What a family medicine physician (probably) wants to know about dentistry

Fraser Health Long Term Care Rounds

MAY 2024

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CASE

89 year old male in LTC

60 pack year history of smoking

MH: A Fib; DM II; Alzheimer's disease; CAD

CC: Does my tongue look normal? It doesn't hurt.



Question: What actions should you take as a family doctor?

LEARNING OBJECTIVES

By the end of this session, you will be able to:

- Describe a family doctor's approach to dental pain and odontogenic infections
- Decide if antibiotics are appropriate for a patient with dental pathology
- Determine if antibiotic prophylaxis is required for dental procedures
- Describe how dentistry can support the overall health of LTC residents

AGENDA

A family doctor's approach to:

- Dental Pain
- Common dental emergencies
    - Head and neck infections of odontogenic origin
    - Oral pathology
        - MRONJ
        - Oral cancer
    - Antibiotic prophylaxis for dental procedures
    - Medical dental collaboration

Oral health in Canada- 2024 Update

Disclosures

- I **DO NOT** have an affiliation (financial or otherwise) with any for-profit or not-for-profit organizations

QUESTION

You are rounding on your LTC patient

She reports 10/10 severe dental pain

You look and several teeth have large cavities

What advice would you provide? What are the next steps?



Table 6 General guidelines for the use of analgesics[9]

Eliminate the source of pain, if at all possible
Individualize regimens based on pain severity and medical history
Maximize the nonopioid before adding an opioid
Optimize dose and frequency before switching
For NSAIDs, consider: • preoperative dose • loading dose • prescribing round-the-clock instead of prn on first day
Avoid chronic use of any analgesic whenever possible
Reduce the dose and duration of any NSAID or opioid in the elderly

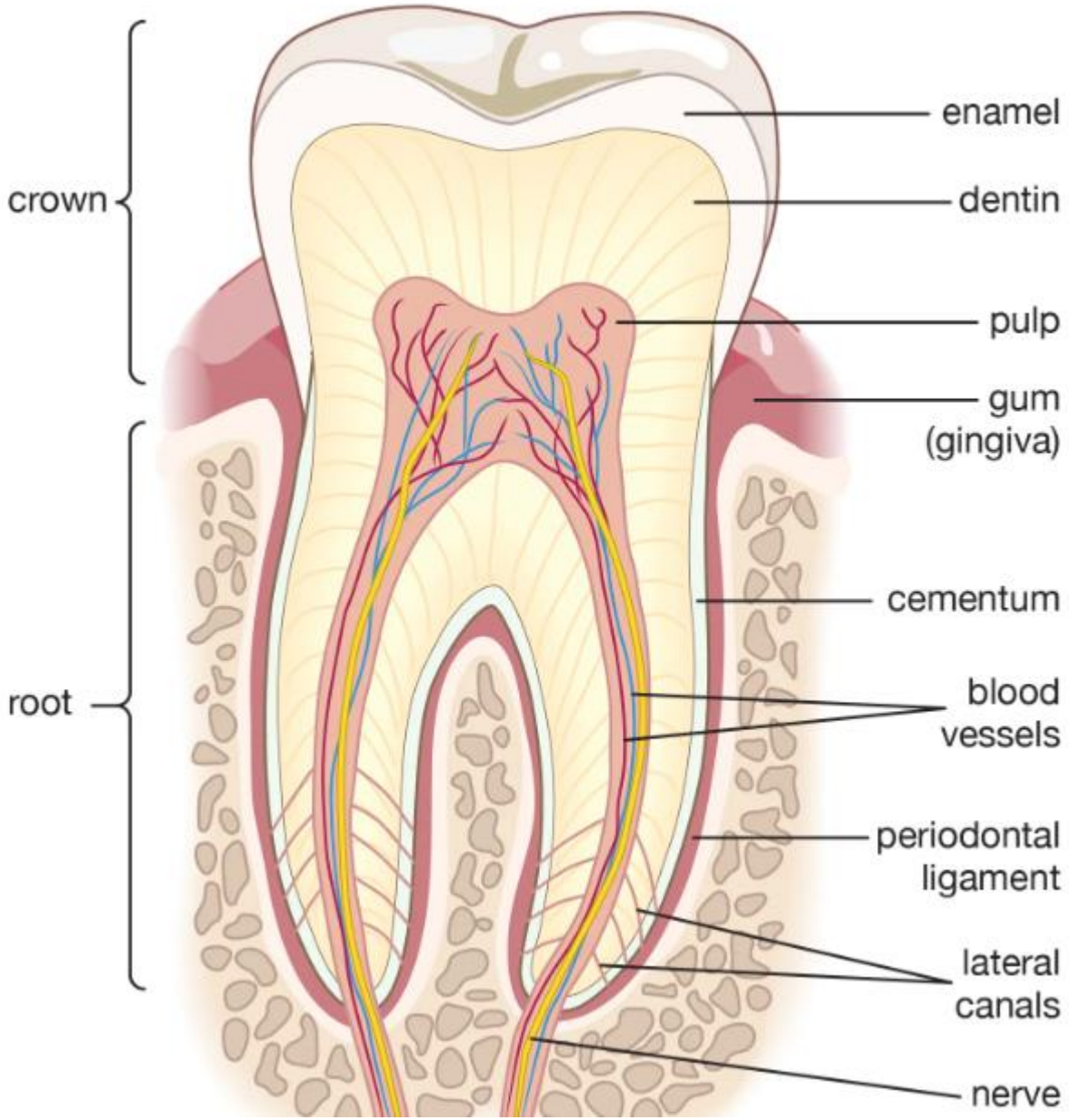
IF PAIN OF ODONTOGENIC ORIGIN

Refer to a dentist

- We will take dental radiographs and conduct a clinical exam to form a diagnosis and treatment options

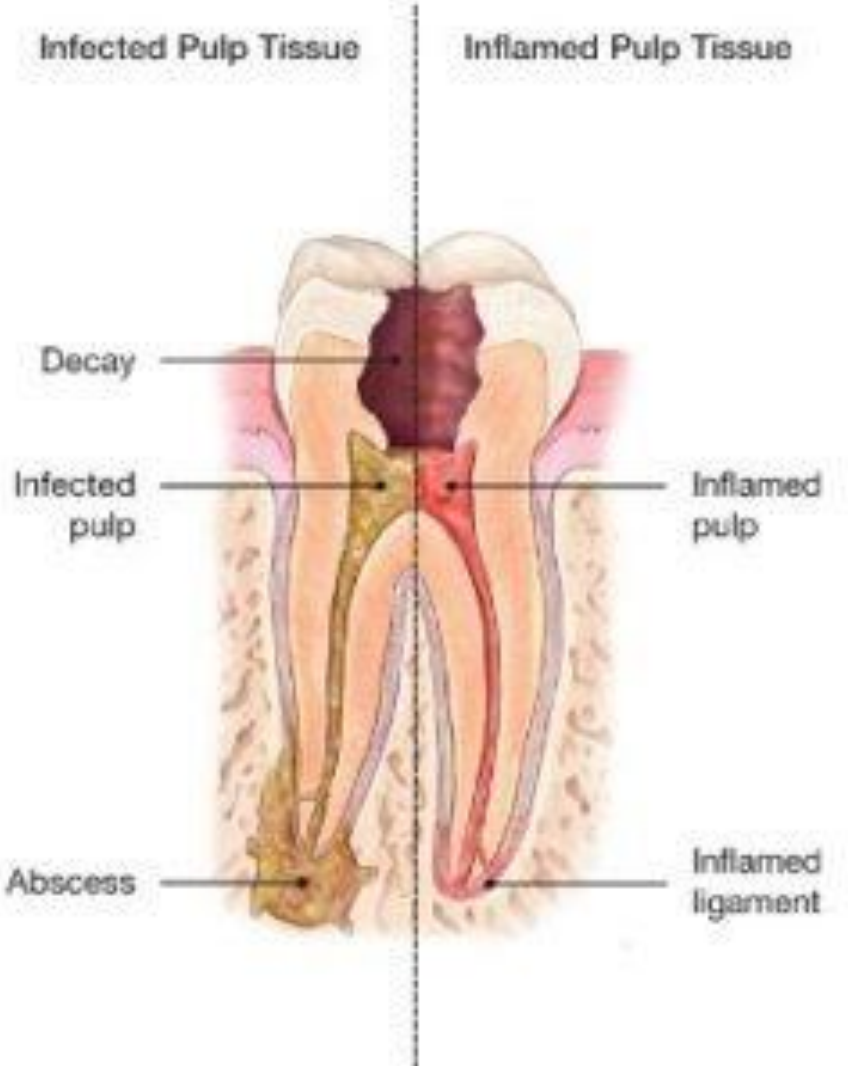
    - There are many potential reasons why someone could be having odontogenic pain

    - Examples: *Exposed roots; dental trauma; deep cavity; cracked tooth; sinus issues; non odontogenic reasons; gum infection; apthous ulcer; etc*

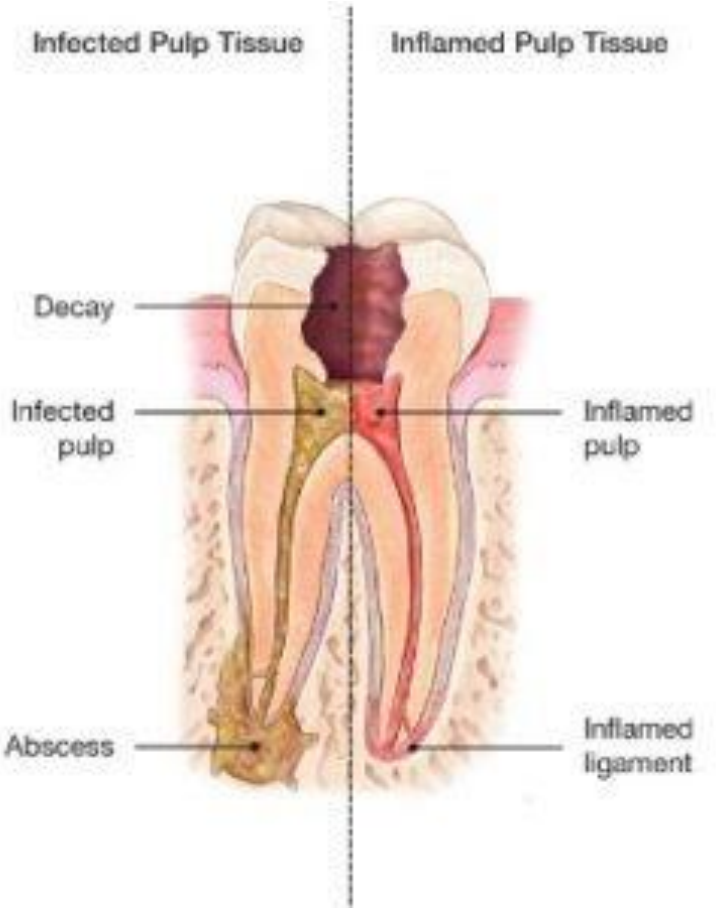

crown
root
enamel
dentin
pulp
gum
(gingiva)
cementum
blood
vessels
periodontal
ligament
lateral
canals
nerve

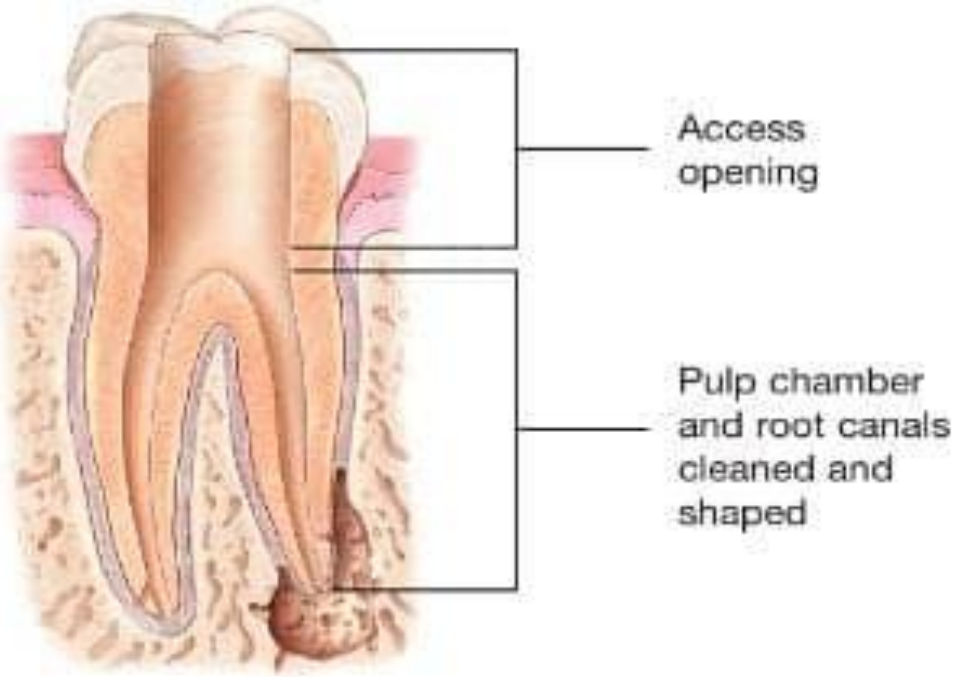
IF TRUE PAIN OF ODONTOGENIC ORIGIN → PULP INVOLVED

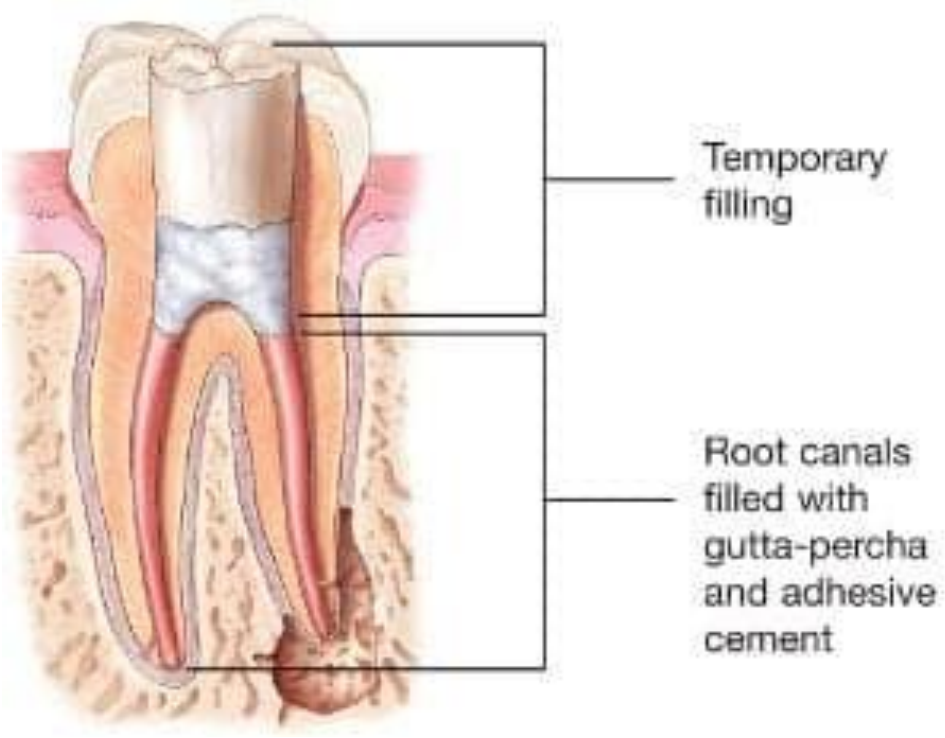
Treatment Options: Extraction or Endodontic Treatment (Root Canal Treatment)

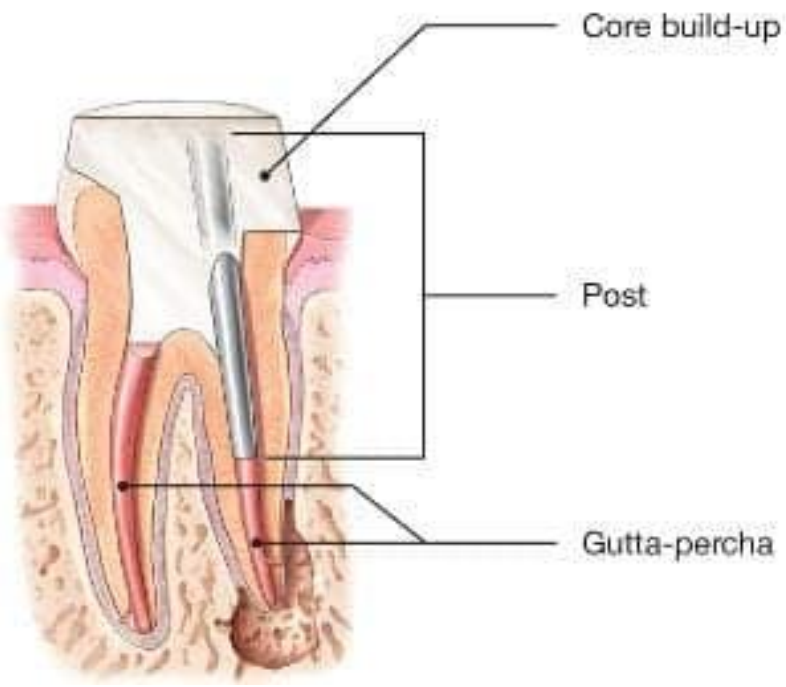


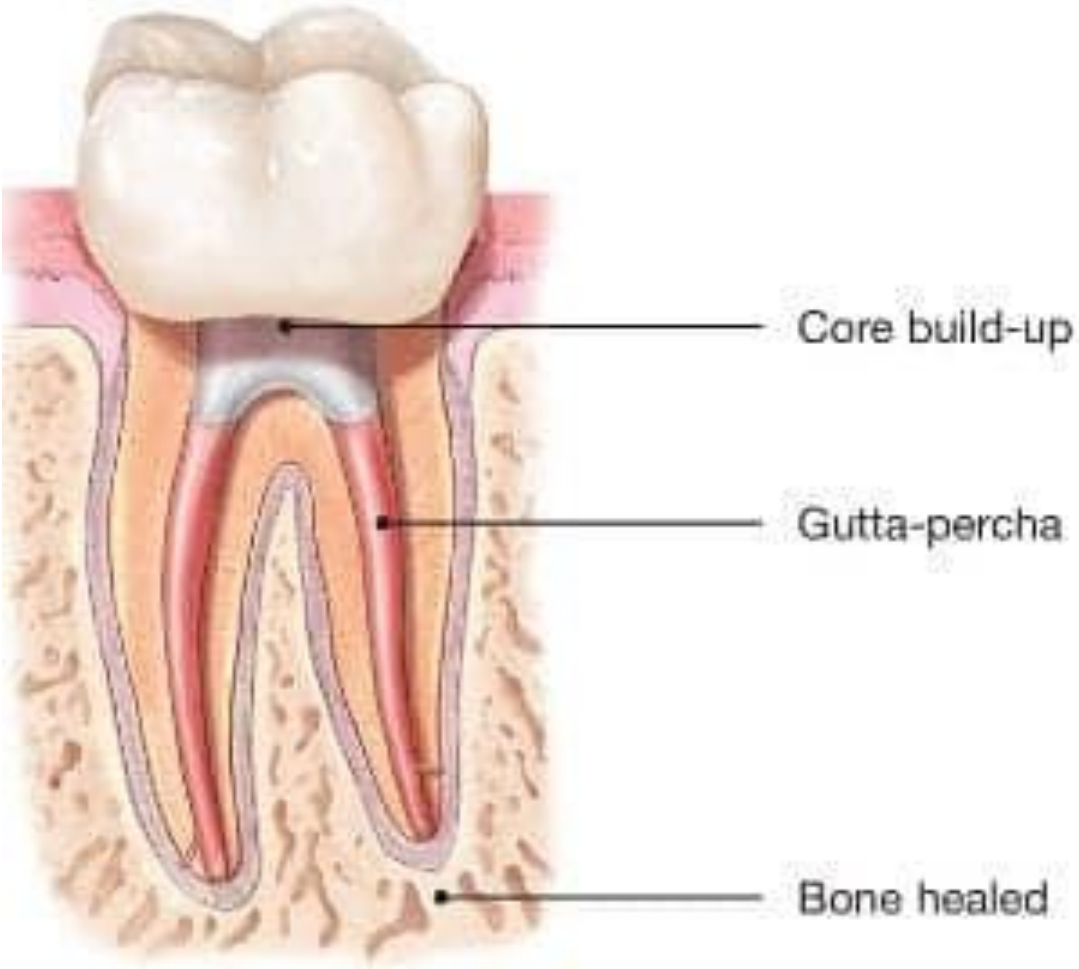
ENDODONTIC TREATMENT (ROOT CANAL TREATMENT)






Temporary filling
Root canals filled with gutta-percha and adhesive cement


Core build-up
Post
Gutta-percha


Core build-up
Gutta-percha
Bone healed

ALGORITHM FOR DENTAL PAIN

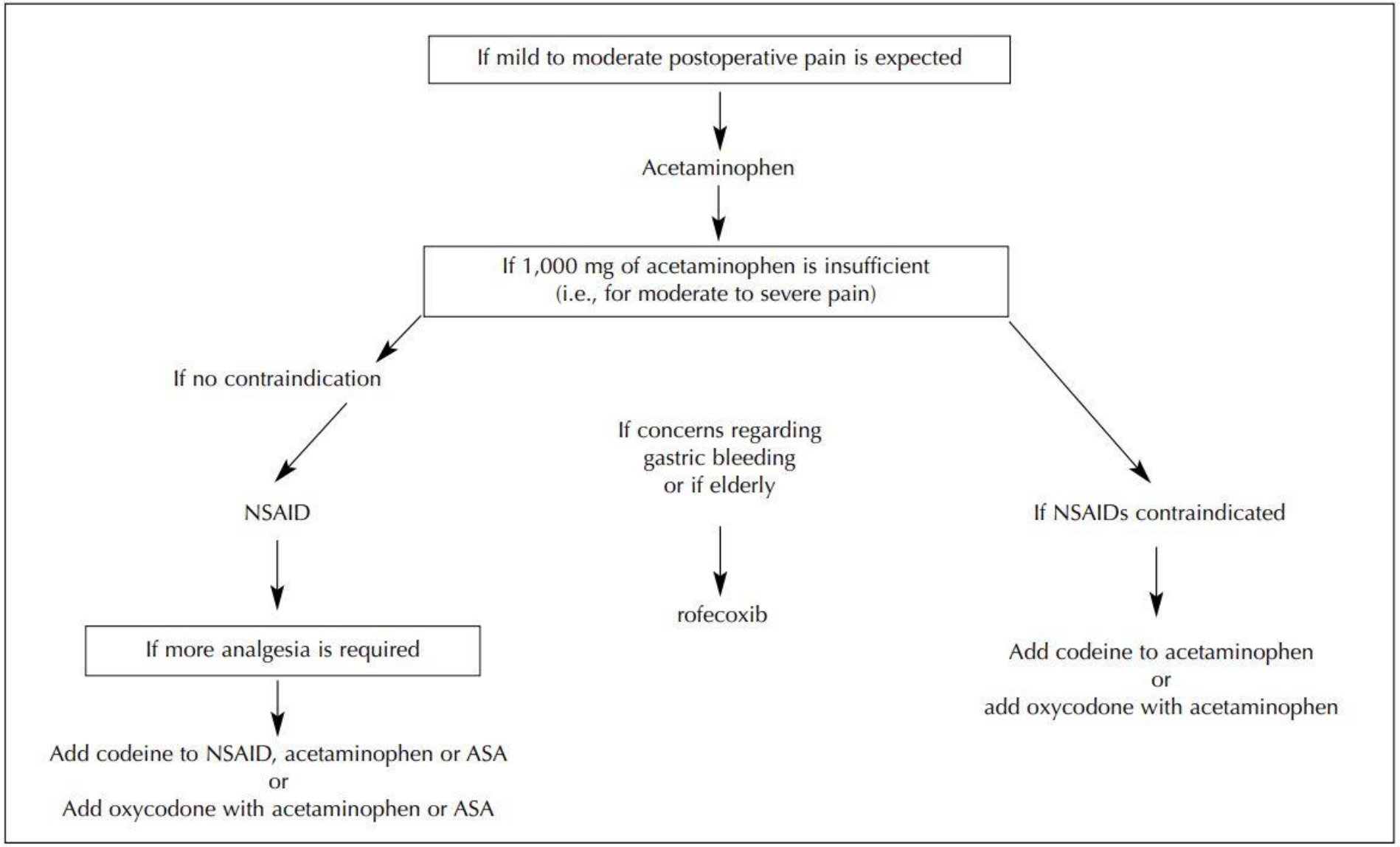


Figure 2: *Algorithm for analgesic use. This algorithm should be considered to manage acute postoperative pain in the adult.*

DENTAL PAIN- DO NOT USE OPIOIDS UNTIL NON OPIOIDS OPTIMIZED

For post-operative dental pain, the dose and frequency of a non-opioid (ibuprofen and/or acetaminophen) analgesic should be optimized. If this is not sufficient for managing pain, an opioid may be considered. If an opioid analgesic is appropriate, consider limiting the number of tablets dispensed and discuss the proper use and disposal of opioid drugs. Daily dispensing and/or delayed prescriptions may be useful strategies for appropriate use of opioids.

Sources:

Bailey E, et al. Ibuprofen and/or paracetamol (acetaminophen) for pain relief after surgical removal of lower wisdom teeth. Cochrane Database Syst Rev. 2013 Dec 12;(12):CD004624. PMID: 24338830.

Haas DA. An update on analgesics for the management of acute postoperative dental pain. J Can Dent Assoc. 2002 Sep;68(8):476-82. PMID: 12323103.

Related Resource:

Managing pain after wisdom teeth removal: Your questions answered. https://www.ismp-canada.org/download/OpioidStewardship/WisdomTeethRemoval-EN.pdf

SUGGESTIONS FOR NON OPIOID OPTIMIZATION

Table 1 **Acetaminophen and NSAID dosing regimens for dental pain**

Drug (brand name[a])	Dose (mg)	Frequency	Daily maximum (mg)
Adults			
Acetaminophen	500–1,000	q4–6h	4,000
Acetylsalicylic acid (Aspirin)	325–1,000	q4–6h	4,000
Celecoxib (Celebrex)	200	once/day	400
Diflunisal (Dolobid)	500	q12h	1,500
Etodolac (Ultradol)	200–400	q6–8h	1,200
Floctafenine (Idarac)	200–400	q6–8h	1,200
Flurbiprofen (Ansaid)	50	q4–6h	300
Ibuprofen (Advil, Motrin)	400	q4–6h	2,400
Ketoprofen (Orudis)	25–50	q6–8h	300
Ketorolac (Toradol)	10	q4–6h	40 (5 days max.)
Naproxen (Anaprox, Naprosyn)	275/250	q6–8h	1,375
Rofecoxib (Vioxx)	50	once/day	50 (5 days max.)
Children			
Acetaminophen (Tylenol, Tempra)	10–15 mg/kg	q4–6h	65 mg/kg[b]
Ibuprofen (Children's Advil)			
age 2–12	10 mg/kg	q6–8h	
over age of 12	200–400 mg	q4h	1,200

Haas DA. An update on analgesics for the management of acute postoperative dental pain. J Can Dent Assoc. 2002 Sep;68(8):476-82. PMID: 12323103.

QUESTION

99 year old M in LTC

MH: DM II; HTN; Dyslipidemia; Alzheimer's

NKDA

Hosp: Non contrib

CC: Pain in bottom right part of mouth; pimple came up yesterday



Question: What is differential diagnosis?
What are the next steps?
He asks you for antibiotics. Do you write a prescription for them?

DO NOT PRESCRIBE ANTIBIOTICS FOR TOOTHACHES OR LOCALIZED DENTAL ABSCESS

Irreversible pulpitis or toothache occurs when the soft tissue and nerve inside the tooth (the dental pulp) becomes damaged because of decay, trauma, or large fillings. The intense pain is caused by inflammation of the dental pulp and the tissue surrounding the root – not by infection. Because this is not an infection, antibiotics do not relieve the pain and should not be used. Treatment for this condition is the removal of the damaged or diseased dental pulp, either through root canal therapy or extraction of the tooth. Inflammatory dental pain is best managed by NSAIDs.

An acute dental abscess is a localized infection that occurs due to an untreated infection of the dental pulp. Root canal therapy or extraction of the tooth, along with drainage of the abscess, is required to remove the infected tissue. Antibiotics are of no additional benefit. In the event of systemic complications (e.g., fever, lymph node involvement, or spreading infection), or for an immunocompromised patient, antibiotics may be prescribed in addition to drainage of the abscess. When antibiotics are used, consider strategies such as delayed prescriptions and/or shortened durations with reassessment for antibiotic resistance risk mitigation.

Sources:

Agnihotry A. Antibiotic use for irreversible pulpitis. Cochrane Database Syst Rev. 2016 Feb 17;2:CD004969. PMID: 26886473.

American Dental Association. Antibiotics for Dental Pain and Swelling Guideline.

Cope AL, Francis N, Wood F, Chestnutt IG. Systemic antibiotics for symptomatic apical periodontitis and acute apical abscess in adults. Cochrane Database Syst Rev. 2018 Sep 27;9(9):CD010136. PMID: 30259968.

DO NOT PRESCRIBE ANTIBIOTICS FOR ODONTOGENIC REASONS WITHOUT A DENTAL DIAGNOSIS

Antibiotic resistance has increased because of the widespread use of antibiotics over many years. It is a significant global threat to health. Opioid misuse has also become a serious problem in recent years. During a pandemic phase where only "essential" dental care is permitted or advised, it may be necessary to prescribe antibiotics or analgesics without examining the patient in person. When managing new dental infections and/or dental pain on an emergency basis, if the concern has not resolved after the preliminary course of therapy, the patient should be re-examined to determine the next steps.

Sources:

Palmer NOA, Seoudi N. The effect of SARS-CoV-2 on the prescribing of antimicrobials and analgesics by NHS general dental practitioners in England. Br Dent J. 2021 Jan 21:1–6. PMID: 33479515.

Shah S, Wordley V, Thompson W. How did COVID-19 impact on dental antibiotic prescribing across England? Br Dent J. 2020 Nov;229(9):601-604. PMID: 33188343.

Table 1. Indications for Adjunctive Antibiotics

Acute Apical Abscess in Immunocompromised Patients
• Localized fluctuant swellings
• Patient with systemic disease causing impaired immunologic function
Acute Apical Abscess in Immunocompetent Patients *(When same visit treatment is not an option)*
• Localized fluctuant swellings
Acute Apical Abscess with Systemic Involvement
• Elevated body temperature >100°F
• Malaise
• Unexplained trismus
• Lymphadenopathy
Progressive Infections
• Rapid onset of swelling <24hrs
• Cellulitis or a spreading infection
• Osteomyelitis
Persistent Infection
• Chronic exudation, which is not resolved by regular intracanal procedures and medications

American Association of Endodontists. Colleagues for Excellence 2019. Endodontics and Antibiotic Update

Table 2. Conditions NOT Requiring Adjunctive Antibiotics

Pain Without Signs and Symptoms of Infection
• Symptomatic irreversible pulpitis
• Symptomatic apical periodontitis (Pain to percussion and biting)
Teeth with Necrotic Pulps and a Radiolucency
Teeth with a Sinus Tract/Parulis (Chronic Apical Abscess)
Acute Apical Abscess in Immunocompetent Patients *(When same visit treatment is an option)*
• Localized fluctuant swellings

American Association of Endodontists. Colleagues for Excellence 2019. Endodontics and Antibiotic Update

CASE EXAMPLES



Figure 1: Tooth #31: Necrotic pulp/acute apical abscess, spreading infection



Figure 3: Tooth #30: Necrotic pulp/chronic apical abscess, sinus tract

American Association of Endodontists. Colleagues for Excellence 2019. Endodontics and Antibiotic Update

ANTIBIOTICS FOR ODONTOGENIC INFECTIONS

Table 3. Antibiotics and dosages in endodontics

DRUG	LOADING DOSE	ADULT MAINTENANCE DOSE
Amoxicillin	NA	500 mg q8 h 3-7 days
Amoxicillin w/ clavulanic acid	NA	500/125 mg q8h 7 days
Penicillin VK	NA	500 mg q4-6 h 3-7 days
*Azithromycin	500 mg	250 mg q24h (5 days)
*Clindamycin	NA	300 mg q6h 3-7 days
Cephalosporins (Cephalexin)	NA	500 mg q6h 3-7 days
Metronidazole **Complement antibiotic*	NA	500 mg q8h 5-7 days

*Penicillin allergy w/hx of hives, anloedema, or anaphylaxis
**Provides great gram-negative anaerobic activity with Penicillin

American Association of Endodontists. Colleagues for Excellence 2019. Endodontics and Antibiotic Update

QUESTION

A dentist contacts you about one of her patients asking for clarification re: cardiac status

The patient is a 74 year old F who had a “heart surgery” three years ago. The patient has mild cognitive decline and does not know what type of surgery she had. The patient is unable to tell the dentist what type of surgical intervention she had.

You know that the patient had a prosthetic heart valve placed 3 years ago at VGH as per a cardiac surgeon’s report cc’ed to you.

She has been well since.

The dentist asks you whether antibiotic prophylaxis if required for dental appointments

Question: How do you respond to the dentist?

ANTIBIOTIC PROPHYLAXIS FOR DENTAL REASONS

Orthopedic procedures → in general, does not require

Cardiac surgery history → very few specific procedures require

ANTIBIOTIC PROPHYLAXIS- VERY FEW PATIENTS REQUIRE

Infections of orthopedic implants are uncommon events and are rarely caused by bacteria found in the mouth. Although dental procedures such as extractions cause transient bacteremia, most bacteremia of oral origin occurs with activities of daily living, including brushing, flossing, and chewing. There is no reliable evidence that antibiotics before dental procedures prevent prosthetic joint infections. Patients should not be exposed to the adverse effects of antibiotics when there is no evidence of benefit.

There is no convincing evidence that oral bacteria from dental procedures cause infections of the following devices at any time after implantation: pacemakers; implantable defibrillators; ventriculoatrial/ventriculoperitoneal shunts; devices for patent ductus arteriosus, atrial septal defect, and ventricular septal defect occlusion; peripheral vascular stents; prosthetic vascular grafts; hemodialysis shunts; coronary artery stents; dacron parotid patches; and chronic indwelling central venous catheters.

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CDA Position on Prevention of Infective Endocarditis



INFECTIVE ENDOCARDITIS

Those at greatest risk of an adverse outcome from infective endocarditis should receive single dose preventive antibiotics before all dental procedures that involve manipulation of gingival tissue or the periapical regions of teeth or that perforate the oral mucosa.

The following procedures and events **do not need prophylaxis** for high risk patients:

- routine anesthetic injection through noninfected soft tissue
- dental radiographs
- placement of removable prosthodontic or orthodontic appliances
- adjustment of orthodontic appliances
- placement of orthodontic brackets
- shedding of deciduous teeth
- bleeding from trauma to the lips or mucosa

ABX PROPHYLAXIS INDICATIONS

Antibiotic Prophylaxis IS REQUIRED for patients with:	Routine Antibiotic Prophylaxis IS NOT required for patients with:
1. a prosthetic cardiac valve	1. mitral valve prolapse
2. a prosthetic cardiac valve repair	2. rheumatic heart disease
3. a history of infective endocarditis	3. bicuspid valve disease
4. a cardiac transplant that develops a problem in a heart valve.	4. calcified aortic stenosis
5. specific serious congenital (present from birth) heart conditions including: • unrepaired or incompletely repaired cyanotic congenital heart disease, including those with palliative shunts and conduits • a completely repaired congenital heart defect with prosthetic material or device, whether placed by surgery or by catheter intervention, during the first six months after the procedure • any repaired congenital heart defect with residual defect at the site or adjacent to the site of a prosthetic patch or a prosthetic device	5. congenital heart conditions such as ventricular septal defect, atrial septal defect and hypertrophic cardiomyopathy.

DENTITION AND INFECTIVE ENDOCARDITIS- CONTROVERSIAL

Abx prohylaxis for IE is now being questioned

UK- NICE Guidelines 2008 → recommended against abx prophylaxis for dental procedures for high risk IE patients → over the last decade, dentists in UK stopped giving abx prophylaxis and there was no convincing increase in incidence of IE or death associated with IE

Sweden- same story as UK → no increase in streptococcal IE, even among high risk patients

MEDICAL DENTAL COLLABORATION

Some comments:

- Dentists may reach out to family MD for clarification re: medical history
    - The only medical history that a dentist has is the self-reported form filled out in the waiting room → *many patients are poor historians*

- Vast majority of dentists do not have access to CST Cerner or other EMR systems in BC

- Dentists can get medication lists from Pharmanet or by contacting the patient's pharmacy

MEDICAL DENTAL COLLABORATION

Comments:

- “Medical clearance” for dental procedures
    - Ultimately, the dentist takes responsibility for any dental procedure they are performing → *not the family MD*
    - In appropriate scenarios, dentists should discuss with family MDs for clarification or advice re: stability and severity of systemic illnesses or pre-operative optimization
    - Use of epinephrine → cardiac stability
- Examples:
    - *Poor glycemic control and patient needs dental extraction*
    - *Steroid supplementation for dental surgery*
    - *Interruption of anticoagulation for dental extractions*

QUESTION

Your LTC patient thinks they might have a tumour in their mouth

She asks if you can look and give advice

How do you respond?

ORAL CANCER

Most common: Oral Squamous Cell carcinoma

Signs and symptoms

- White and/or red mucosal lesions in mouth
- Lumps or changes in texture of colour of oral tissues
- Bleeding or numbness in mouth
- Sores or patches that don’t heal
- Difficulty swallowing
- Changes in taste or tongue sensation



ORAL CANCER

Risk factors

- Tobacco
- Alcohol consumption
- Oral sex
  - HPV → HPV vaccination
- Prolonged repeated exposure of lips to sun → wear lip balm with SPF protection
- Poor diet; genetics and gender
- History of leukoplakia

HPV AND ORAL CANCER

75% of patients have at least one HPV infection in their life

Immunocompetent patients → clear infection → some develop cancer

Depending on strain → warts and cancers of mouth, throat, cervix, genitals

HPV linked to 90% of H and N cancers and 70% of throat cancers

There are now more HPV related H and N cancers than cervical cancers annually

Three vaccines authorized by Health Canada: *Gardasil; Gardasil 9; Cervarix*

- Probably not for LTC patients! But for your younger ones!

Office of the Chief Dental Officer of Canada1. Human papillomavirus and oral health. Can Commun Dis Rep. 2020 Nov 5;46(1112):380-383. doi: 10.14745/ccdr.v46i1112a03. PMID: 33447158; PMCID: PMC7799876.

ORAL CANCER

Management of suspicious oral lesion

- Biopsy
- Imaging → ultra sound; CT; MRI

Refer to ENT or dentist (or dental specialists in Oral Medicine & Oral Pathology)

Treatment

- Dependent on staging/grading + other factors
    - Surgery; chemo; and/or radiation
    - Maxillofacial Reconstruction

CASE QUESTION

92 year old F

MH: Osteoporosis (history of falls; wrist fracture 2021)

NKDA

Hosp: Wrist surgery 2021

Medications: Denosumab

History: Tooth extracted 2 months ago

Question: What is your differential diagnosis? What is the next step?



MEDICATION RELATED OSTEONECROSIS OF JAWS

MRONJ Clinical criteria

- Current or previous treatment with antiresorptive therapy alone or in combination with immune modulators or antiangiogenic medications
- Exposed bone or bone that can be probed through an intra oral or extra oral fistula in the maxillofacial region that has persisted for more than 8 weeks
- No history of radiation therapy to the jaws or metastatic disease to the jaws

MRONJ

Commonly implicated drugs

- Bisphosphonates
- Denosumab
- Rank L inhibitors
- Romosozumab

DRUG HOLIDAYS

Questions to family MDs → Drug Holidays for minor dental surgery (extractions/dental implants)

- No clear evidence for drug holidays

- Discuss with oral surgeon and patient → risk of skeletal fractures vs MRONJ → some situations may warrant

- High risk pt → Some now consider pre-medication with Pentoxifylline and tocopherol → up to surgeon

CASE

A dentist sends you a letter informing you that he plans to extract some infected/broken teeth on your frail elderly (94 yr F) patient

Your patient is on rivaroxaban for non valvular A Fib

The dentist asks you if it is possible to hold the anti coagulant for the dental surgery

Question: How do you respond?

ANTI COAGULATION

Dental bleeding can be controlled with local hemostatic measures → *firm biting pressure with moist gauze*

If < 3 teeth to be extracted, bleeding can and should be controlled with local hemostatic measures only. No modification/cessation of DOAC

This is my recommendation → phase the extractions; do not complete in one visit if possible

If >3 teeth need to be removed in one appointment (i.e. severe dental anxiety requiring sedation + full mouth of teeth requiring extractions), follow Thrombosis Canada 2021 guidelines.

All post op care (i.e. prolonged bleeding) is the responsibility of the dentist

NOAC-DOACs Perioperative Management (thrombosiscanada.ca)

FUNDING IN CANADIAN DENTISTRY



FUNDING FOR DENTISTRY IN CANADA 2024

About 2/3 of Canadians → employer sponsored dental benefits

About 1/3 of Canadians → under or uninsured

Impacts:

- Cost is a barrier to dental care
- Impacts on hospital ER → most hospitals are not able to provide definitive treatment
  - Time, effort, money → “go see a dentist”
- Untreated disease → unnecessary pain and suffering → psychosocial, medical, etc. impacts

NEW IN 2024- CANADIAN DENTAL CARE PLAN

February 13, 2024



FILLING IN THE FACTS

The Canadian Dental Care Plan

- The Canadian Dental Care Plan (CDCP) is a federal program intended to provide dental coverage for Canadians who **do not have dental benefits** and have a household income of **less than $90,000 a year.**
- The program is currently phasing in applicants, but is not expected
- The CDCP is a dental benefit administered by Health Canada. **It is not a free dental program.**
- Patients may be required to make a co-payment of up to 60% depending on their adjusted family net income. They may also have to pay costs **the CDCP does not cover.**
- Before proceeding with treatment, it is important to understand your dental care costs.
- **Not all dental services are covered under the CDCP.**
- Please tell your dental provider if you plan to use CDCP benefits. This office may or may not participate in the federal program.

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DENTISTRY IN LTC

Do LTC residents need dental care?

If my patient is edentulous, do they need to even see a dentist for a check up?

Does my LTC facility have a dentist or dental hygienist? Why or why not?

How easy is it for my LTC patient to go to a community dental office to get dental work?

DENTISTRY IN LTC

Yes, LTC residents should have access to a dentist

- Relief of pain/infection; oral health related quality of life; maintain (improve? Mitigate decline?) chewing function (weight? Hydration?); manage oral inflammation

- Aspiration Pneumonia!!

Even edentulous adults should have an annual dental exam → oral cancer screening

Geriatric dentistry is not subsidized; difficult and emotionally challenging work; limited formal training opportunities; no established practice pattern

It is NOT easy for LTC patients to go to a community dental office

SCALING PREVENTS ASPIRATION PNEUMONIA!

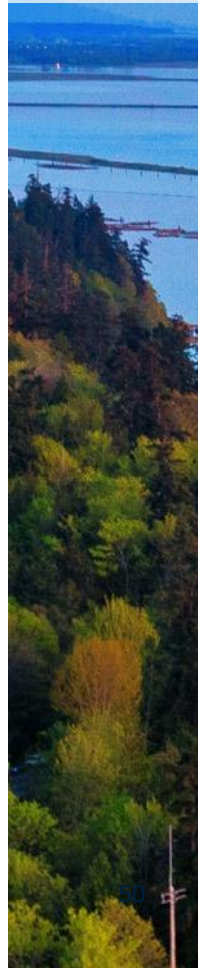
Aspiration pneumonia

Leading cause of death in LTC!

Oral microbiota contributes to disease initiation

Risk Factors: dysphagia and poor oral hygiene

Oral cleaning protocols have been shown to reduce pneumonia in edentulous and dentate patients



Scannapieco FA. Poor Oral Health in the Etiology and Prevention of Aspiration Pneumonia. Dent Clin North Am. 2021 Apr;65(2):307-321. doi: 10.1016/j.cden.2020.11.006. Epub 2021 Jan 6. PMID: 33641755.

CONCLUSIONS

Oral health and general health are closely linked

Family doctors field many dental related queries → refer when appropriate to dentists

Many dental diseases require surgical intervention for resolution → antibiotics and analgesics provide only a temporary solution

The dental profession faces many ongoing challenges in optimizing the oral health of Canadians

The CDCP may improve the oral health status of Canadians in the coming decades

LEARNING OBJECTIVES

By the end of this session, you will be able to:

- Describe a family doctor's approach to dental pain and odontogenic infections
- Decide if antibiotics are appropriate for a patient with dental pathology
- Determine if antibiotic prophylaxis is required for dental procedures

QUESTIONS

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THE UNIVERSITY OF BRITISH COLUMBIA