More Than a Toothache: Necrotizing Soft Tissue Infection from an Odontogenic Source

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History of Present Illness

A 40-year-old female with past medical history of anxiety, depression, asthma, and obesity presented to the emergency department with 5 days of worsening facial pain and swelling. She had undergone recent dental work at symptom onset and was started on amoxicillin, with a planned tooth extraction the following week. She reported progressive pain despite NSAID use. She had difficulty eating due to pain but was able to tolerate liquids. She denied fever, chills, or difficulty breathing.

Physical Exam

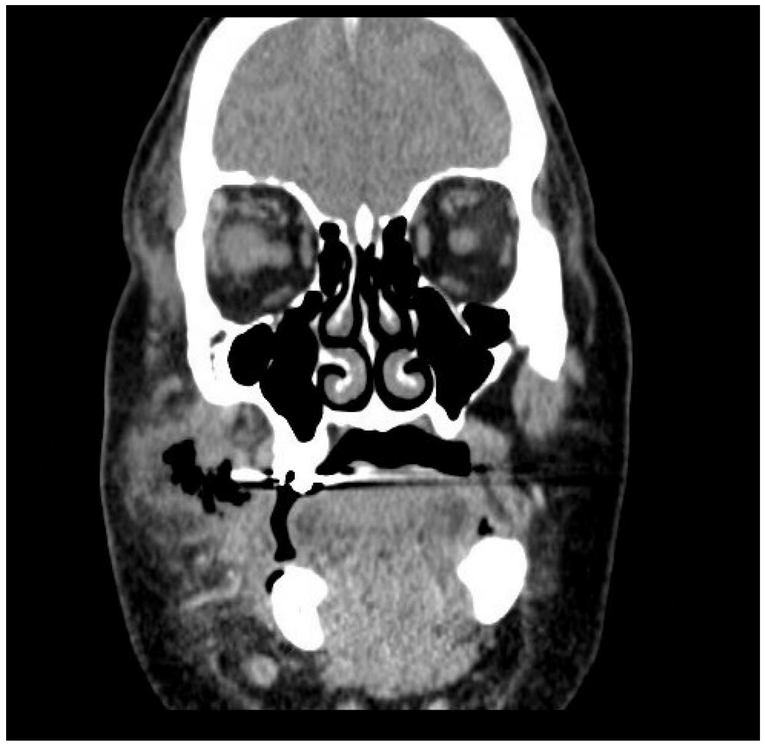
Physical exam was notable for jaw tenderness and swelling present. There was erythema to the right side of the face in the anterior portion of the right side of the neck. There was tenderness and induration present with palpation of the external portion of the right cheek and the right side of the neck. No trismus. The right salivary gland was diffusely enlarged and tender.

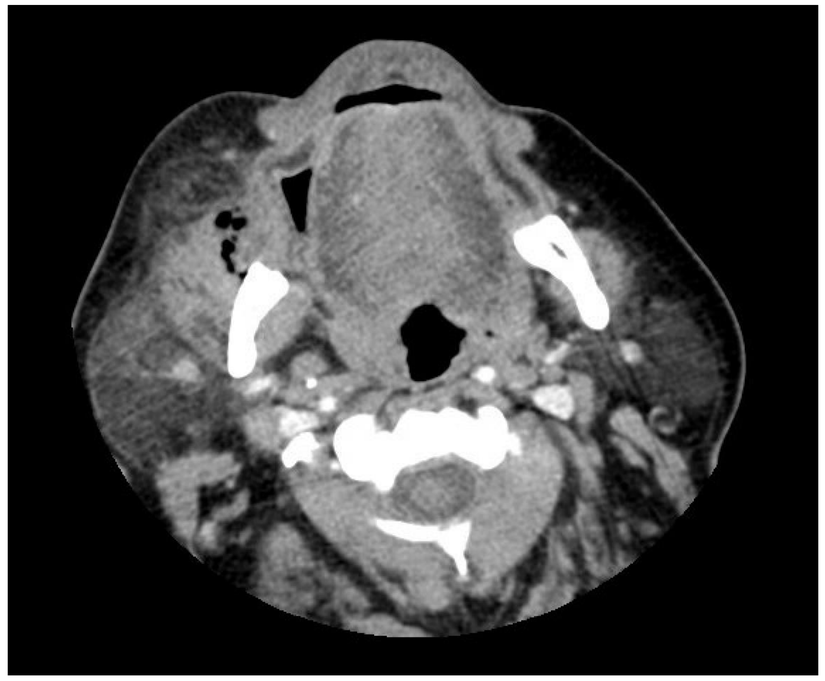
Labs/Imaging

CBC and BMP were obtained which did not show any significant abnormality. Glucose 286 and white blood cell count of 10.6.

CT facial bones with contrast was obtained which showed a small fluid collection adjacent to the right mandible measuring 1.6 x 0.7 x 2.0 cm concerning for abscess as well as extensive soft tissue swelling around the right mandibular region with soft tissue gas.

CT Scan Images





CT images note inflammation, abscess and soft tissue gas over the right mandible

Case Conclusion

The case was discussed with OMFS and ENT. The patient was initiated on broad-spectrum intravenous antibiotics and transferred to a tertiary care center for definitive management. She underwent operative incision and drainage of a right-sided multispace neck abscess with evacuation of copious purulent material and extraction of 22 remaining teeth. Intraoperative cultures grew Actinomyces species and Prevotella denticola. The patient was seen by Infectious Disease, and she was initially treated with vancomycin, piperacillin/tazobactam, and clindamycin. Her antibiotic therapy was subsequently narrowed to ampicillin/sulbactam and transitioned to amoxicillin/clavulanic acid upon discharge. The patient followed up with OMFS after discharge and was noted to be progressing well.

Discussion

Necrotizing soft tissue infections (NSTIs) include necrotizing forms of fasciitis, myositis, and cellulitis. Patients may classically present with edema, erythema, severe pain, tenderness, fever, and skin bullae or necrosis. Computed tomography (CT) imaging findings of gas in soft tissue is highly specific for NSTI. The definitive diagnosis of NSTI is established intraoperatively through exploration of the soft tissue.

An oral abscess may progress to NSTI following abscess rupture or direct extension into nearby tissue. Odontogenic NSTIs are typically polymicrobial. The most frequently isolated bacteria include Streptococcus, Prevotella, Bacteroides, Fusobacterium, and Peptostreptococcus species.