Introduction

Patients with acute dental abscesses frequently present to the Paediatric Emergency Department (ED) with acute onset of facial swelling, warranting urgent assessment and therapy. Management of these patients involves surgical elimination of the source of infection, with adjunctive antibiotic therapy.

This patient population remains clinically stable and typically demonstrates rapid response to therapy with dental extraction and antibiotics. Given the predictable clinical course and limited nursing care required, previously healthy paediatric patients with dental abscesses and associated facial swelling can be managed in an ambulatory setting.

This Clinical Pathway is intended to guide the ambulatory management of patients who present to SickKids with a dental abscess and associated facial swelling.

Objectives:

In the target population, the objectives of this guideline are to:

- Emphasize the surgical elimination of the source of infection as the initial priority where possible;
- Streamline the care of these patients from hospital arrival to discharge;
- Decrease the use of unnecessary diagnostic studies;
- Outline each service’s role and responsibilities, as well as facilitate clear communication and handover among parties;
- Optimize the patient experience when presenting to the hospital with this condition;
- Increase hospital bed capacity for acutely ill patients

Target Patient Population

- Clinically stable children with a dental abscess and associated facial swelling and no significant comorbidities or chronic health conditions
Target users

Target Users include, but are not limited to:

- Emergency Medicine physicians, nurses, nurse practitioners, and trainees
- Paediatric Medicine physicians, nurse practitioners, and trainees,
- Nurses in the Alternate Care Environment
- Dentistry team
- Pharmacists
- Patients and families

Exclusion Criteria

This Pathway is not intended for use in patients who:

- Are systemically ill (ill-appearing, hemodynamically unstable);
- Have an immunodeficiency;
- Have a metabolic disorder;
- Have significant comorbidities*;
- Are in significant pain requiring IV analgesia; or
- Are unable to maintain adequate oral hydration or tolerate oral antibiotics

* Exceptions may be made on a case-by-case basis and require discussion with and acceptance by the Dentistry and Intake Physicians
Clinical Pathway

Dental Abscess with Facial Swelling Management Pathway

Child identified in Emergency Department (ED) as having a dental abscess with associated facial swelling

Emergency Department to:
- Notify Dentistry Team of new consult;
- Initiate order set in Epic; and
- Give 1st dose of amoxicillin/ampicillin while patient awaiting Dentistry (Give clindamycin if patient is allergic to penicillins)

Dentistry Team physician completes consult

Will the source of infection be removed in the ED?

YES
- Notify Paediatric Medicine Intake Physician

NO
- Enroll patient in Alternate Care Environment (ACE)

Enroll patient in Alternate Care Environment (ACE)

Subject to availability:
- Communicate with ACE team via email and phone/ in person**
- Handover to BCD medical team and review with SCIU staff MD
*If after 24OE and patient remains in ED, contact BCD Intake Team. May be admitted for Day 1 (with plan to make arrangements for Days 2-3 in ACE)

Criteria for ambulatory protocol
- No significant comorbidities
- Systemically well
- No IV hydration required
- No IV analgesia required
- No immunodeficiency
- No metabolic condition

Does the patient meet ambulatory protocol criteria?

YES
- Admit for amoxicillin IV and supportive therapy. Consider discharge to ACE protocol when child meets ambulatory protocol criteria (refer to e-formulary). Consider consultation with Infectious Diseases team should there be no evidence of improvement within 48 hours.

NO
- Before 1200, Transfer to ACE: Administer 2nd dose of IV amoxicillin in ACE prior to going home (pre-admit orders to be entered in Epic)
- After 1200, Discharge home from ED after 1 dose of IV amoxicillin with oral amoxicillin dose to take at home if IV dose was given between 1200-1800. Send patient home with PIV saline locked for return to ACE on Day 2

Transfer to ACE: Administer 2nd dose of IV amoxicillin in ACE prior to going home (pre-admit orders to be entered in Epic)

Prior to discharge from ED:
- Ensure family knows to return to ACE (on IV) at 0730 sharp;
- Discharge instructions given (NPO @ 2400, pain management); and
- Dispense oral amoxicillin dose if IV dose was given between 1200-1800 (to be taken in 8 hours and not later than 2400).

Discharge home from ED after 1 dose of IV amoxicillin with oral amoxicillin dose to take at home if IV dose was given between 1200-1800. Send patient home with PIV saline locked for return to ACE on Day 2

ACE Management on Day 2/3:
- Child return NPO to ACE at 0730 on Day 2 (± Day 3); and
- ACE team to continue IV antibiotics.
*Consider consultation with Infectious Diseases team should there be no evidence of improvement within 48 hours.

Dentistry to reassess patient at 0800 to determine if ready for extraction

Discharged home by the Paediatric Medicine team from ACE

- Oral amoxicillin x 7 day total course;
- Instructions to follow-up with community dentist; and
- Discharge instructions given by Dentistry

**To book a patient into ACE:
Email ACE.requests@sickkids.ca with the following info: name, MRN, time IV amoxicillin was given in ED, pertinent history / concerns / social issues/ language

\[\text{Printable version}\]

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Dental Abscess with Facial Swelling Clinical Practice Guideline
Clinical pearls for discharge from ACE:

- Surgical elimination of the source of infection via extraction or endodontic treatment and drainage of pus is recommended as soon as clinically possible.
- Systemically ill, immune-deficient, and metabolic patients warrant admission.
- Life-threatening complications include sepsis, airway compromise, toxic shock syndrome, cavernous sinus thrombosis, descending necrotizing mediastinitis, brain abscess, and Ludwig’s angina.
- In children who appear unwell, including signs and symptoms above, blood cultures are recommended.
- Amoxicillin/ampicillin is recommended as the first line treatment due to the polymicrobial anaerobic nature of dental infections. Clindamycin is recommended should the patient have an allergy.
- Consider consultation with Infectious Diseases team should there be no evidence of improvement within 48 hours.
- **Discharge criteria:** Considerable improvement on IV antibiotics, afebrile > 24 hours, well-controlled pain, tolerating oral intake and oral medications well.

Related Documents

- Guideline on Paediatric Oral Surgery: American Academy of Paediatric Dentistry, 2020
- Guideline on use of Antibiotic Therapy for Paediatric Dental Patients: American Academy of Paediatric Dentistry, 2022
- Cellulitis and Abscess Pathway: Seattle Children’s Hospital, 2020
- Antimicrobial Guidelines for Dental Abscess, Royal Children’s Hospital Melbourne, 2020

References


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• Iris Liu, Nurse Practitioner, Paediatric Medicine
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Implementation
  • Pathway has been implemented since 2015 with good effect and no patient safety concerns have arisen during this time
  • Divisions of Paediatric Medicine and Emergency Medicine need to continue to build awareness during new trainee orientation
  • ED and Inpatient Medical Director to communicate any updates in practice to ED and Paediatric Medicine Divisions respectively.

Evaluation
  • Ongoing monitoring of adherence to the pathway

Attachments:
  Dental Abscess Pathway Jan. 2022 FINAL.docx
  Dental Abscess Pathway Jan. 2022 FINAL.pdf