

Accidental Acute Talcum Powder Inhalation in an Adult: A Rare Case with a Short Review of Literature

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ABSTRACT

Acute talc powder inhalation is very rare in adults, though it is commonly reported in the infants and children. This is a report of a medical student who collapsed following accidental inhalation of talc powder at the college premises. A short review of the symptoms and complications along with the pathophysiology of pulmonary injury in acute talc inhalation also has been discussed over here.

Keywords: Laryngospasm, Respiratory distress, Talc powder.

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Sir,

A 19-year-old medical student, who was attending a lecture class, suddenly developed severe cough and went to the washroom to avoid disturbing the ongoing lecture. He was later found in a state of unconsciousness in the washroom and was having stridor. His teacher, being a practicing anesthetist, recognized the acute laryngospasm and started cardiopulmonary resuscitation with the help of other students at the washroom itself. The patient responded promptly, the return of spontaneous circulation (ROSC) was within 2 minutes, and the cyanosis disappeared completely as he started to breathe normally. He was made to take the bronchodilator inhaler found in his bag and was shifted to the nearby speciality hospital.

This student was a known case of bronchial asthma and was using bronchodilator inhaler intermittently. He had accidentally inhaled talcum powder on opening an unknown packet found in his bag, which was in fact planted as prank by his friends. In the emergency room, he was fully conscious but could not recollect the events related to his sudden collapse. His vital signs were normal and oxygen saturation was 100%. His general physical examination, cardiovascular, and respiratory system were essentially normal. His hemogram, chest X-ray, ECG, and metabolic parameters were again normal. The patient was treated with parenteral corticosteroids, bronchodilators as nebulization along with IV fluids. He was observed for 48 hours in the hospital and was discharged. A follow-up was done after 3 days and he was perfectly normal.

DISCUSSION

Acute accidental talc inhalation is quite common in infants and preschool children as their parents often use talc for routine skin care. But, acute talc inhalation in adults producing a life-threatening acute laryngeal spasm has not been reported in the literature to the best of our knowledge. Talcum powder is basically an anhydrous magnesium silicate (90%) and rest is magnesium carbonate or zinc oxide. Talc when ingested or applied to the skin is harmless but clinical features of talc inhalation could vary from minor symptoms like cough, sneezing to serious respiratory symptoms like dyspnea, cyanosis, or respiratory distress as seen in our patients; many times it could be fatal as well. In cases of mild to moderate inhalation of talc, the clinical features of respiratory distress could appear as late as few hours.^{1,2}

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Talc being insoluble in water tends to dry up the mucous membrane of the tracheobronchial tree on inhalation. It inhibits the clearing of the particulate matter in the airways by virtue of impairing the ciliary function of the mucosa. The talc powder could also result in mechanical obstruction of the smaller airways. In addition, the adsorption of the surfactant to the magnesium silicate powder would add to the pulmonary injury. The pathological changes seen include edema, inflammation of the bronchial epithelium, pneumonitis, bronchiolitis, diffuse infiltrates, and acute lung injury, which result in acute respiratory distress syndrome. The reported mortality in the cases of severe talc pulmonary toxicity ranged from 20 to 33% in few case series.^{2,3} Fortunately, our patient did not suffer any such lung injury.

The talc inhalation in adults usually results in subacute or chronic pulmonary diseases known as pulmonary talcosis. This condition is characterized by chronic bronchitis, interstitial fibrosis, and/or granuloma formation. Unlike, what is seen in the children, over here, the disease is slowly progressive and most of the time is an occupational disease. The patterns of pulmonary disease related to talc exposure can be of four types: (1) talco-silicosis, caused due to inhalation of talc contaminated with silica, (2) talco-asbestosis due to inhalation of talc contaminated with asbestos, (3) pure talcosis due to inhalation of talc in the absence of other minerals, and (4) pulmonary talcosis in intravenous drug abusers.⁴

Maintaining the adequate ventilation and oxygenation is the key in the management of acute talc inhalation causing acute

pulmonary injury. In addition to supplementation of oxygen, intubation and mechanical ventilation may also be needed. Inhaled bronchodilators and oral/parenteral corticosteroids have been frequently used, though there are no strong supporting data in the clinical trials conducted. Bronchoalveolar lavage is another option, which is again based on only few anecdotal reports.³ The natural history of pulmonary talcosis is said to be slowly progressive, even after exposure has ceased and there is no specific treatment.⁴

DECLARATION OF PATIENT CONSENT

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his names and initials will not be

published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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