AMSER Case of the Month:
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37-year-old female with L-sided facial swelling and pain

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Patient Presentation

- **HPI:** 37 year old female presented to ED with recurrent swelling and achy, pressure-like pain of the left side of her face and under her chin over 24-36 hours. Reported muffled voice, difficulty opening jaw, and difficulty swallowing. Denied fever, chills, N/V, or neurological deficits.

- **PMHx:** None

- **SHx:** Current every day smoker (0.5 packs/day)

- **Meds:** None

- **Vitals:** HR 80   BP 162/94   RR 16   T 37.2°C   SpO2 100%

- **Physical Exam:** HEENT: tenderness and swelling present on L side of face and under chin; abnormal dentition
Pertinent Labs

• Labs:
  • CBC:
    • WBC 12.90
      • Immature Granulocytes (Abs) .05
    • RBC 4.14
    • Hgb 12.7
    • Plt 301

--- high value
What Imaging Should We Order?
Select the applicable ACR Appropriateness Criteria

### American College of Radiology
ACR Appropriateness Criteria®
Neck Mass/Adenopathy

**Variant 1:**
Nonpulsatile neck mass(es). Not parotid region or thyroid. Initial imaging.

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>Relative Radiation Level</th>
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<tbody>
<tr>
<td>CT neck with IV contrast</td>
<td>Usually Appropriate</td>
<td>🌡️ 🌡️ 🌡️</td>
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<tr>
<td>MRI neck without and with IV contrast</td>
<td>Usually Appropriate</td>
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<tr>
<td>MRI neck without IV contrast</td>
<td>May Be Appropriate</td>
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<tr>
<td>US neck</td>
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<td>Arteriography cervicocerebral</td>
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This imaging modality was ordered by the ER physician.
Findings (unlabeled)
Findings (labeled)

- Obstructing sialolith
- Enlarged submandibular duct
- Submandibular gland

Axial

14.5mm (2D)
Findings (labeled)

Enlarged submandibular duct
Findings (labeled)

- 12.8mm (2D) Obstructing sialolith
- Enlarged submandibular duct

Sagittal view
Final Dx:

Sialolithiasis of left submandibular (Wharton’s) duct
Case Discussion

• Epidemiology
  • Sialolithiasis: mechanical obstruction (stone) in salivary gland duct
  • Locations: submandibular (80%) > parotid (19%) > sublingual (1%)

• Etiology
  • Deposition of hydroxyapatite (calcium phosphate), magnesium carbonate, and ammonium around nidus of mucin, bacteria, or desquamated epithelial cells
  • Risk factors: dehydration, Δsalivary pH, decreased salivation, trauma, anticholinergics, diuretics
  • Most common in submandibular duct because of increased duct length/tortuosity and higher salivary mucin and calcium produced by submandibular gland
Case Discussion

• Clinical Presentation
  • Swelling and pain in region of affected gland
  • Pain aggravated during meals or in anticipation of meals
  • Palpable stone may be present
  • Symptoms can be intermittent or persistent

• Imaging
  • Indications: if dx is unclear based on clinical presentation; concern for tumor, other conditions, or complications (ex. Ludwig’s angina or abscess)
  • Imaging of choice: CT with IV contrast
    • Findings: stone within duct or gland, gland enlargement, ductal dilation, stranding and enhancement with contrast
    • 98% sensitivity, 88% specificity
    • Alternatives: Plain film, U/S, sialography, MRI
Case Discussion

• **Treatment**
  - Conservative (NSAIDs, hydration, sialagogues, warm compress, massage, discontinue anticholinergics, steroids, Abx if secondary infection suspected)
  - If failing to improve, referral to ENT for sialoendoscopy, lithotripsy, surgery

• **Outcome of Case**
  - Patient given Unasyn, steroids in ED
  - Prescribed Augmentin, Medrol Dosepack
  - Recommended use of sialagogues
  - F/u appointment with ENT scheduled
References


