



## Case Report

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# Submandibular Salivary Glands Swelling after Computed Tomography Contrast Media

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## Abstract

Swelling of the salivary glands following the administration of iodine-containing contrast media, known as “iodide mumps”, is a rare but benign adverse reaction. In this paper, a case of iodide mumps is presented.

## Introduction

Acute iodide sialadenitis, or “iodide mumps,” is an adverse reaction to iodinated contrast media causing salivary gland swelling minutes to days after iodine exposure [1]. The prognosis of iodide mumps is benign. Clinical features persist for 4-hours to 14-days, with complete healing without sequelae [2].

Several studies have suggested that this condition may be underdiagnosed, with an incidence of 1-2% [3] and less than 80 cases reported in the literature to date [4]. Originally thought to be IgE-mediated, the swelling symptoms have been mistakenly attributed to angioedema or anaphylaxis [3]. The condition is thought to represent a response to iodine accumulation in the salivary glands, however the exact pathogenesis is still unclear [2].

Lack of physicians’ familiarity with this condition might result in underdiagnosis, excessive diagnostic workup and inappropriate treatment which therefore implies a misuse of resources and the risk of additional iatrogenesis [3].

## Case report

A 60-year-old patient with stage IIIA lung adenocarcinoma performed a Computed Tomography (CT) scan after completion of 4 courses of induction chemotherapy. After dinner, 12-hours after contrast media injection, he reported swelling of the submandibular salivary glands. Physical examination revealed bilateral submandibular salivary glands swelling, with mild tenderness at palpation (Figure 1). Submandibular salivary glands swelling disappeared 24-hours after contrast media injection.

At the next follow up CT scan, 4 months later, the patient experienced the same symptoms, which disappeared with no treatment (Figure not shown).

At the further follow up CT scan, 10 months later, the patient was advised to receive premedication with methylprednisolone 32 mg 12 hours and 2 hours before CT scan. With this premedication, the patient did not experience iodide mumps after iodinated contrast media injection.

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**Figure 1:** Swelling of the submandibular salivary glands occurring 12-hours after computed tomography contrast media injection.

### Discussion

Iodide mumps is a rare adverse reaction to iodine-containing contrast media administration, characterized by a rapid, usually painless enlargement of salivary glands [2].

A meta-analysis on the published case reports of iodide mumps in the medical literature identified 77 cases of iodide-induced sialadenitis. Median age was 63 years, and 61% (47/77) were males. Median time to onset was 16 hours, and symptoms resolved in a median of 3 days. Twenty-seven subjects (35%, 27/77) were reported to have an impaired renal function at baseline. Symptoms were resolved in all cases over a median of 3 days with no statistically significant difference between those who received therapeutic intervention and those who did not ( $p = 0.430$ ). Older age and longer time to onset were significantly associated with longer duration of symptoms, and presence of tenderness demonstrated statistically significant association with longer duration of symptoms [4].

Lucarelli et al conducted a review of the medical literature and found out approximately 50 cases of iodide mumps. Of these, 29 cases involved the submandibular glands, and 15 cases involved also the parotid glands. This can be supported by the observation that the submandibular glands have a more viscous, prominently mucin-rich, secretion [2]. Saro-Buendía et al conducted a prospective observational study. During the 2-months study period, 4 cases of contrast-induced sialadenitis were detected. Patients were aged 68-76 years and presented a bilateral submandibular gland swelling debuting 12 to 72 hours after an exposure to iodinated contrast. Characteristic ultrasonographic findings supported the diagnosis and the clinical course was self-limited after 60 to 150 hours [5].

The rarity of iodide mumps may hinder prompt diagnosis and appropriate treatment.

Differential diagnosis is with an overt allergic reaction, which can be ruled out by the lack of specific symptoms such as rash, angioedema, dyspnea and hypotension. Furthermore, anaphylactic reactions usually occur within 30 minutes after exposure to the antigen [2]. A wide variety of methods have been used to treat iodide sialadenitis, including antihistamines, corticosteroids, hyperhydration, and dialysis in patients with renal failure, none of which have proven efficacy [3]. Current treatment for iodide mumps consists in supportive therapy and administration of anti-inflammatory agents, whereas the role of steroids is still controversial [2]. In a case report, a 59-year-old white female with a diagnosis of iodine-related sialadenitis was given 20 mg of dexamethasone intravenously, with prompt resolution of the swelling within a few hours [6]. In our patient, premedication with methylprednisolone 32 mg 12 hours and 2 hours before CT scan proved effective to avoid recurrence of iodide mumps after CT contrast media injection.

The prognosis of iodide mumps is benign. There have been no reported life-threatening complications of the condition to date [2].

### Conclusion

In conclusion, iodide mumps is a rare but benign adverse reaction to iodinated contrast media injection. Because of the widespread use of iodinated contrast-enhanced imaging, such as CT, and interventional techniques, clinicians should be aware of this entity to avoid more aggressive diagnostic workup.

**Conflicts of interest:** The authors declare that they have no conflicts of interest.

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