

When Mumps is Not the Diagnosis: Acute Sialadenitis During Influenza Season

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When Mumps is Not the Diagnosis: Acute Sialadenitis During Influenza Season

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Background

During the winter of 2014-2015, there were a significant number of children diagnosed with acute sialadenitis or parotitis from the emergency department with presenting complaints of URI symptoms and sore throat. In recent years, several states have reported outbreaks of mumps cases, and initial work-up was aimed to rule out this particular viral infection. As several of these children were also diagnosed with Influenza, this led to the hypothesis of Influenza as the cause of sialadenitis/parotitis. Literature search yielded few prior reports describing association between Influenza A and acute parotitis in the pediatric population, with most recent published cases reporting acute parotitis secondary to Influenza H3/N2 subtype.

Methods

Institutional chart review was performed for pediatric cases of facial swelling, revealing 12 cases with diagnoses of acute parotitis or sialadenitis between October 2014 and January 2015. Due to the presence of URI symptoms and sore throat, 4 cases had diagnostic influenza testing. All 4 samples were nasopharyngeal swabs collected for PCR testing (Luminex panel - xTAG®¹ or Focus Simplexa²) performed by the same hospital-affiliated laboratory.

Results

Patient 1:

10 year old male

- **Symptoms:** facial swelling, mouth sores, fever, rhinorrhea, sore throat
- **Signs:** bilateral parotitis; oral mucosal ulcers
- **Diagnostic testing:** CMV/EBV/Mumps titers, respiratory viral panel PCR
- **Result:** Influenza A

Patient 2:

11 year old female with nephrotic syndrome

- **Symptoms:** facial swelling, jaw pain with mastication, fever
- **Signs:** bilateral parotitis
- **Diagnostic testing:** UA, CBC, CMP, respiratory viral panel PCR
- **Result:** Influenza A/H3

Patient 3:

20 year old female with history of asthma

- **Symptoms:** fever, URI symptoms, cough, neck swelling, sore throat
- **Signs:** bilateral submandibular lymphadenopathy
- **Diagnostic testing:** CBC, CRP, Monospot, blood culture, CT neck, EBV/CMV/Baronella titers, respiratory viral panel PCR
- **Result:** Influenza A/H3
 - CT: bilateral sialadenitis, suspected transudate in the retropharynx, multiple reactive lymph nodes

Patient 4:

14 year old male

- **Symptoms:** sore throat, cough, bilateral neck swelling, "congested voice"
- **Signs:** bilateral submandibular gland swelling
- **Diagnostic testing:** CBC, BMP, blood culture, EBV titers, rapid Flu/RSV PCR, CT neck
- **Result:** Influenza A
 - CT: infectious inflammatory changes involving the retropharynx and danger space, with no abscess; edematous changes involving the aryepiglottic folds

All 4 patients recovered without complications.

Images

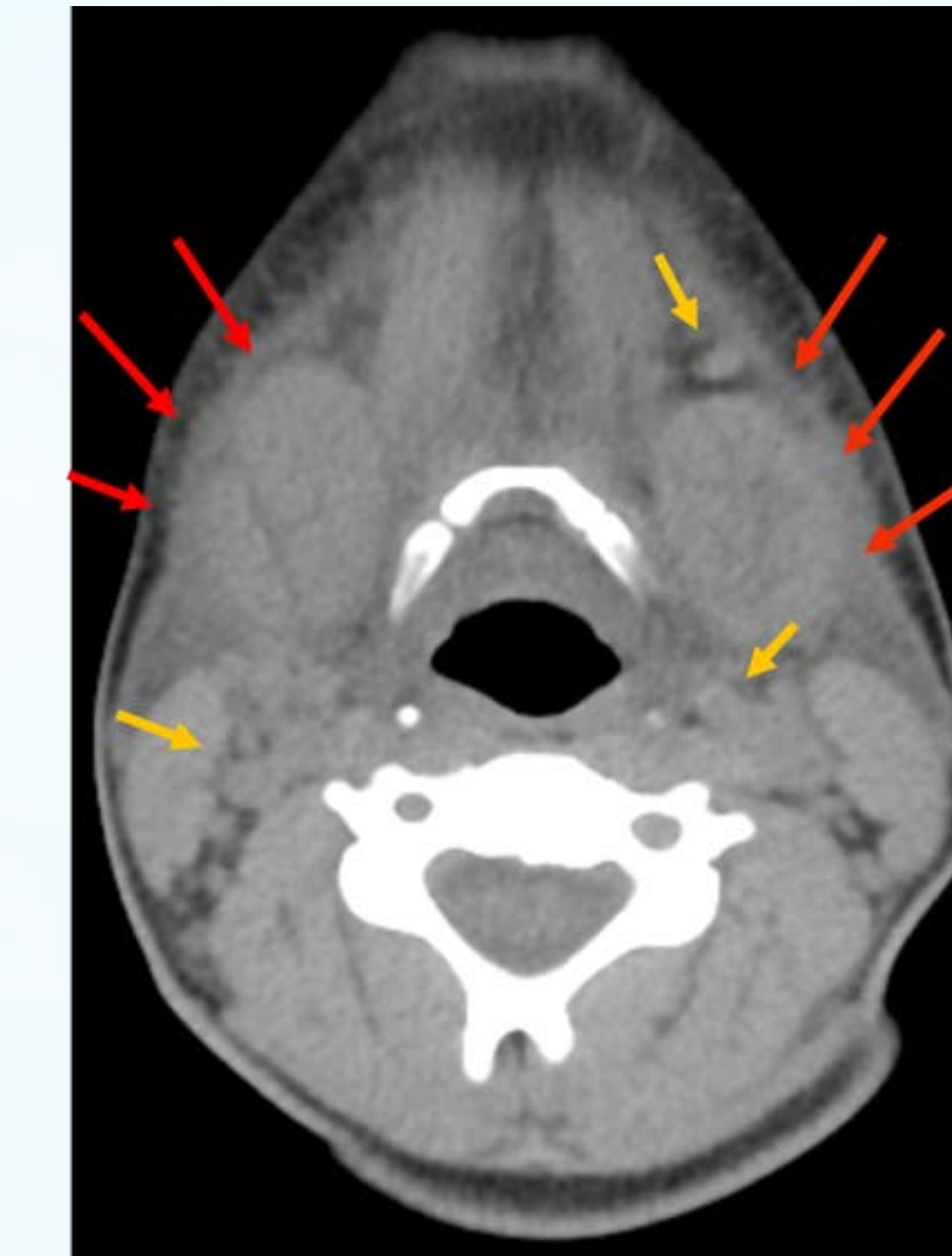


Figure 1. Bilaterally enlarged submandibular glands with intraglandular ducts (red arrows). Scattered jugular, submandibular, submental, and retropharyngeal reactive lymph nodes (orange arrows).



Figure 2. Bilaterally enlarged submandibular glands with dilated intraglandular ducts (red arrows). Retropharyngeal fluid collection without rim enhancement (yellow arrows). Multiple reactive lymph nodes.

Table 1. Patient Demographics and Symptoms

Age	Gender	Time of Presentation	Chief Complaint	Congestion/Rhinorrhea	Cough	Sore Throat	Fever	Test Results
5	Male	October	Post-auricular swelling	-	+	-	-	N/A
15	Male	October	Facial swelling	-	-	-	-	N/A
6	Male	November	Facial swelling	-	-	-	-	N/A
2	Male	November	Post-auricular swelling	Croup			+	N/A
16	Male	December	Facial swelling	+	-	+	-	N/A
7	Female	December	Facial swelling	-	-	-	-	N/A
10	Male	December	Facial swelling	+	-	+	+	Influenza A
11	Female	November	Facial swelling	-	-	-	+	Influenza A/H3
20	Female	December	Neck swelling	+	+	+	+	Influenza A/H3
14	Male	December	Neck swelling	-	+	+	-	Influenza A
10	Male	December	Neck swelling	+	+	+	+	N/A
12	Female	January	Jaw swelling	+		+	+	N/A

Footnotes:

1. Luminex tests for Respiratory Syncytial Virus (RSV and A&B, Influenza (A Matrix, H1 subtype, H3 subtype, B), Parainfluenza (A, B, C), Metapneumovirus, Adenovirus, Rhinovirus.
2. Focus Simplexa tests for Influenza (A, B), RSV.

Differential Diagnosis of Sialoadenitis

Viral

- Coxsackie virus
- Influenza A virus
- Parainfluenza virus
- Cytomegalovirus
- Adenovirus
- Epstein-Barr virus
- Varicella-zoster virus
- Adenovirus
- Epstein-Barr virus
- Varicella-zoster virus

Bacterial

- Staphylococcus aureus
- Alpha-hemolytic Streptococcus
- Streptococcus pyogenes
- Haemophilus influenzae
- Escherichia coli
- Klebsiella pneumoniae
- Pseudomonas aeruginosa
- Pseudomonas pseudomallei
- Eikenella corrodens
- Peptostreptococcus
- Prevotella
- Fusobacterium
- Bacteroides
- Actinomyces
- Mycobacterium
- Bartonella
- Salmonella
- Treponema

Atypical Presentations of Influenza

- Sialadenitis/parotitis
- Croup
- Bronchiolitis
- Pneumonitis/pneumonia
- Encephalitis
- PANDAS
- Myocarditis

Conclusion:

Acute parotitis or sialadenitis during the winter months can be due to Influenza A infection, even without the presence of systemic symptoms typical of Influenza. In fully vaccinated children in whom Mumps is ruled out, Influenza virus infection should be included in the list of differential diagnoses of acute sialadenitis.

References:

1. Bastien N, Bowness D, et al: Parotitis in a Child Infected with Triple-Reassortant Influenza, A Virus in Canada in 2007. *Journal of Clin Microbiology* 47:1896-1898, 2009.
2. Battle S, Laudenbach J, Maguire J: Influenza Parotitis: A Case from the 2004 to 2005 Vaccine Shortage. *Society for Clin Investigation* 333: 215-217, 2007.
3. Brill S, Gilfillan R: Acute Parotitis Associated with Influenza Type A. *N Engl J Med* 296:1391-1392, 1977.
4. Centers for Disease Control. Update – Influenza Activity. *MMWR* 2015; 64: 206-212.
5. Davidkin I, Jokinen S, et al: Etiology of Mumps-Like Illnesses in Children and Adolescents Vaccinated for Measles, Mumps, and Rubella. *J Infect Dis* 191: 719-723, 2005.

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