

## Pill Pneumonitis Induced By Pill Aspiration: A Case Report, Diagnosis and Management

Swarada Yadav\*, Sundeep Shah, Sumaita Waqar, Ramy Ibrahim

Internal Medicine, University of Alabama at Birmingham, Birmingham, USA

\*Corresponding Author: Swarada Yadav, Internal Medicine, University of Alabama at Birmingham, Birmingham, USA

Received date: 01 August 2022; Accepted date: 15 August 2022; Published date: 19 August 2022

Citation: Yadav S, Shah S, Waqar S, Ibrahim R (2022) Pill Pneumonitis Induced By Pill Aspiration: A Case Report, Diagnosis and Management. J Med Case Rep Case Series 3(10): <https://doi.org/10.38207/JMCRCS/2022/OCT03100375>

Copyright: © 2022 Swarada Yadav. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

### Abstract

Pill pneumonitis is a rare and life-threatening disease caused by the aspiration of a medication pill. Our case is about a 71-year-old male who presented in the Emergency Department (ED) with a complaint of choking on a Vitamin D pill. Computed Tomography (CT) scan revealed a round foreign body consistent with an aspirated pill in the bronchus intermedius. When the patient underwent bronchoscopy on day two, the pill disintegrated causing local inflammation. The patient was stabilized and treated symptomatically and referred to a tertiary care center for further evaluation. The patient went to a tertiary center three weeks later with persistent complaints of hemoptysis, cough, and shortness of breath. Bronchoscopy revealed mucosal irregularity with protruding non-bleeding vessels on the posterior wall. The mucosa was extremely friable and easy to bleed. The patient was treated at the tertiary hospital and discharged with minimum residual symptoms. Three months later the patient showed up at the primary care physician's (PCP) office with hemoptysis, cough, and shortness of breath. On examination, he still had residual wheezing and rhonchi. The patient was prescribed codeine and guaifenesin syrup along with budesonide suspension via inhalation which provided symptomatic relief to the patient. The patient's condition can be managed long-term symptomatically but airway healing is not possible due to underlying permanent fibrosis.

This case highlights the importance of swift initiation of treatment in cases involving pill aspiration as the pill could disintegrate quickly leading to incurable permanent airway damage. Prompt management includes rapid attempts to remove the pill along with symptomatic relief agents like nebulizers and steroids.

### Introduction

Accidental pill aspiration while swallowing a pill is an emergency due to the fear of mucosal injury and inflammation [1]. It can lead to life-threatening consequences [1]. Elderly and young children are at higher risk of aspiration [2]. Patients with swallowing disorders are also prone to aspirate pills while swallowing [3]. Aspiration of a pill may usually present with sudden dyspnea, dry cough, rhinorrhea, unusual sensation in the chest, and other nonspecific symptoms [4]. The final diagnosis is usually made based on the history, evidence of acute symptoms of distress, and presence of a foreign body during bronchoscopy or CT scan [5]. Treatment usually focuses on the immediate removal of the pill to reverse the inflammation and reduce the symptoms [6]. An emergency bronchoscopy with an attempt to remove the pill is the most ideal way to manage such patients with known aspirations [4]. Time is a key factor while managing these patients.

### Case Presentation

A 71-year-old male with a past medical history of swallowing disorder presented to the Emergency Room with the complaint of choking on a Vitamin D pill. The patient had a history of worsening coughing and choking when he drank or ate pills. When he aspirated

the pill, he tried to cough it out but failed to do so. On arrival, the patient had a saturation of peripheral oxygen (SpO<sub>2</sub>) of 89 % and blood pressure of 136/84. The rest of the vitals were stable. A lung examination showed bronchial wheezing on the right side. The patient was started on a nebulizer which improved the SpO<sub>2</sub> to 92 %. Supplemental oxygen was used to maintain the oxygen level above 94 %. The patient was further evaluated with a CT scan of the chest which revealed a 12 mm round foreign body, consistent with an aspirated pill in the bronchus intermedius. The rest of the lung was free of any infiltrate, effusion, or pneumothorax. Pulmonary consultation was requested to further evaluate and manage the patient. Bronchoscopy was performed on day two. Bronchoscopy revealed severe bronchospasm. The mucosa in the right bronchus was white and seemed to show some extent of mucosal damage. Endobronchial biopsy showed benign bronchial mucosa with focal congestion. Bronchial lavage showed no growth at 24 hours. Minimal bleeding was seen during the procedure. No pill was noted in the airway. On day three of the hospitalization, the patient was stable with wheezing improved on the right side. The patient was discharged home with steroids and instructions to use the nebulizer. The patient was referred to a tertiary center for possible cryotherapy and injectable steroids.

Three weeks later the patient went to a tertiary center outpatient department with a history of recurrent episodes of hemoptysis. On arrival, the patient had all vitals stable with SpO<sub>2</sub> of 94 % and respiratory rate of 20 respirations/minute. Chest X-ray (CXR) showed right-sided opacities. Pulmonary angiogram showed branching filling defect in multiple left lower lobe segmental pulmonary artery branches. For further evaluation bronchoscopy was performed which showed normal nasopharynx, oropharynx, larynx, vocal cords, and left lung but revealed mucosal irregularity with protruding non-bleeding vessels on the posterior wall. The mucosa was extremely friable and easy to bleed. After stabilization of the patients with IV fluids and IV steroids for a week, a repeat bronchoscopy was done which showed bronchial stenosis, the dynamic collapse of the tracheobronchial tree, and granulation tissue in the bronchial intermedius. Cryotherapy was done to prevent bleeding, after which the patient appeared stable over the next couple of days with improved breathing and no events of hemoptysis. The patient was deemed fit for discharge. Upon discharge, the patient was asked to continue to take a step-down dosage of steroids, benzonatate, and cough syrup with codeine as needed.

Three months later while at the primary care provider (PCP) office the patient still complained of a small amount of hemoptysis, cough, and shortness of breath. On examination, he still had residual wheeze and rhonchi on the right side of the lung. He had undergone multiple bronchoscopies to relieve the symptoms. While at the PCP, he was prescribed cough syrup containing codeine and guaifenesin along with budesonide suspension via inhalation. The patient responded well to the treatment. Budesonide is known to have low lipophilicity and high hydrophilicity leads to lower distribution within the tissue thus making it an ideal drug for quicker absorption into the lung

mucosa for local action [7]. It is also known to have faster elimination and thus causes lesser adverse effects [7].

## Discussion

Pill aspiration is a rare phenomenon in adults but could be seen in the elderly with swallowing difficulties [2,5,6]. Early intervention may help improve the prognosis of the patient by reducing the contact time of the pill with the mucosa and thus leading to lesser damage [2,8]. The disintegration of the pill (tablet/ capsule) leads to chronic irritation of the mucosa leading to fibrosis as seen in our case [5].

The most frequent location of obstruction of a foreign body is the bronchus intermedius [5,9]. The treatment of choice is the removal of the pill with the help of bronchoscopy to prevent further damage [1,3]. This would lead to a shorter contact time causing only local irritation. If the pill disintegrates, it may lead to chronic contact with the mucosa causing pneumonitis and fibrosis as seen in our patient [1]. Involvement of the blood vessels may be seen and could cause hemoptysis and massive blood loss which may go unidentified for a long period [5,10].

Operative bronchoscopy with possible cryotherapy to stop the bleeding is the treatment of choice for bronchial stenosis with acute bleeding [1,5,7,9,11]. Budesonide can be one of the treatment options as it not only is fast acting but provides symptom relief and reduces breathlessness with long-term use [7].

## Conclusions

Pneumonitis induced by a pill is commonly seen in elderly patients with pill aspiration. It may progress quickly leading to rapid deterioration of the patient. The airway could be compromised leading to a life-threatening situation. Thus it is crucial to promptly initiate the treatment and prevent the sequelae.

## References

1. Caterino U, Battistoni P, Batzella S, Iacono RD, Lucantoni G, et al. (2015) Syndrome of iron pill inhalation in four patients with accidental tablet aspiration: severe airway complications are described. *Respiratory medicine case reports*. 15: 33-35.
2. Chu A, Krishna A, Paul MP, Sexton JF, Mirchia K (2018) Obliterating bronchiolitis: result of iron pill aspiration. *Cureus*. 10(5): e2571.
3. Tarkka M, Anttila S, Sutinen S (1988) Bronchial stenosis after aspiration of an iron tablet. *Chest*. 93(2): 439-441.
4. Tamburrini M, Jayalakshmi TK, Maskey D, Sharan N, Guiseppa D, et al. (2019) Multivitamin pill aspiration leading to hemorrhagic bronchial necrosis. *Respiratory Medicine Case Reports*. 28: 100944.
5. Lee P, Culver DA, Farver C, Mehta AC (2002) Syndrome of iron pill aspiration. *Chest*. 121(4): 1355-1357.
6. Mehta AC, Khemasuwan D (2014) A foreign body of a different kind: pill aspiration. *Annals of Thoracic Medicine*. 9(1): 1-2.
7. Tashkin DP, Lipworth B, Brattsand R (2019) Benefit: risk profile of budesonide in obstructive airways disease. *Drugs*. 79(17): 1757-1775.
8. Tlhabano L, Mankikar R, Odigwe C, Owens W, Grant L, et al. (2018) Iron pill pneumonitis with reactive lymph nodes. *Proc (Bayl Univ Med Cent)*. 31(4): 470-472.
9. Qian ET, Lentz RJ, Johnson J, Maldonado F (2022) Aspiration of zinc tablet leading to chemical burn of the airway: Case report. *Medicine: Case Reports and Study Protocols*. 3(2): e0214.
10. Kinsey CM, Folch E, Majid A, Channick CL (2013) Evaluation and management of pill aspiration: case discussion and review of the literature. *Chest*. 143(6):1791-1795.
11. Jimenez Rodriguez BM, de Jesús SC, Merinas López CM, González de Vega San Román JM, Romero Ortiz AD (2013) Bronchial stenosis after iron pill aspiration. *Journal of Bronchology & Interventional Pulmonology*. 20(1): 96-97.