IMAGES

Clinical Images

A Pneumonic Confusion

A 50-year-old Austrian man gradually developed headache, fatigue, vomiting, and dyspnea while trekking in the Everest region at about 4000 m. He was transported to Kathmandu (1300 m) by helicopter. On physical examination at a clinic in Kathmandu, his heart rate was 88, blood pressure 150/90 mm Hg, respiratory rate 23, temperature 37.5°C, and oxygen saturation 70% on room air. Auscultation of the lungs revealed bilateral crackles. His tandem gait was normal. His chest radiograph is shown in Figure 1.

What is the diagnosis and treatment?

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Figure 1. Chest radiograph on presentation.

Figure 2. Chest radiograph on day 2, following treatment.

Diagnosis: High altitude pulmonary edema

The patient was diagnosed with severe acute mountain sickness (AMS) and high-altitude pulmonary edema.

Acute mountain sickness is a symptom complex associated with ascent to high altitude; AMS usually begins about 12 to 24 hours after reaching a higher altitude, but it may start as soon as 2 hours or as late as 96 hours after ascent.¹ It is characterized by headache and at least one other symptom from the following categories: gastrointestinal (including anorexia), dizziness, fatigue, and disturbed sleep. Patients with mild cases can stay at the same altitude while the symptoms resolve by acclimatization over the course of 1 to 3 days.² More severe cases require prompt descent. Oxygen and other drugs are useful adjuncts to treatment. High-altitude cerebral edema is a more severe form of AMS, characterized by altered mental status and ataxia.³ Since the patient had a normal mental status and a steady tandem gait, he did not have high-altitude cerebral edema.

High-altitude pulmonary edema is a noncardiogenic form of pulmonary edema.⁴ Its remarkable hallmark, as compared with other causes of pulmonary edema, is rapid reversibility by timely descent with or without oxygen. As with AMS, drugs may be helpful. Mild cases

can sometimes be treated at moderate altitude with bed rest and oxygen.⁵ More severe cases, such as the one presented here, require immediate descent. The chest radiograph (Figure 1), which is typical of patients experiencing high-altitude pulmonary edema, shows normal heart size with heterogeneous, bilateral infiltrates more prominent on the right than on the left,⁶ sometimes referred to as a “butterfly” pattern. With high-flow oxygen and bed rest, the patient recovered in 2 days. At that time he had a normal chest radiograph (Figure 2). For decades this life-threatening illness was confused with pneumonia.⁷

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