Severe Measles Pneumonia in an Immunocompetent Adult

Oğuz Uzun, MD[1]; Murat Şalk, MD[2]; Serhat Fındık, MD[1]; Merve Bayrak, MD[1]; Levent Erkan, MD[1]

[1]Department of Pulmonary Medicine, Ondokuz Mayıs University, Samsun, Turkey.
[2]Department of Internal Medicine, Military Hospital, Samsun, Turkey.

Abstract

Severe pneumonia caused by measles virus is a rare condition in an immunocompetent adult. We report a 20 year-old man experiencing severe measles pneumonia. Diagnosis was based on clinical, radiologic and serologic findings. Supportive treatment was accompanied by prompt clinical and radiographical response.

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Key words: *measles pneumonia, severe, adult, respiratory failure.*

Introduction

Measles is traditionally a contagious disease which usually affects children. Young adults may also be affected (1,2). The prognosis of pneumonia caused by measles especially in the immunocompromised patients is poor (3,4). As severe measles pneumonia is an extremely rare condition in the literature, (5,6,7,8,9,10) there is no treatment proven to be effective for this disease. We report a case of severe measles pneumonia that completely responded to supportive measures.

Case Report

A 20 year-old man who was previously well had been hospitalized in the military hospital with a diagnosis of measles. His complaints of malaise, myalgia and fever had been lasting for a week. After then, rash became evident over the hairy scalp and face and spread out trunk and extremities. The patient mentioned about a skin eruptioned patient in the same ward in a dermatology clinic where he had been hospitalized because of verrruca vulgaris for three days, 14 days ago.

On third hospital day, dispnea had appeared and the patient was sent to our clinic due to worsening of his clinical situation and abnormal radiographical findings. Physical examination showed a toxic appearing cyanotic man, a temperature of 39 ^{o}C, pulse rate of 135/min, respiratory rate of 48/ min and blood pressure of 110/70 mmHg. A faded rash was observed on

Correspondance: *Dr. Oğuz Uzun*
Ondokuz Mayıs Üniversitesi,Tıp Fakültesi,
Göğüs Hastalıkları AD
55139 Kurupelit, Samsun, Türkiye

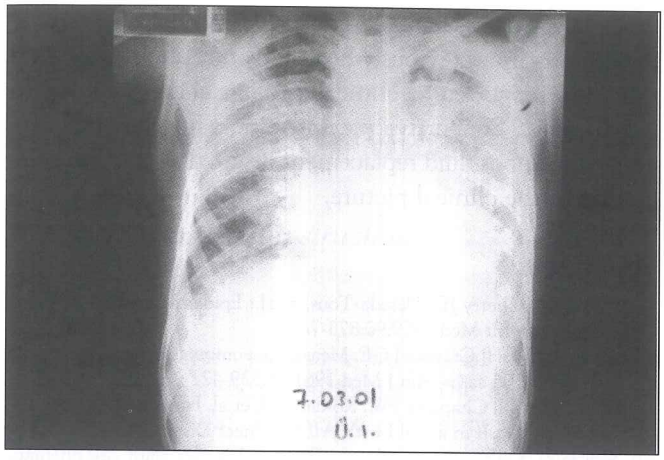

Figure 1. *Chest x-ray on admission showing diffuse bilateral alveolar opacity throughout the lungs.*

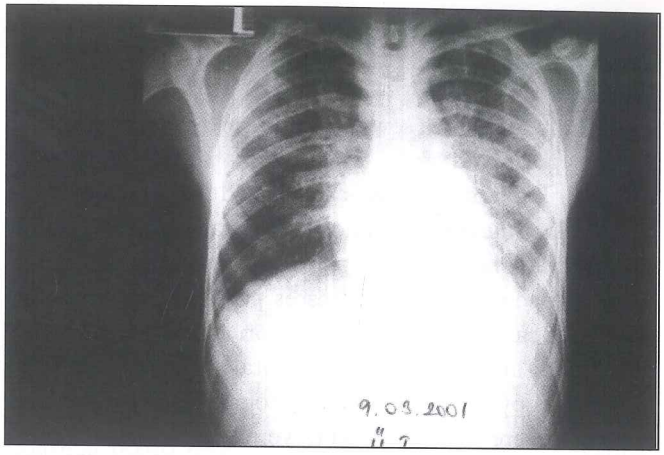

Figure 2. *Chest x-ray on second hospital day demonstrating a marked decrease in alveoler opacities.*

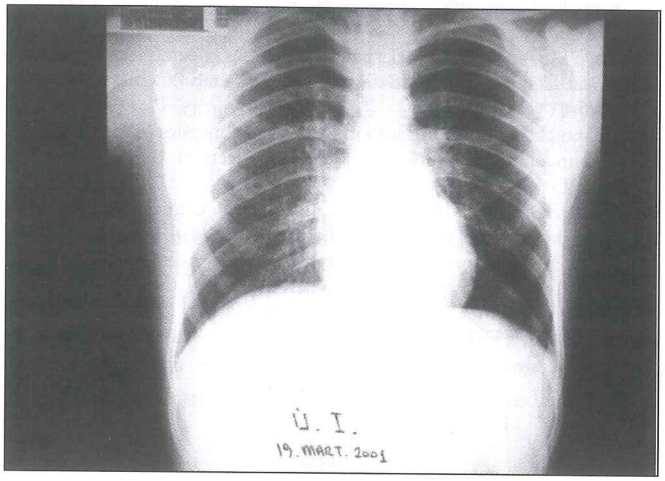

Figure 3. *Chest x-ray on day 12 was completely normal.*

his face, chest and upper extremities and there was also conjunktivitis. No Koplick's spots were observed. On the pulmonary auscultation bilateral end -inspiratory rales throughout both lungs and bronchial sound on the upper zones were remarkable. Complete blood count and serum biochemistry were within normal limits. Gram stain of sputum was unremarkable for microorganisms and asid-fast stain was negative. Arterial blood gases on room air were PaO_2 of 36 mmHg, $PaCO_2$ of 35.7 mmHg, pH of 7.49. A chest x-ray demonstrated bilateral diffuse alveolar opacities (figure 1). Oxygen administiration via nasal canule with 6 L/min and also cefuroxime axetyl and clarithromycin treatment empirically were started. Two days later, a control x-ray showed evident improvement (figure 2) and arterial blood gases were PaO_2 of 74 mm Hg and $PaCO_2$ of 38 mmHg. Meanwhile, blood and sputum cultures yielded no growth for any bacteria and the antibiotics were discontinued on the second hospital day. On day 4, arterial blood gases revealed normoxemia. We performed bronchoscopy as soon as as patient's situation became better on the fifth hospital day and transbronchial biopsy revealed mononuclear cellular inflammation. The patient showed progressive improvement and the chest roentgenogram by hospital day 6 revealed clear improvement. On hospital day 12, the patient was discharged with normal chest x-ray and no pulmonary complaints (figure 3). And finally acute and convalesent serum samples revealed fourfold rise for rubeola IgG titer, from 1:64, at admission, to 1:254, four weeks later. Results of human immundeficiency virus (HIV), hepatitis B and C antigen serology were negative.

Discussion

Pneumonia is the most common serious complication of measles and is the leading cause of death (11). The virus itself or bacterial superinfection may cause pneumonia. Pneumonia due to superinfection in adult patients seems to have a more benign prognosis then in children (2). Severe measles pneumonia is exceedingly rare condition in immunologically normal adults. To our knowledge, there are few cases of severe measles pneumonia in the literature. Fasler6 reported the case of a 28 year-old woman with severe pneumonia who required intubation and finally recovered. Chapnick et al. (8) reported a fatal measles pneumonia diagnosed at autopsy. Rupp et al. (7) presented a 29 year old woman experienced near-fatal measles pneumonia treated with high dose corticisteroids and vitamin A. Forni et al. (10) described six adult patients who had severe measles pneumonia. Intravenous ribavirin therapy was instituted to all patients and one of the patients who was HIV infected expired of progressive oxygenation failure. Wong and et al. (9) described nine severe measles

pneumonia patients. One of the two patients who died had AIDS.

Our case represents a severe complication of measles. The patient presented with typical signs and symptoms of rubeola. The diagnosis was confirmed serologically. The diagnosis of measles pneumonia is usually based on clinical and laboratory findings. Giant cell pneumonia is shown in some of the fatal cases postmortemly (8). We could not carry out bronchoscopy on admisson because of respiratory failure. On fifth hospital day, we performed bronchoscopy in which no endobronchial lesion and secretion were seen. However, we made a transbronchial biopsy through the medial segment of the right middle bronchus that resulted histopathologically as mononuclear type cellular inflammation. As there is no specific treatment of measles pneumonia; corticosteroids, vitamin A and ribavarin were used empirically in previous cases.We did not institute any specific treatment for rubeola, but supportive therapy with oxygen via a nasal cannule and intravenous fluid replacement were administered. Early radiographical and blood gas analysis improvement on the second hospital day supported our diagnosis rather than a bacterial infection and we did not continue antibiotic tretment as soon as we got the negative blood and sputum culture results. Our patient did not have any known dysfunction of the immune system. Supportive treatment resulted as complete radiographic and clinical improvement on day 12.

In conclusion, we have described a case of severe measles pneumonia in a previously healthy young adult. The diagnosis was supported by clinical serological and radiographical findings. Supportive measures including nasal oxygen and intravenous fluid replacement resulted as complete resolution of the clinical picture.

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