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® for Focus Simplexa) performed by the same hospital-affiliated laboratory.

Results

10 year old male
Symptoms: facial swelling, mouth sores, fever, rhinorrhea, sore throat
Signs: bilateral parotid: oral mucosal ulcers
Diagnostic testing: CMV/EBV/Mumps tests, respiratory viral panel PCR
Result: Influenza A

11 year old female with nephrotic syndrome
Symptoms: facial swelling, jaw pain with mastication, fever
Signs: bilateral parotid
Diagnostic testing: UA, CBC, CMP, respiratory viral panel PCR
Result: Influenza A/H3

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

14 year old male
Symptoms: sore throat, cough, bilateral neck swelling, "congested voice"
Signs: bilateral submandibular gland swelling
Diagnostic testing: CBC, BMT, 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 myoregicofacial folds

All 4 patients recovered without complications.

Cases

- Patient 1
- Patient 2
- Patient 3
- Patient 4

Images

- Figure 1: Bilaterally enlarged submandibular glands with reticulohistiocytic reaction and sinus tract involving the submandibular gland.
- Figure 2: Bilaterally enlarged submandibular glands with dilated intraglandular ducts (red arrows). Scattered histiocytic lymphoid infiltrate (yellow arrows). Multinucleated giant cells (blue arrows).

Table 1. Patient Demographics and Symptoms

<table>
<thead>
<tr>
<th>Age</th>
<th>Gender</th>
<th>URI Symptoms</th>
<th>Oropharyngeal Ulcers</th>
<th>CT Findings</th>
<th>Final Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Male</td>
<td>Facial swelling</td>
<td>-</td>
<td>-</td>
<td>Influenza A</td>
</tr>
<tr>
<td>10</td>
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<td>Facial swelling</td>
<td>-</td>
<td>-</td>
<td>Influenza A</td>
</tr>
<tr>
<td>16</td>
<td>Male</td>
<td>Facial swelling</td>
<td>-</td>
<td>-</td>
<td>Influenza A</td>
</tr>
<tr>
<td>11</td>
<td>Male</td>
<td>Facial swelling</td>
<td>-</td>
<td>-</td>
<td>Influenza A</td>
</tr>
</tbody>
</table>

References:

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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.

Footnotes:
1. Luminex tests for Respiratory Syncytial Virus (RSV) and Adenovirus. Ad and A2 subtypes, H1N1 subtype, H3N2 subtypes, Influenza A, Influenza B, Epstein-Barr virus, and Varicella-zoster virus.
2. Focus Simplexa tests for Influenza A, B, and Other Viral Pathogens.

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