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CASE REPORT

A Complete Resolution of Sialadenitis Induced by Iodine Containing Contrast with Intravenous Dexamethasone Infusion

Homam Alkaied, Kassem Harris, Basem Azab and Marcel Odaimi

Staten Island University Hospital, 475 Seaview Ave, Staten Island, NY 10305, USA.
Corresponding author email: homam.md11@yahoo.com

Abstract: Salivary gland enlargement following the administration of iodine is an extremely rare event, and the pathophysiology of iodine-induced sialadenitis is not yet fully known. The onset of symptoms can start within a few minutes to five days after contrast administration. The course of iodine-induced sialadenitis is extremely benign, and rapid resolution of symptoms is expected without treatment. We report the case of a 59-year-old white female who noted mildly painful swelling involving the right side of her face within five days of receiving intravenous iodine-containing contrast. A diagnosis of iodine-related sialadenitis was made. She was given 20 mg of decadron intravenously, with prompt resolution of the swelling within a few hours.

Keywords: iodine, contrast, sialadenitis

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Introduction

Salivary gland enlargement following iodine administration, or sialadenitis, is an extremely rare event and only a few cases have been presented in the literature. The first two cases were initially reported in 1956 by Sussman and Miller.[1] Sialadenitis is associated with (intravenous or oral) iodine-containing contrast media. As little as seven drops of oral iodine in adults[2] and oral iodine-containing anti-cough syrup in children[3] have been reported to induce this complication. Ionic or non-ionic,[4] high or low osmolar[5] iodinated contrast can induce this condition, which can also recur with subsequent exposure to contrast.[6]

Case Report

We report the case of a 59-year-old white female with a past medical history of pituitary adenoma resected in 1987, and metastatic colon cancer currently treated with systemic chemotherapy. The patient underwent a computed tomography (CT) with intravenously administered iodine-containing contrast to evaluate her response to chemotherapy. Due to prior history of a rash from iodine-containing contrast, she was pre-medicated with prednisone both 12 and 2 hours before contrast injection. Within five days of the CT, she noted mildly painful swelling involving the right side of her face. She sought medical attention 10 days after the CT, and the physical exam revealed significant bilateral parotid gland enlargement that was worse on the right side. A diagnosis of iodine-related sialadenitis was made, and she was given 20 mg of decadron intravenously, with prompt resolution of the swelling within a few hours.

Discussion

Acute sialadenitis has been defined as a rare complication following the administration of an iodine-containing contrast. The condition is characterized by rapid, painless, bilateral swelling of the salivary glands. The onset of sialadenitis ranges from within a few minutes to five days after contrast administration,[4] and the condition is known as "iodide mumps."

The differential diagnosis in our case includes tumors, cysts, trauma, actinomycosis, sialoliths, sialadenitis from infection, sinlodectitis with subsequent strictives of the ducts, and other conditions that result in tenderness and swelling.[7] In our case, the onset of symptoms within five days of contrast administration, bilateral presentation, lack of an infectious syndrome, and rapid resolution of symptoms after decadron infusion support our diagnosis.

The pathophysiology of iodine-induced sialadenitis is not yet fully known. The iodine concentration in the salivary gland has been reported to reach up to 100 times that of the plasma level.[8] Hence, the high concentration of iodine in the saliva following iodine exposure causes inflammatory edematous swelling of the mucosal duct, which leads to obstructed salivary excretion and subsequent salivary gland swelling.[9] Impaired renal function results in decreased contrast excretion, leading to a significant increase in the iodine concentration in the salivary glands, which then increases the risk of sialadenitis. However, sialadenitis has also been reported in patients with normal renal function,[10] so it is suggested that other factors may provoke this condition.

The course of iodine-induced sialadenitis is extremely benign, and rapid resolution of symptoms is expected without treatment.[11] Alternatively, analgesics and NSAIDs can be considered in severely symptomatic cases, while steroidal therapy has been reported to offer an inconclusive benefit.[5,12] Patients with renal dysfunction may benefit from dialysis.[13] The long-term significance of iodide mumps is yet to be determined. Patients receiving chemotherapy are at a greater risk of this rare but benign complication because they undergo multiple imaging studies that include the administration of an iodine-containing contrast.

Our case is unique for multiple reasons. First, the patient experienced iodine mumps despite normal creatinine clearance. Second, she had rapid recovery after decadron infusion, and finally, she was given steroidal therapy prior to contrast exposure, indicating that such an approach does not prevent sialadenitis. Finally, this is the first case to report the occurrence of iodine mumps in a metastatic cancer setting.

In conclusion, iodide-induced sialadenitis is an extremely rare condition that occurs following the administration of an iodine-containing contrast material. The prompt recognition of this complication should result in the avoidance of an expensive investigation and the expectation of rapid, complete recovery.

Author Contributions

Conceived and designed the experiments: HA. Analysed the data: HA. Wrote the first draft of the manuscript: HA. Contributed to the writing of the manuscript: HA, KH, BA, MO. Agree with manuscript results and conclusions: HA, KH, BA, MO. Jointly developed the structure and arguments for the paper: HA, MO. Made critical revisions and approved final version: HA. All authors reviewed and approved of the final manuscript.

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