Intranasal Acetaminophen Abuse: A Case Report and Review of the Literature

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Introduction

There are approximately 2.500 first-time users of prescription pain medication each day, with an estimated 2.6 million new patients prescribed pain medications each year.1 In regards to acetaminophen, the most recent available data shows that 24.6 billion doses of acetaminophen were sold in 2008.2 Intranasal abuse of prescription pain medicine is well described, however there are few reports of intranasal abuse of over-the-counter pain medications.3 Diffuse nasal mucosal involvement of characteristic necrosis with white exudate, potentially accompanied by perforation of the nasal septum, nasal floor, or palate can lead to misdiagnosis and delayed treatment.

Pathology and Cultures

Biopsies revealed necrotic soft tissue diffusely involved with fungal elements Aspergillus fumigatus and Candida krusei. They involved the luminal space and walls of vascular structures within the necrotic soft tissue. The patient was treated with a 9 week course of Voriconazole per the Infectious Disease team.

Case Report

We report a case of a 20-year-old woman who presented with hoarseness, odynophagia, sore throat, and headache for 6 months with an associated 92 pound weight loss. Seven months prior to presentation, she began intranasal inhalation of crushed acetaminophen tabs. After 3 months of abuse she developed epistaxis, cough, and shortness of breath, then was treated for suspected fungal infection by Infectious Disease physicians. A computed tomography scan revealed heterogenous upper airway mucosal thickening containing multiple small locules of air concerning for mucosal necrosis as well as a multilobar pneumonia. Operative debridement, irrigation, and biopsies were obtained the day after presentation. The findings showed thick, white, powdery plaques throughout the nasal cavity, pharynx, and larynx. Irrigation, debridement, and biopsies were obtained. Greater than 75% of the nasal septum was perforated, the turbinates and soft palate were eroded, the uvula was absent, the epiglottis was eroded and indistinct, and the left pyriform sinus was blunted (Figs. 1-4). The white plaques continued into the trachea and bronchi without distinct endobronchial lesions. During her hospital course, she failed oral intake trials and required gastrostomy tube feedings. She refused placement of a nasal trumpet and developed right-sided nasopharyngeal stenosis. The patient was seen at a 4 month follow-up, and had a near-total septal perforation, right-sided nasopharyngeal stenosis, and supraglottic stenosis due to aryepiglottic fold adhesions.

Discussion

Previous reports of intranasal drug abuse describe early use of oral antibiotics to treat a presumed, and misdiagnosed, pharyngitis.4 This highlights a delay in diagnosis which may be due to patients withholding information. Interestingly, patients who inhale medications through one nostril exclusively typically have unilateral disease, which can help rule out most infectious etiologies. In some cases, it is possible to visualize crushed pill debris in the nasal cavity. In other cases, analysis of intranasal debris can confirm the suspicion of drug abuse. Septal perforations have been reported in 51-66% of patients with intranasal drug abuse containing acetaminophen.2,3

Studies similar to our report reveal pathology and cultures with non-invasive fungal disease in 85.7% of patients who abused intranasal acetaminophen-hydrocodone.5 These patients did not respond to antifungal treatment; however, their infections resolved with cessation of intranasal drug abuse. It is hypothesized that tissue necrosis facilitates saprophytic fungal growth.6 The most common fungus involved with intranasal drug abuse is Candida albicans, with Aspergillus fumigatus being the second most common fungus.4

Conclusions

• Intranasal acetaminophen abuse can lead to significant destruction of nasal, pharyngeal, and supraglottic anatomy as well as contribute to lower airway disease as seen in this patient.
• Acetaminophen is a common over-the-counter drug, easily available to patients of all ages.
• Intranasal drug abuse is often misdiagnosed or left undiagnosed, with initial treatments aimed at infectious etiologies. Patients presenting with nasal and nasopharyngeal abnormalities such as erosion of the oronasal mucosa or nasal septal perforation should raise suspicion of intranasal drug abuse.

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References