

# EM CASE OF THE WEEK.

BROWARD HEALTH MEDICAL CENTER  
DEPARTMENT OF EMERGENCY MEDICINE



Care Warriors

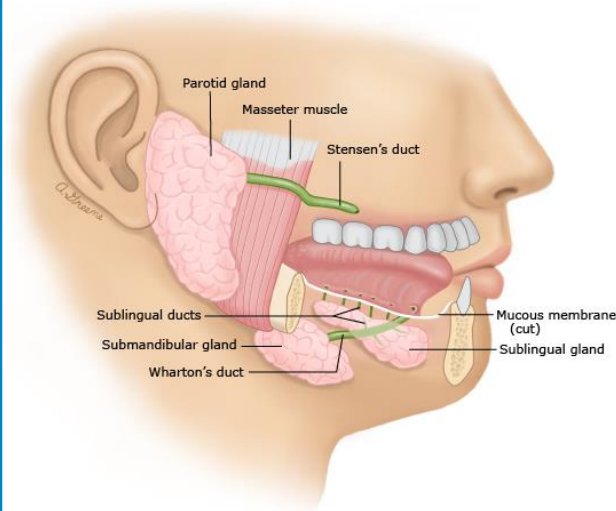
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## Sialolithiasis

A 54-year-old female with past medical history of hypothyroidism, kidney stones, bipolar disorder, and asthma presents to the ED with right-sided neck swelling and burning sensation at the angle of the mandible while eating since this morning. She has never experienced these symptoms prior to this episode. She denies fever, difficulty breathing, dysphagia, odynophagia, globus, sick contacts, and is up-to-date on all vaccinations. Patient is afebrile and vitals are within normal limits. On physical exam, patient has minor submandibular swelling on the right with mild overlying erythema. Mouth and oropharynx exams show no tonsillar erythema, exudates, uvular deviation, fluctuant masses, or stones. CT scan is consistent with submandibular sialadenitis. No stones are visible on imaging. Which of the following is the most appropriate treatment for this patient's condition?

- A. Clindamycin 150-450 mg PO q6hr for at least 7 days, not to exceed 1.8g/day
- B. Incision and drainage
- C. Conservative management: hydration, moist warm compress, massage, sialagogues
- D. Salivary gland excision
- E. Salivary duct gland cannulation



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Anatomy of the salivary glands and ducts

*EM Case of the Week is a weekly "pop quiz" for ED staff.*

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

BROWARD HEALTH MEDICAL CENTER

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The correct answer is C. Conservative management with hydration, moist warm compress, and sialagogues.

Sialolithiasis is the term used to describe stones within the salivary gland(s) or ducts. The exact pathogenesis is unknown, however factors including stagnation of salivary flow and elevated salivary calcium concentration are thought to contribute. Salivary stones are mainly comprised of calcium phosphate and hydroxyapatite. The submandibular gland is most commonly (80-90%) affected by stones as the associated duct is long, salivary flow is slow and against gravity, and the saliva content is high in calcium. The size of the stone also tends to be larger than other glands. Six to twenty percent of stones occur in the parotid glands while one to two percent of stones occur in sublingual and minor salivary glands.

There is no predilection for race or laterality. Men develop more stones than women. Most cases occur between the ages 30 and 60 years with 75% of stones being single and 3% occurring bilaterally.

#### Discussion

Risk factors for sialolithiasis include dehydration, trauma, anticholinergic medications, smoking, gout, chronic periodontal disease, and history of nephrolithiasis.

Sialolithiasis usually presents as pain and swelling of the affected gland, aggravated by eating; however about 33% of submandibular sialolithiasis present with painless swelling and 10% with only pain.

On examination, compression of normal salivary glands expresses clear saliva. An obstructing stone will prevent this. Purulent discharge should increase suspicion for acute bacterial sialadenitis.

Diagnosis is clinical, based on the presenting history and physical exam. Imaging can be helpful in illuminating location and size of stones, any masses, or abscesses.



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Sialolith

CT scans have a high sensitivity for detecting salivary stones.

#### Treatment

Conservative management is the mainstay for most patients. This includes hydration, moist heat, massaging the gland, "milking" the duct. Medications that cause dry mouth should be avoided. NSAIDs can be used to manage moderate pain.

Suspicion for bacterial infection should increase with worsening pain, fever, and/or purulent drainage from the salivary ducts. Initial antibiotic course of dicloxacillin 500mg q6hours or cephalexin 500 mg q6hours for 7 to 10 days is indicated.

If symptoms do not improve within 5 to 7 days, cultures of duct discharge and broadening antibiotic coverage is indicated. Amoxicillin/clavulanate or clindamycin are acceptable until cultures with sensitivity results are available.

For a list of educational lectures, grand rounds, workshops, and didactics please visit [BrowardER.com](http://BrowardER.com) and click on the "Conference" link.

*All are welcome to attend!*



### ABOUT THE AUTHOR

This month's case was written by Priya Verma. Priya is a 4<sup>th</sup> year medical student from FIU HWCOC. She did her emergency medicine rotation at BHMC in November 2018. Priya plans on pursuing a career in Internal Medicine after graduation.

### REFERENCES

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# Warriors

## Take Home Points

- The exact pathogenesis of sialolithiasis is unknown.
- The submandibular gland is most commonly involved due to its anatomy.
- Sialolithiasis is clinical diagnosis.
- Imaging, like CT, can be useful in revealing size and location of stones. It is also valuable if a mass or abscess is suspected.
- Conservative treatment is the mainstay: hydration, moist warm compress, massaging of the gland, and “milking” of the ducts.
- If a bacterial infection is suspected based on worsening pain, fever, or purulent drainage from salivary ducts, antibiotics such as dicloxacillin or cephalexin are indicated for 7 to 10 days.
- If bacterial infection is suspected to be worsening, salivary gland discharge should be cultured and antibiotic coverage should be broadened to amoxicillin/clavulanate or clindamycin until results are available.