as acute abdomen and other surgical pathology, cardiac pathology, neurological disorders and even sepsis (Fig. 1).

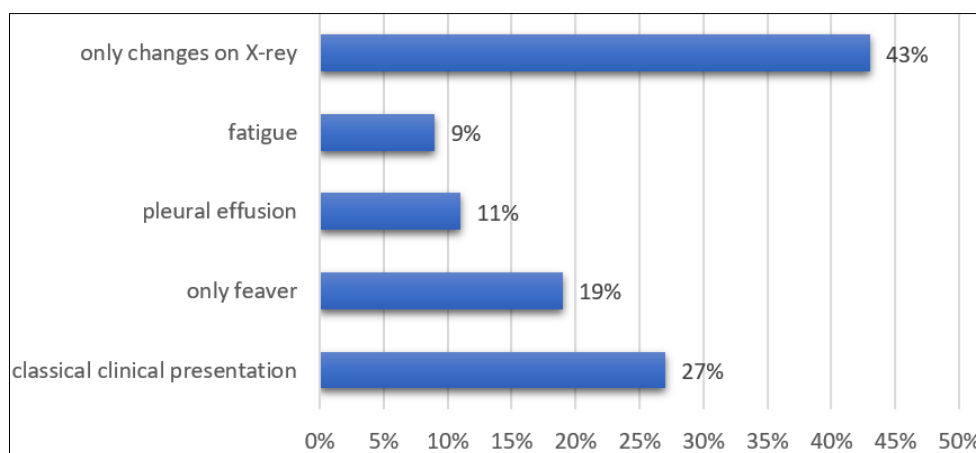


Fig 1: Prevalence of symptoms in patients with CAP

3. Results and discussion

In remaining 103 patients a diagnosis of CAP have been made on admission, they formed the main group. However, only

27 % (n=28) had defined clinical and roentgenological criteria of CAP. Other 73 % had either one or two criteria described in fig. 2.

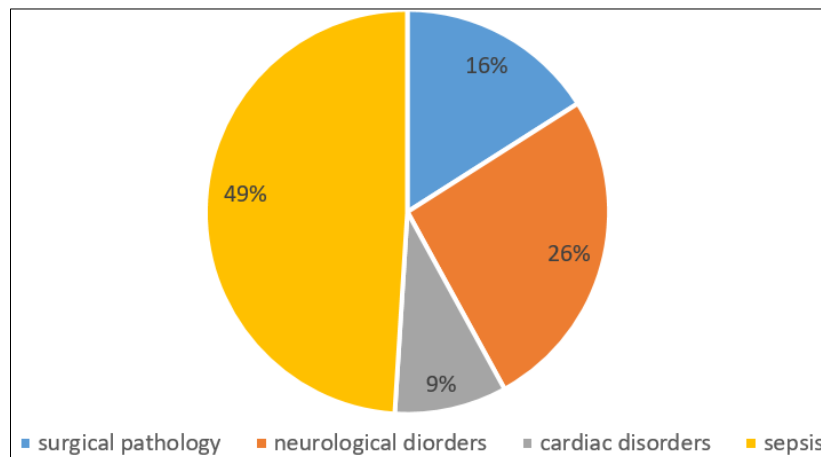


Fig 2: Diagnosis on admission that turned to be CAP

The number of lethal outcomes in patients of main group was 11 % (n=12), diagnosis discrepancy was detected in three cases.

We will use one of these cases to demonstrate how initial diagnosis of CAP can cover up another infectious disease with atypical clinical presentation.

3.1 Clinical case presentation

A 59-year-old male was admitted to ICU on 22.05.18 in severe condition with primary diagnosis: severe CAP of lower lobes of both lungs, RI 1. Presenting complaints: dyspnea at rest, fatigue, pain in the chest, which increases during deep breathing, fever up to 40°C.

3.2 On admission: patient is conscious, but confused, skin is pale, marked dyspnea at rest (RR=32), SpO₂ – 92 %, fever – 40°C, HR – 90/ min., BP 90/60 mm hg. Auscultation of the lungs revealed weak vesicular breathing over both lower lobes. Auscultation of the heart – mild systolic murmur over the apex. CBC – leukocytosis (14*10⁹, left band shift – 10 %). On ECG – sinus rhythm, signs of previous myocardial infarction (MI).

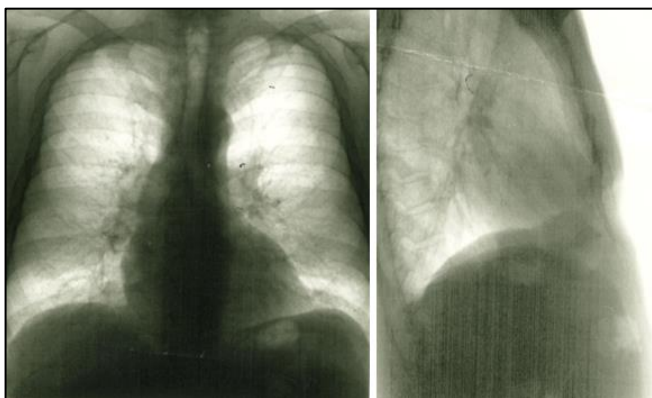


Fig 3: X-Ray of patient on the day of admission

3.3 Past medical history: considers himself ill for 12 days. First symptoms were fever and fatigue. He started antibiotic (cannot remember the name of the medication) from the first day of illness, but with no significant clinical effect. Fever

persisted and two days before admission a chest pain had occurred. Concomitant diseases: SCAD: class III, MI (2016). Persistent atrial fibrillation (AF) CHADS₂-VAS_c – 0. CHF, II A with preserved ejection fraction (EF) (58 %) f. c. 3 NYHA. For these conditions, he regularly took aspirin 100 mg and bisoprolol 5 mg.

In ICU patient was treated with i. v. ceftriaxone 2, 0 g + levofloxacin 500 mg and oxygen support. Patient showed no clinical improvement after 48 hours of therapy: fever up to 40°C, chest pain, leukocytosis (12*10⁹, left band shift – 15 %), CRP – 239 mg/l, PCT – 2,96 ng/ml. On ECG – paroxysm of atrial fibrillation. Test for troponin – negative. Computer tomography (CT) – revealed no infiltration in the lung tissue, but showed small hydrothoracs and hydropericard. Patient was suspected to have bacterial endocarditis. Therefore, he underwent an echocardiography, which revealed only fibrosis of aortic valve, regurgitation (small jet) on both mitral and tricuspid valves, EF was preserved (58 %). Taking into account negative clinical dynamic a change of antibacterial treatment was performed (vancomycin 1,5 g + meropenem 3 g daily), also antiarrhythmic agent have been added (amiodarone 600 mg a day). Patient showed mild clinical improvement, but deteriorated again on 6th day of treatment. Another echocardiography was performed, and this time there were signs of probable vegetation on aortic valve. For further investigation (transesophageal echocardiography) and treatment patient was transferred to department of cardiac surgery. Unfortunately, 24 hours after the transfer he deteriorated and died. Autopsy report confirmed endocarditis of aortic valve.

In this case, lack of clinical signs of pneumonia so as absence of infiltrative changes on CT helped to rule out CAP. On the other hand, high levels of markers of systemic inflammation and the course of disease were suspicious for septic process and paroxysm of AF alongside with episodes of left ventricle failure – helped to suspect and diagnose bacterial endocarditis. However, the pathological process had been persisting for too long before the diagnosis was confirmed, thus a multiple organ insufficiency developed.

To conclude, we would like use this clinical case to draw attention of physicians to importance of differential diagnosis in severe patients initially suspected for pneumonia but

lacking sufficient clinical proof later on. It is important to keep in mind a range of potentially lethal diseases, which mimic pneumonia in order to work out correct diagnosis as soon as possible.

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