Chemical Pneumonitis

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A 32 year old man working in a jewellery shop unknowingly used nitric acid which is used for cleaning of jewels, in the toilet for cleaning. After inhalation of acid fumes he developed cough, breathlessness, chest tightness and got admitted in our hospital. On examination patient was conscious, oriented, not cyanosed, tachypneic, but with normal SpO2 and stable vital parameters. He had bilateral crackles at admission and his other systems examination were normal. His routine laboratory investigations were normal. Chest X ray showed bilateral midzone alveolar infiltrates (Fig. 1) and a diagnosis of chemical pneumonitis was entertained. He was treated with bronchodilators and nebulisation with steroids. Patient responded well, his dyspnea progressively reduced and at the end of a week, repeat X-ray showed marked resolution of alveolar infiltrates (Fig. 2).

Chemical pneumonitis is a well known complication which occurs after inhalation of toxic fumes or gases. The initial pathological events involving the distal airways are caused by cellular toxicity of the inhaled agent which compromises the impermeability of alveolar capillary interface. In the absence of intact alveolar interface severe pulmonary edema can develop and impair gas exchange. The severity of pulmonary edema which develops typically after a latent period depends on dose inhaled. This process may lead to mild alveolar infiltrates to diffuse alveolar damage leading to adult respiratory distress syndrome. Even a single exposure can lead to long term sequelae like Reactive Airway Dysfunction Syndrome [RADS], Bronchiolitis Obliterans, Bronchiolitis Obliterans with Organising Pneumonia [BOOP].

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