

Pediatric Maxillary Facial Swelling from Prolonged, Untreated Periodontal Abscess

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Background

- Children are particularly susceptible to dental caries if proper care is not taken to examine and clean teeth after initial eruption.
- Risk factors for dental caries include prolonged breast feeding (beyond 12 months), consumption of high sugar beverages, prolonged use of pacifiers, and use of bottles at bedtime (2).
- Untreated dental caries can lead to periodontal abscesses, which can be focal or diffuse, and often present with erythematous gingiva that is fluctuant and painful to palpation.

Case Presentation

- 5 year, 10 month old male presented to the Emergency Department complaining of left sided facial swelling localized to patient's maxilla for 1 month. In the few days prior, he was complaining of worsening pain and increased swelling, so his mother brought him to the ED for treatment. She reported no recent fevers, chills, nausea, vomiting, or other systemic symptoms. The child also denied any other symptoms such changes in vision, focal deficits, ear pain, or dental pain.
- On examination, he was noted to have a firm, mass-like swelling localized to the lower left eyelid extending down towards the maxilla and obscuring the nasolabial fold. There was tenderness to palpation in this area, however there was no overlying erythema, warmth, or fluctuance. Overall he was well appearing, nontoxic, and afebrile. The oral mucosa was non-erythematous. There were no central incisor teeth present and dental fillings were noted on his molar teeth. There was no evidence of dental caries on his primary teeth (no permanent teeth had erupted yet).
- He was previously seen by his pediatrician who thought the swelling was secondary to a sinus infection, however he was not placed on antibiotics. The day prior to being seen in the ED, however, he was seen by his dentist and started on amoxicillin for a presumed dental abscess.
- We performed a bedside ultrasound of the swollen area, which showed a nonspecific hypoechoic lesion. We felt this could represent an infection, resolving hematoma, brachial cleft cyst, or other developmental cystic structure.
- To better characterize this lesion, a CT scan and lab work was obtained. His white blood cell count was elevated to 11.5k. The CT scan showed a 1.3 by 0.8 cm enhancing fluid collection consistent with an abscess. This appeared to be arising from a periodontal infection with extension through the anterior alveolar ridge and breaking through of the bones with extension into the adjacent nose.
- Subsequently, the patient was started on IV ampicillin/sulbactam and admitted to the pediatric ward for further evaluation and treatment.
- During his inpatient stay, the IV antibiotics were continued. Oral and Maxillofacial surgery was consulted and they extracted teeth H & I, which provided drainage of the abscess. He was then placed on oral clindamycin for the next 10 days and had complete resolution of his symptoms.

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Images

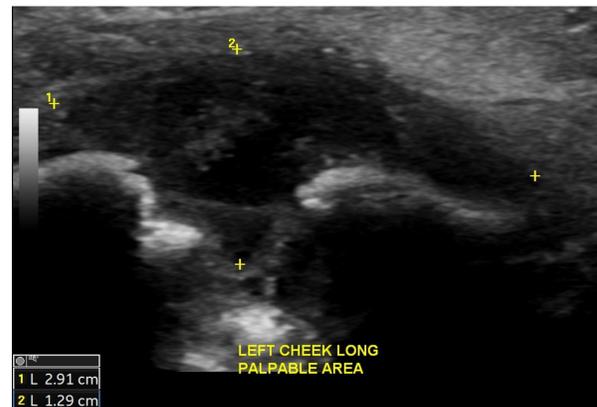


Figure 1: Ultrasound image using linear probe of facial swelling. Hypoechoic complex finding in area of interest with some internal debris. No evidence of cobblestoning to suggest overlying cellulitis. Differential is broad and dependent on location of finding. This includes infection, resolving hematoma, a brachial cleft cyst, or other developmental cystic structure.



Figure 2: CT maxillofacial transverse view of periodontal abscess in bone window. Enhancing fluid collection consistent with abscess that arises from a periodontal infection and has broken through the alveolar ridge. There is extension adjacent to nose.



Figure 3: CT maxillofacial coronal view of periodontal abscess in standard window. Extension of abscess past alveolar ridge visualized.

Discussion

- Untreated dental caries can progress to periodontal abscesses which can lead to a sequela of complications including osteomyelitis of the mandible or maxilla. Osteomyelitis secondary to odontogenic infections is relative uncommon, however it is more likely to be located in the mandible than the maxilla.
- Predisposing factors that increase the chance of osteomyelitis include compound fractures, irradiation, diabetes or recent steroid therapy. Acute osteomyelitis of the mandible is often amenable to antibiotic therapy (3).
- In this case, the patient did not have any of the classic signs of periodontal abscess such as gingival swelling or erythema. There was no fluctuance on exam and no expressible purulence.
- After ultrasonography was performed and inconclusive, CT scan was ordered. CT scan results showed breakthrough of infection and abscess formation going towards the maxilla.
- Extraction of the tooth provided a way for drainage of the abscess so that incision and drainage was not necessary.
- There was minimal concern for osteomyelitis; however MRI or bone scan was not performed. After tooth extraction, this patient had resolution of symptoms with IV antibiotics which were eventually converted to PO antibiotics.

Conclusion

- Dental caries if left untreated can progress to form facial abscesses with potential to progress to osteomyelitis.
- Prolonged symptoms may present atypically as seen in the above case.
- Tooth extraction provides an avenue for drainage of facial abscesses if the source is secondary to odontogenic infection.

References

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