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Colchicine Toxicity: A Patient With Pneumopericardium

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Abstract: Colchicine is a highly active alkaloid with antiinflammatory properties. It is effective in gout, Behçet's disease, familial Mediterranean fever, cirrhosis and may be effective in scleroderma, sarcoidosis and skin disorders. Colchicine overdose is a rare but serious problem. Gastrointestinal distress is the earliest and most common manifestation and myelosuppression, cardiovascular

collapse and respiratory failure are common life-threatening side effects (1, 2). We report a patient with colchicine toxicity who developed pneumopericardium during his clinical course. Pneumopericardium has not been reported before and should be considered in the case of colchicine overdose.

Key Words: Colchicine Toxicity, Pneumopericardium.

A 21-year-old male was admitted to the emergency department with nausea, vomiting, abdominal pain and bloody diarrhea 3 days after suicidal ingestion of 40 mg colchicine. Except for a heart rate of 120/min initial physical examination was normal. Laboratory workup showed elevated AST, ALT, bilirubin and creatine kinase. Chest X-ray was normal. Three days after admission, hemoglobin decreased to 8.8 g/dL, WBC to 3,900/mm³, and platelets to 42,000/mm³. Blood transfusion was started. On the 5th day, his hemoglobin was 8.2 g/dL, WBC 800/mm³ and platelets 10,000/mm³. Bone marrow (BM) aspiration was found to be aplastic. Blood transfusion was continued as needed. G-CSF (250 µg/m²/day) was administered for four days to treat neutropenia. On day 7, he developed respiratory distress, confusion, stool and urine incontinence, myopathy, and neuropathy. Chest X-ray revealed minimal pneumopericardium on the left side of the cardiac shadow (Figure 1). Cranial computed tomography showed cerebral edema. The patient was questioned to ensure that he did not perform the Valsalva maneuver as a result his severe abdominal pain. Pneumopericardium did not cause any hemodynamic disturbances. Dexamethasone and mannitol were administered for 3 days for cerebral edema. Myelosuppression and pneumopericardium resolved on day 10 whereas neurological and laboratory findings improved gradually. The patient was discharged on the 25th day of his hospital stay.

Colchicine poisoning is a rare but life-threatening toxicologic emergency. Typically it has three phases: 1-initial symptoms predominantly with gastrointestinal side effects 2-multiorgan failure and 3-recovery phase (3). Bone marrow, gastrointestinal tract, liver, heart, muscles and brain are most commonly affected. Side effects are dose dependent. Our patient had ingested 0.7 mg/kg colchicine. In a review of 150 overdosed patients, it was found that only minor gastrointestinal system manifestations occur after ingestion of less than 0.5 mg/kg colchicine. 10% mortality and myelosuppression develop with a dose of 0.5-0.8 mg/kg. Cardiogenic shock and 100% mortality rate were observed in those who were exposed to greater than 0.8 mg/kg (4). Gastric lavage and administration of oral-activated charcoal are required in the early management of colchicine overdose. Specific Fab anti-colchicine antibody treatment in patients and experimental glutamic acid and aspartic acid therapy in poisoned mice have been shown to be effective (5). In our case, Fab was not used because it is not commercially available. Myelosuppression was a clinical finding of colchicine intoxication. It is known that G-CSF is effective in the treatment of neutropenia due to colchicine (6). We treated neutropenia with 250 µg/m² G-CSF for four days.

In the case described here pneumopericardium which developed on the seventh day of colchicine ingestion was an intriguing problem. There is no report of



Figure 1. Chest X ray showing minimal pneumopericardium on the left side of cardiac shadow.

pneumopericardium due to colchicine overdose in the literature. Pneumopericardium related to intoxication by paraquat, a herbicide, was reported previously. It has been postulated that paraquat induces alveolar damage and subpleural bullae formation occurs. It results in spontaneous rupture and gas in the alveoli invades the pericardium, mediastinum and subcutaneous tissues (7). In the literature, it was reported that pneumopericardium may also develop spontaneously as well as with barotrauma, infections such as klebsiella, tuberculosis, CMV, aspergillus, malign disorders such as lymphomatoid granulomatosis, and surgical procedures (8-15).

In our review of the literature, we did not find any reports of colchicine overdose with pneumopericardium. This is the first report of colchicine overdose with pneumopericardium. It should be pointed out that if there is no conclusive evidence of the association of colchicine toxicity with pneumopericardium, the findings of this case do not prove but suggest the association.

In conclusion, colchicine overdose may be associated with pneumopericardium and patients should be monitored for this complication.

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