SASKATCHEWAN REGISTERED NURSES' ASSOCIATION

RNs WITH ADDITIONAL AUTHORIZED PRACTICE
CLINICAL DECISION TOOL
DECEMBER 1, 2016

DENTAL ABSCESS PRIMARY TEETH

DEFINITION

Dental abscess is an acute infection of primary (baby) teeth or the structures supporting the tooth or gums.

IMMEDIATE CONSULTATION REQUIRED IN THE FOLLOWING SITUATIONS

- Gingival or facial cellulitis
- Spread of infection to face and surrounding area
- Any signs of ascending infection to the brain such as cavernous sinus thrombosis
- Difficulty in opening the mouth (trismus)
- Significant swelling of the floor of the mouth
- Signs of sepsis (e.g., fever, tachycardia, hypotension, tachypnea, altered mental status)
- Neck stiffness
- Immunocompromised client

CAUSES

- Progressive dental decay causing pulpitis from gram-positive anaerobes and bacteroides, streptococci, fusobacterium species, prevotella, and less frequently staphylococcus species
- Failed root canal treatment

PREDISPOSING AND RISK FACTORS

- Deep caries
- Poor dental hygiene
- Dental trauma

HISTORY

- Localized tooth pain of sudden onset, worsening over a few hours to a few days
- Constant deep, throbbing pain that worsens when lying down
- Pain worsens with mastication or exposure to cold, hot, or sugar
- Pain may radiate to the ear, lower jaw, or neck on the same side of the dental abscess
- Decrease in pain once the pus starts draining
- Stiffness or pain in the neck suggests complications
- Bad taste in the mouth

- Tooth may be mobile
- Fever and malaise are less frequent

Enquire about:

- Dental hygiene such as frequency of brushing and flossing
- Diet
- Previous dental procedures
- Recent facial trauma
- Comorbid disease conditions, immunocompromised states, drug-induced gum conditions

PHYSICAL FINDINGS

Be systematic about the oral exam including:

- External
- Internal (gums, teeth, palate, pharynx, tongue)
- Jaw
- Neck
- Ears

Typical findings include the following:

- Fever (rare but possible)
- Facial swelling may be present
- Carious tooth
- Large existing restoration
- Gingival edema and erythema
- Tooth mobility compared to its counterpart on the opposite side
- Draining fistula in the gum, more so than in a permanent tooth
- An elevated or discoloured tooth with increased mobility and tenderness
- Localized tenderness over affected area of jaw
- Anterior cervical nodes enlarged and tender
- Localized tooth pain and tenderness on percussion
- Check for regional lymphadenopathy
- If cellulitis is present, the following may also be present:
  - Erythema of gingiva and possibly the face
  - Diffuse, tense painful surrounding area

- Trismus (inability to open the mouth)
- Dysphagia

DIFFERENTIAL DIAGNOSIS

- Disease of the salivary gland
- Sinusitis
- Cellulitis
- Maxillary sinusitis
- Otitis externa
- Otitis media
- Unerupted teeth
- Localized lymphadenopathy

COMPLICATIONS

- Gingival and/or facial cellulitis
- Maxillary infection can spread to the periorbital area and may cause vision loss, cavernous sinus thrombosis, and central nervous system (CNS) involvement
- Sepsis
- Deep neck space infection is a rare but life threatening complication
- Ludwig's angina
- Recurrent abscess formation
- A chronically abscessed primary tooth on a very young child can disrupt the development of the permanent successor tooth.

INVESTIGATIONS AND DIAGNOSTIC TESTS

- None

MAKING THE DIAGNOSIS

- Diagnosis is based on history and clinical findings.

MANAGEMENT AND INTERVENTIONS

Goals of Treatment

- Relieve symptoms
- Prevent spread of infection

DENTAL ABSCESS PRIMARY TEETH

Appropriate Consultation

- Consult a physician/RN(NP) if a large fluctuant abscess is present, if client is acutely ill, or if there is any suspicion that the infection has spread to the soft tissues of the neck or bone.
- Client should see a dentist for definitive management and follow-up of dental infections.

Non-pharmacological Interventions

- Warm saline oral rinses several times a day

Pharmacological Interventions

- Penicillin V potassium 25-50 mg/kg/day orally in two divided doses q12h for 7 days (maximum dose 2000 mg/day)
  Or
- Amoxicillin 25-50 mg/kg/day orally q8h for 7 days (maximum dose 3 g/day)

For penicillin allergy:

- Clindamycin 8-16 mg/kg/day orally divided into 3 or 4 equal doses for 7-10 days (maximum dose 1.8 g/day)
- When prescribing antibiotics, explain to the client/caregiver that antibiotic therapy is to reduce the spread of the infection and is not a substitute for dental treatment by a dentist.
- Regular analgesics should be taken to relieve the symptoms and the client should seek dental care as soon as possible.
- Do not routinely provide repeat treatments or switch antibiotics when the client fails to respond to the initial treatment as it may mask underlying complications (sinus or dental cyst).
- In those who do not respond to treatment, consider a different diagnosis and the possibility of the development of complications.

Analgesics for Children

- Acetaminophen 15 mg/kg/dose orally q4-6h prn (maximum dose 75 mg/kg/day)
  Or
- Ibuprofen 10 mg/kg/dose orally q8h prn (maximum dose 40 mg/kg/day)

Client and Caregiver Education

- Counsel client/caregiver about the appropriate use of medications (dose, compliance, side effects, etc.).
- Recommend dietary modifications (cool liquids or soft diet).
- Recommend improvements to dental hygiene.
- Avoid food or drink that may be too hot or cold.
- Brushing: use a soft toothbrush to reduce discomfort and avoid flossing the tooth with the abscess.
- Advise chewing on the other side of the mouth to reduce discomfort and irritation to the abscessed tooth.
- Advise that serious complications may happen if the abscess is not treated correctly by a dental practitioner (e.g., dentist, dental therapist).
- Discuss prevention of dental caries (e.g., discontinue bottle usage; avoid high sugar drinks; diet).

Monitoring and Follow-Up

- All clients should be referred, or advised to self-refer, to a dentist for follow-up.
- Consider follow-up in 48-72 hours if client is unable to be seen by a dental practitioner. Client should be counselled to follow-up if the pain becomes worse or if there is a concern that the infection is spreading.

Referral

- Refer to a dentist for definitive therapy such as dental filling, dental extraction, or incision and drainage. It is not necessary to have antibiotic coverage before referring to a dentist if there is no cellulitis present or if the client is not immunocompromised.

DOCUMENTATION

- As per employer policy

REFERENCES

*Acute apical dental abscess***.** (2012, March 5). Retrieved from https://dynamed.ebscohost.com

Health Canada. (2011). *First Nations & Inuit health: Clinical practice guidelines for nurses in primary care*. Ottawa, ON: Author. Retrieved from http://www.hc-sc.gc.ca

Mahat, G., Lyons, R., & Bowen, F. (2014). Early childhood caries and the role of the pediatric nurse practitioner. *Journal for Nurse Practitioners*, *10*(3), 189–193. http://doi.org/10.1016/j.nurpra.2013.10.015

Olsen, I., & van Winkelhoff, A. J. (2014). Acute focal infections of dental origin. *Periodontology 2000*, *65*(1), 178–189. http://doi.org/10.1111/prd.12018

Periodontal abscess. (2013, May 13). Retrieved from http://www.essentialevidenceplus.com