

A Rare Case of Acute Contrast-Induced Sialadenitis after Percutaneous Coronary Intervention

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“Iodide mumps” is a form of aseptic sialadenitis known to complicate the use of intravascular iodinated radiocontrast agents. This complication is related to the effects of iodinated contrast media on the salivary gland and was described in both ionic and non-ionic compounds used intravenously or intra-arterially during coronary angiography in 36 cases [1-3]. Clinically, the condition is characterized by acute swelling of the salivary, mainly the parotid, glands following administration of the radiocontrast material. This complication is self-limited, and the prognosis is excellent without intervention. We report a patient who

developed swelling of the submandibular glands 12 hours after percutaneous coronary angioplasty. The swelling subsided completely within 72 hours.

PATIENT DESCRIPTION

A 62 year old man with a history of heavy smoking underwent primary coronary angioplasty because of an acute ST elevation inferior-posterior myocardial infarction, using 180 ml ioxaglate. His renal function was normal (creatinine 0.9 mg/dl). Twelve hours after the procedure the patient complained of dysphagia and swelling in his neck. Physical examination revealed bilateral submandibular salivary gland swelling without tenderness [Figure A]. His general condition was otherwise unremarkable; his body temperature was 36.7°C, there was no leukocytosis, but his amylase level was high (426 U/L, normal < 130 U/L). An otolaryngologist found

no pus at the glandular duct opening, and the presumptive diagnosis was contrast-induced sialadenitis, with the recommendation for conservative treatment (i.e., saline mouth care). The glandular swelling subsided completely within 72 hours of onset [Figure B], and his amylase level dropped as well (to 146 U/L). The rest of his hospitalization course was uneventful and he was discharged on the sixth day.

COMMENT

Sialadenitis complicating the intravascular administration of iodinated contrast media was first described in 1956 by Sussman and Miller [1], who coined the term “iodide mumps.” Since then, approximately 33 cases of iodide-associated sialadenitis have been reported with ionic contrast media and 3 cases have been reported with non-ionic contrast media. The onset of sialadenitis varied from min-



[A] Bilateral submandibular salivary gland swelling 12 hours post-radiocontrast sialadenitis.



[B] Spontaneous resolution of the swelling 72 hours later

utes to 5 days following the administration of contrast medium [2]. This complication generally resolves with supportive treatment alone. Antihistamines and corticosteroids have been used to treat iodide mumps, but there are no controlled trials for establishing their efficacy.

The precise mechanism for this complication is poorly understood. The reaction seems to be idiosyncratic or related to toxic accumulation of iodide in the ductal system of the salivary glands. The high concentration of iodide in the salivary glands appears to induce inflammation in the form of edematous swelling of the mucosa, which leads to ductal obstruction and inflammatory swelling of the salivary glands. Several studies concluded that this reaction occurs with both ionic and non-ionic agents as well as with high and low osmolar contrast agents, and with equal frequency [1-3]. Ben-Ami et al. [4], however, reported that it occurs more fre-

quently among patients who receive ionic contrast media. The risk for sialadenitis seems to be directly related to the serum iodide levels, thus renal insufficiency and a large iodide load are highly likely to be predisposing factors. Some reports have noted that the propensity of iodide-induced sialadenitis recurs in the same patient with repeated exposures to iodinated contrast medium [2,5].

Contrast-related sialadenitis should be differentiated from the more widely recognized form of suppurative sialadenitis for which antibiotic treatment and sometimes surgical drainage treatment is warranted. Clues that sialadenitis is induced by iodide rather than bacteria include: recent exposure to iodide, a bilateral presentation of the swelling, a non-toxic appearing patient, and history of a similar reaction in the past. Physicians caring for patients who receive intravascular radiocontrast agents should be aware of

this rare complication, thereby obviating unnecessary referrals to specialists and/or diagnostic evaluations that are costly, inconvenient, and risk additional iatrogenic sequelae.

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Capsule

Bacterial colonization factors control specificity and stability of the gut microbiota

Mammals harbor a complex gut microbiome, comprising bacteria that confer immunological, metabolic and neurological benefits. Despite advances in sequence-based microbial profiling and myriad studies defining microbiome composition during health and disease, little is known about the molecular processes used by symbiotic bacteria to stably colonize the gastrointestinal tract. Lee and co-researchers sought to define how mammals assemble and maintain the *Bacteroides*, one of the most numerically prominent genera of the human microbiome. They found that, whereas the gut normally contains hundreds of bacterial species, germ-free mice mono-associated with a single *Bacteroides* species are resistant to colonization by the same, but not different, species. To identify bacterial mechanisms for species-specific saturable colonization, the authors devised an in vivo genetic screen and discovered a unique class of polysaccharide utilization loci that is conserved among intestinal *Bacteroides*. They named this genetic locus the commensal colonization factors (*ccf*). Deletion of the *ccf*

genes in the model symbiont, *Bacteroides fragilis*, results in colonization defects in mice and reduces horizontal transmission. The *ccf* genes of *B. fragilis* are upregulated during gut colonization, preferentially at the colonic surface. When they visualize microbial biogeography within the colon, *B. fragilis* penetrates the colonic mucus and resides deep within crypt channels, whereas *ccf* mutants are defective in crypt association. Notably, the CCF system is required for *B. fragilis* colonization following microbiome disruption with *Citrobacter rodentium* infection or antibiotic treatment, suggesting that the niche within colonic crypts represents a reservoir for bacteria to maintain long-term colonization. These findings reveal that intestinal *Bacteroides* have evolved species-specific physical interactions with the host that mediate stable and resilient gut colonization, and the CCF system represents a novel molecular mechanism for symbiosis.

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 Eitan Israeli

**“Since my house burned down
 I now own a better view
 of the rising moon”**

Mizuta Masahide (1657-1723), Japanese poet and samurai