SASKATCHEWAN REGISTERED NURSES' ASSOCIATION

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

DENTAL ABSCESS PERMANENT TEETH

DEFINITION

Dental abscess is an acute infection of the teeth or the structures supporting the teeth or gums.

Types

- Apical abscess originates in the dental pulp which is the most commonly occurring type as a result of dental decay.
- Periodontal abscess originates in the supporting structure of the teeth, between teeth and gum, and is usually a result of chronic periodontitis.

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 and worsening over a few hours to 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 ear, lower jaw, neck on the same side of dental abscess
- Decrease in pain once the pus starts draining
- Stiffness or pain in the neck suggest complications
- Bad taste in mouth
- Fever and malaise less frequent

Enquire about:

- Dental hygiene such as frequency of brushing and flossing
- Diet
- Previous dental procedures
- Recent facial trauma
- Comorbid disease conditions such as diabetes or other immunocompromised states, smoking, 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:

- Fever (rare but possible)
- Facial swelling may be present
- Carious tooth
- Gingival edema and erythema
- Tooth mobility
- Draining fistula in the gum
- 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 (e.g., parotitis)
- Sinusitis
- Cellulitis
- Migraine
- Maxillary sinusitis
- Myofascial inflammation
- Temporomandibular joint (TMJ) dysfunction
- Neuralgia
- Otitis externa
- Otitis media
- Unerupted teeth
- Neoplasm
- 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

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

Appropriate Consultation

- Consult a physician/RN(NP) if a large fluctuant abscess is present, if the 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

Initial Treatment:

- Adult
  - Penicillin V potassium (Penicillin V) 600 mg orally q12h for 7 days
- Children
  - Penicillin V potassium 25-50 mg/kg/day orally in two divided doses q12h for 7 days (maximum dose 2000 mg/day)

Or

- Adult
  - Amoxicillin 500 mg orally q8h for 7 days
- Children
  - Amoxicillin 25-50 mg/kg/day orally in three divided doses q8h for 7 days (maximum dose 3 g/day)

In adult, consider concomitant treatment with:

- MetroNIDAZOLE 500 mg orally q12h for 7days if the infection is severe or spreading. If there are systemic signs of infection present, consult a physician/RN(NP), if immediate attention by a dentist is not available.
- If allergy to or cannot tolerate metroNIDAZOLE, consider clindamycin 300 mg

orally q6h for 7 days in addition to penicillin.

For penicillin allergy:

- Adult
  - Clindamycin 300 mg orally q6h for 7days
- Children
  - Clindamycin 8-16 mg/kg/day orally in 3 or 4 equally divided doses for 7-10 days (never exceed adult dose)
- When prescribing antibiotics, explain to the client 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 client should seek dental care as soon as possible.
- Do not routinely provide repeat treatments or switch antibiotics when they fail to respond to initial treatment as it may mask underlying complications (sinus or dental cyst).
- Always consider alternative diagnosis or the development of complications in clients with suspected dental abscess who do not respond to treatment.

Analgesics for Adult - mild to moderate dental pain:

- Ibuprofen (Motrin) 400-600 mg orally q6h prn (maximum dose 3.2 g/day)
  Or
- Acetaminophen (Tylenol) 500-1000 mg orally q6h prn (maximum dose 4g/day)

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 Care Giver Education

- Counsel client/caregiver about appropriate use of medications (dosage, 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.
- Eating: try eating on the other side of the mouth to reduce discomfort and irritation to the abscess.
- The client/caregiver should be advised that serious complications may happen if the abscess is not treated correctly by a dental practitioner.

Monitoring and Follow-Up

- All clients should be referred, or advised to self-refer, to a dentist for follow-up.
- May consider follow-up in 48-72 hours. The client should be counselled to follow-up if pain becomes worse or there is a concern that the infection is spreading. Consult with a physician/RN(NP) and/or refer to a dentist.

Referral

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

DOCUMENTATION

- As per employer policy

REFERENCES

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