Dental pain management in ED

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Odontalgia/Toothache

intense

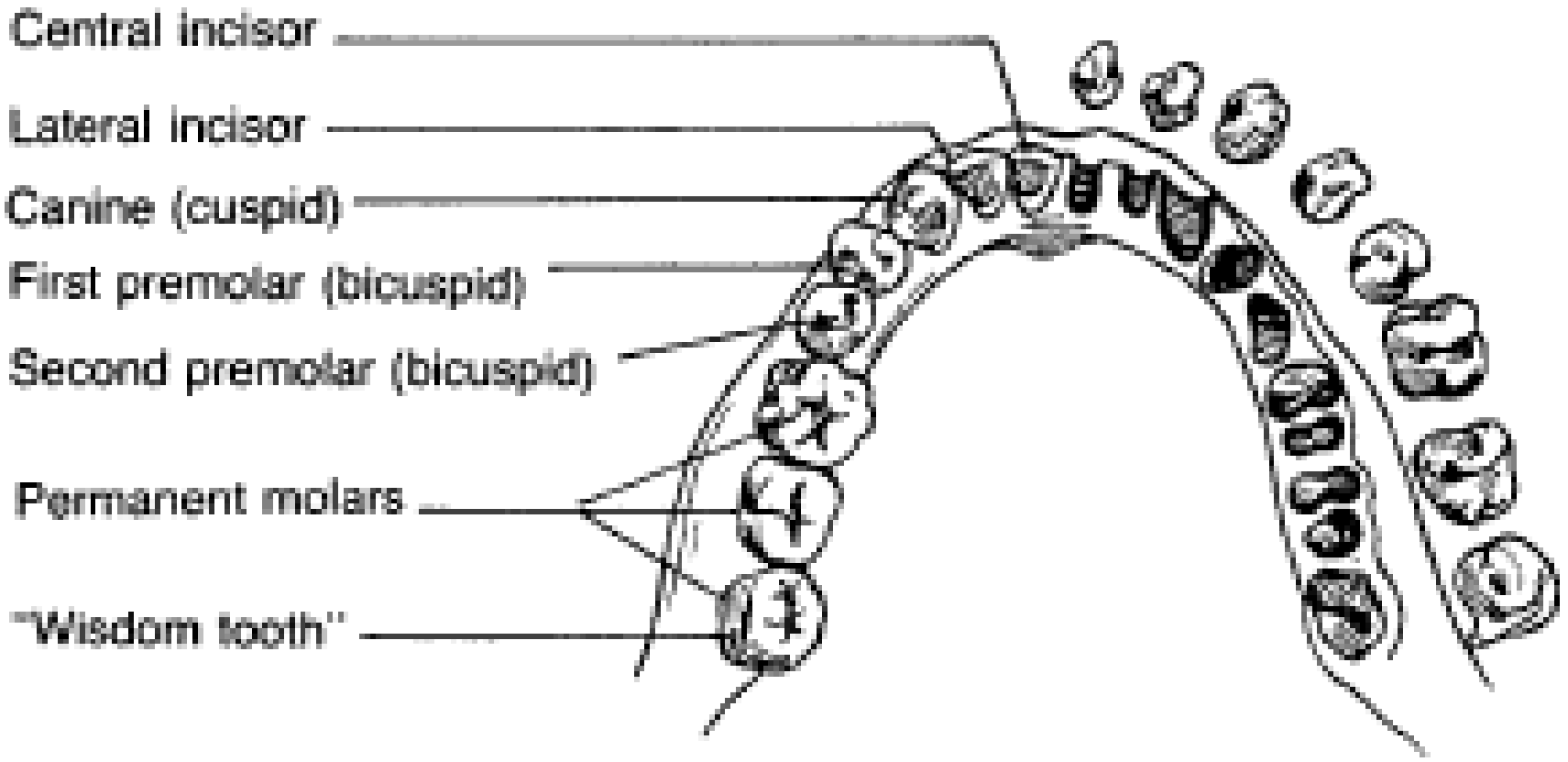
severe

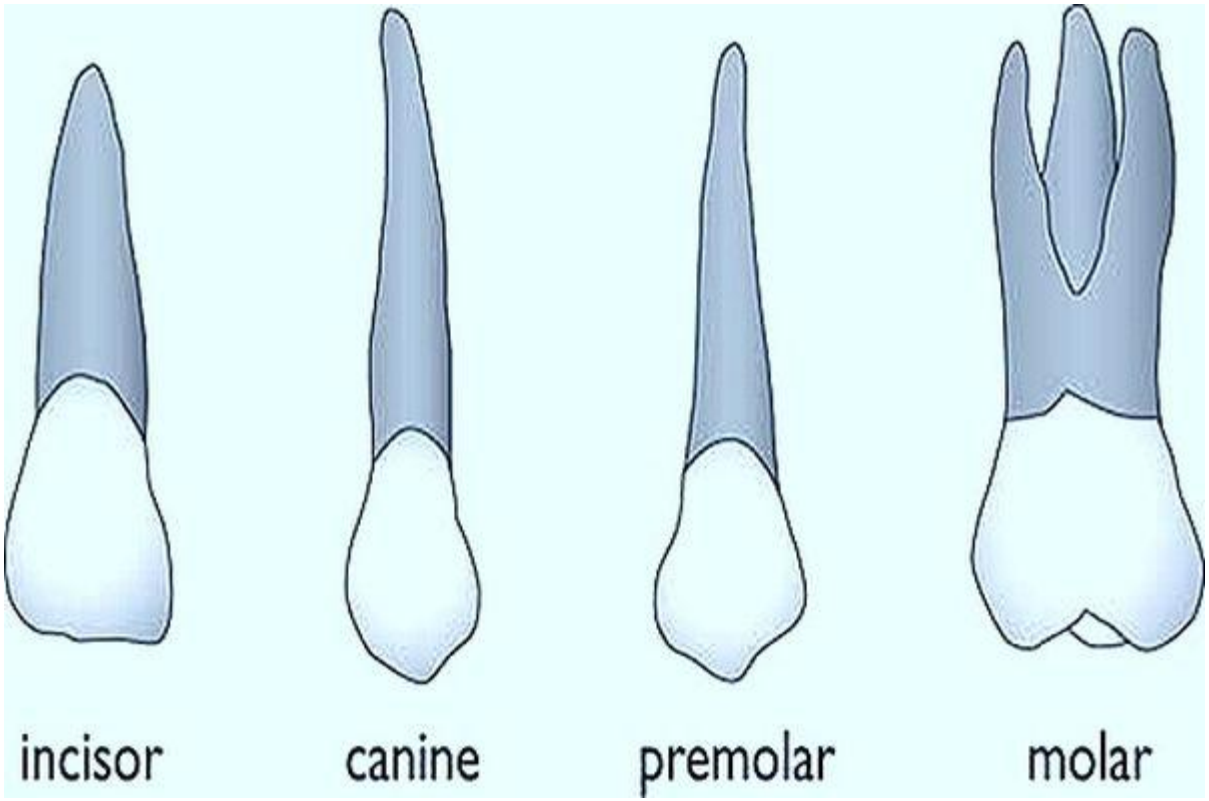
Unbearable..!

Pain?

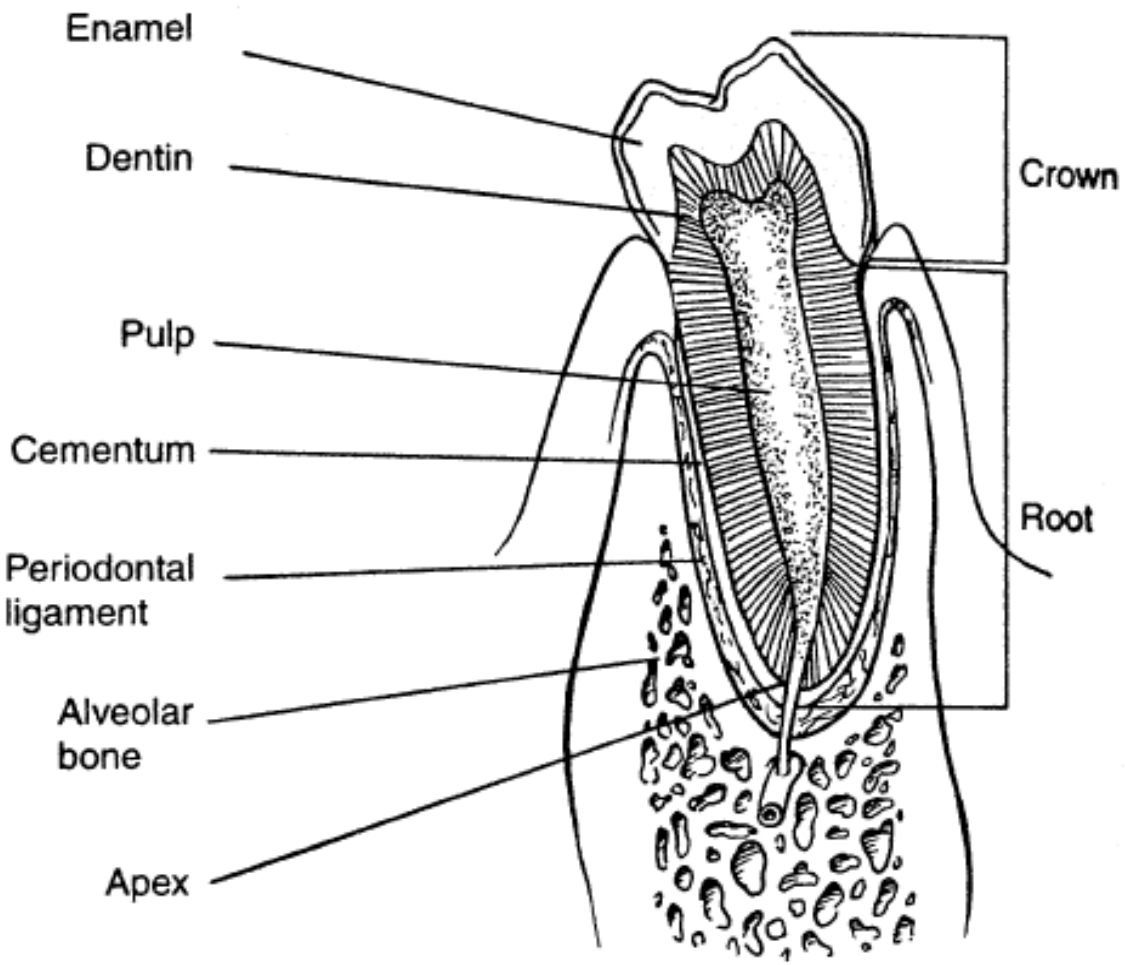
"Pain is, with very few, if indeed any exceptions, morally and physically a mighty and unqualified evil. And, surely, any means by which its abolition could possibly be acccomplished, with security and safety, deserves to be joyfully and greatly welcomed by medical science"

…Sir James Young Simpson, administerer of the first obstetrical anesthesia (1811-1870)


Central incisor
Lateral incisor
Canine (cuspid)
First premolar (bicuspid)
Second premolar (bicuspid)
Permanent molars
"Wisdom tooth"


incisor
canine
premolar
molar

Dental anatomic unit



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Causes of acute toothache

- Main causes:
  - pulpitis
  - dental trauma

- Pain due to hot fluids→ pulpal inflammation
- Pain and sensitivity to cold→ gum recession, tooth decay
- Pain while biting→fractured tooth, decay

Causes of acute toothache

- Leaking fillings, micro cracks (tongue piercing)
- Referred pain: sinusitis
- Refer to a dentist but initiate pain relief in ED
- Typical common complaint of drug seeker….(I need the morphine!!!)

Pain relief/treatment

- Nonsteroidal antiinflammatory drugs (NSAIDs)
- Acetamenophen/Paracetamol
- Narcotics
- Topical anesthesia
- Local nerve blocks

NSAIDS in the ED

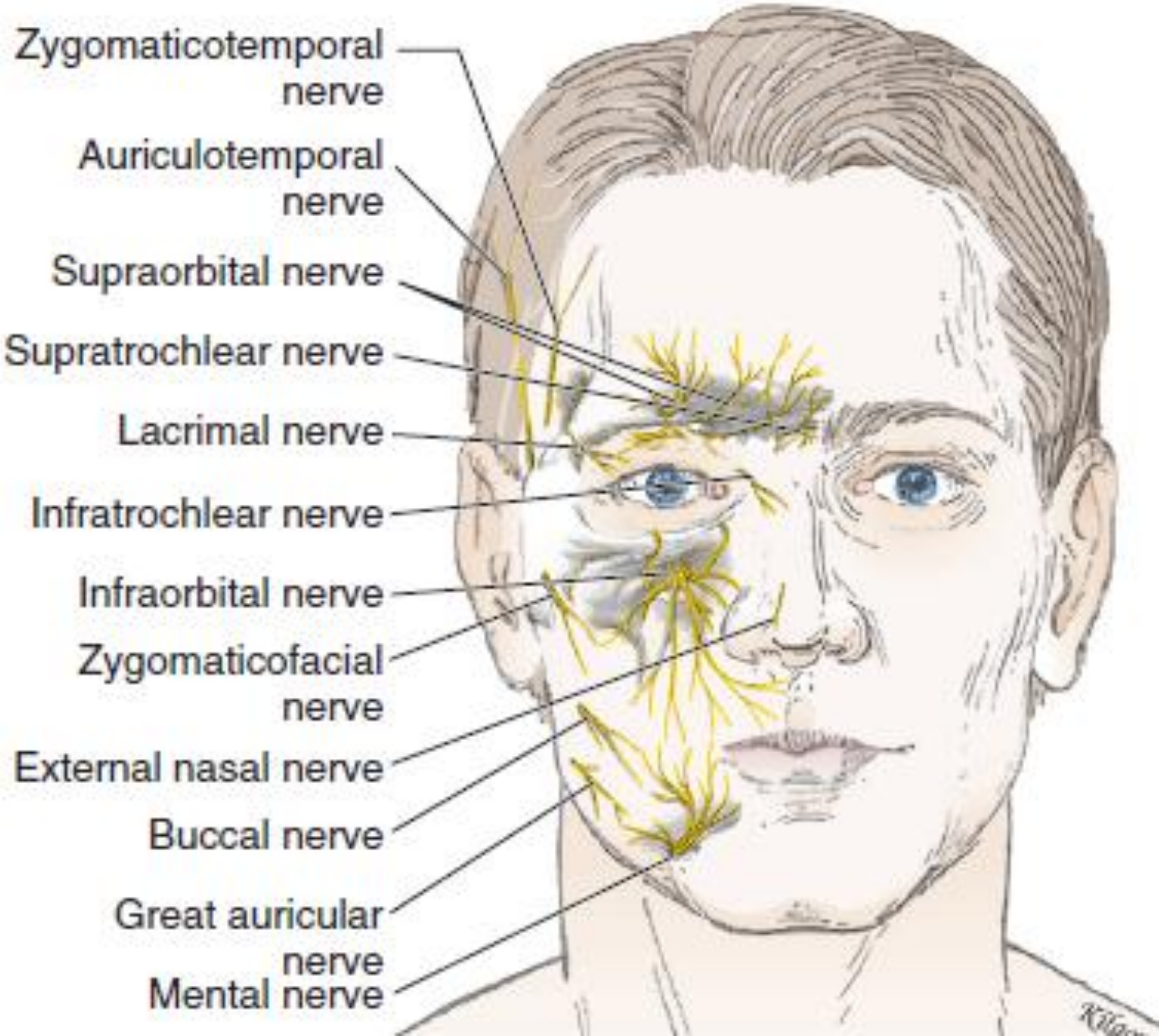
- Diclofenak sodium 1 amp IM
- Ibuprophen 10mg/kg PO
- Etodolac 30mg IM/IV

Narcotics in the ED

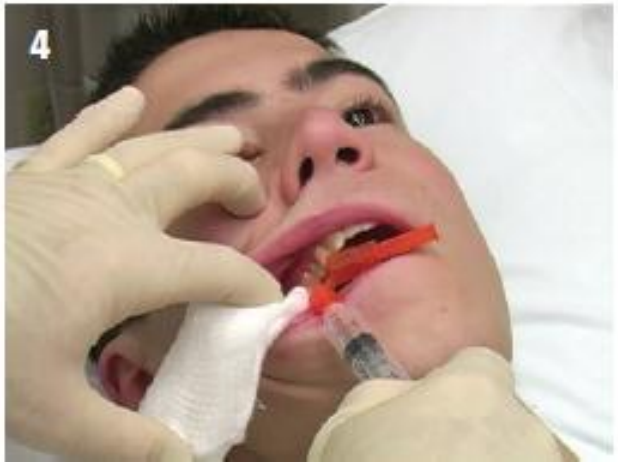
- Fentanyl: 1-2 micrograms/kg (pain relief lasts about 40 minutes, short acting)
- Morphine: 0,1 mg/kg IV, 10 mg IM or SC, IV every 4 hours
- Meperidine: 1 – 2 mg/kg IV veya IM (15-fold less potential than morphine)
- Tramadol: 50 – 100 mg IV

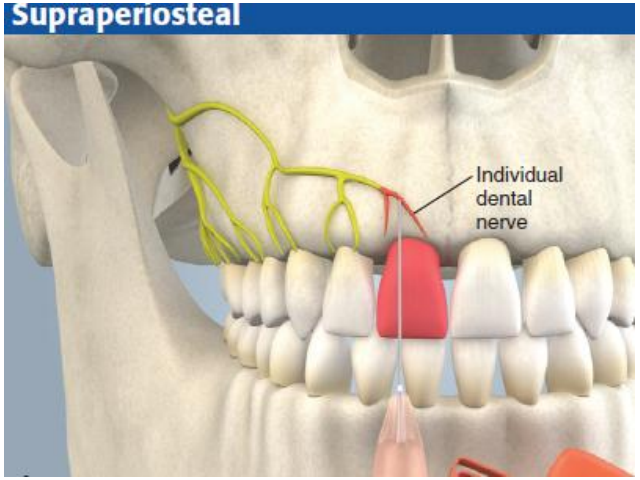
Topical anesthesia

- paste of 10% lidocaine, 10% prilocaine, 4% tetracaine
- Most common anesthetic agent is2% lidocaine + vasoconstrictor (epinephrine)
- Bupivacaine + vasoconstrictor is long acting and ideal for ED procedures

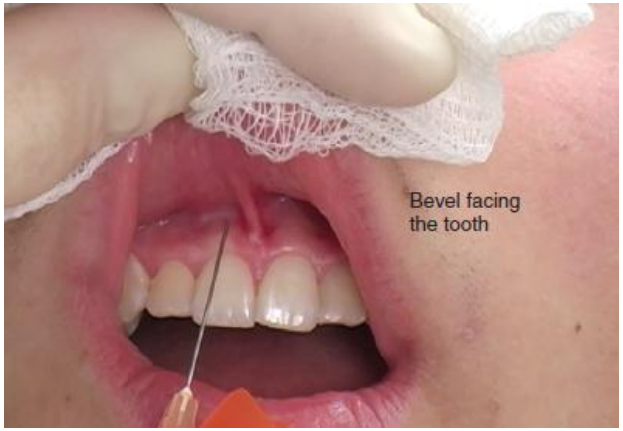

Zygomaticotemporal nerve
Auriculotemporal nerve
Supraorbital nerve
Supratrochlear nerve
Lacrimal nerve
Infratrochlear nerve
Infraorbital nerve
Zygomaticofacial nerve
External nasal nerve
Buccal nerve
Great auricular nerve
Mental nerve

Dental (Supraperiosteal) block





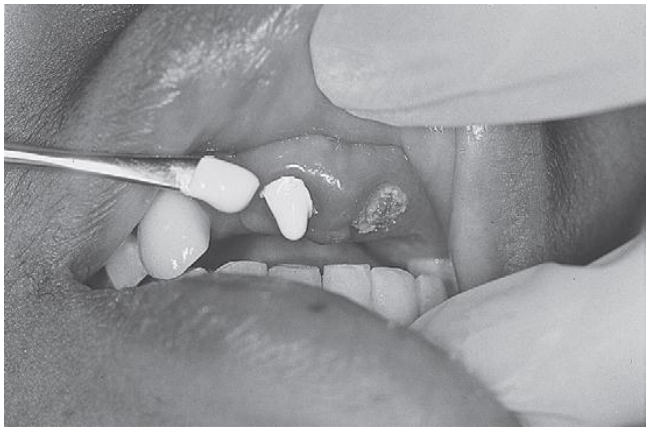
Insert the needle, aspirate the syringe to exclude intravascular placement and then inject the appropriate amount of local anesthetic (usually about 2 mL).



Treating dental fractures in ED

- 2 main reasons:
  - To cover the area and prevent contamination or infection
  - To relieve the **pain**

- Calcium hydroxide applied after a nerve block



Pain relief-Other methods

- Applying 2-octylcyano acrylate tissue adhesive (dermabond) directly to a fractured tooth or open decay (caused by temperature and air) not approved yet
- Clove oil (eugenol) popular effective home remedy for 1 few hours for acute toothache or gingivitis

Pain relief-Other methods

- Water + activated charcoal paste
- Applying viscous lidocaine directly on tooth

Review

Which of the following about adult dentition is correct?

a. There are eight incisors, four canines, eight premolars, and 12 molars.
b. There are four incisors, four canines, 12 premolars, and 12 molars.
c. There are six incisors, four canines, 10 premolars, and 12 molars.
d. None of the above.

Review

The quickest way to relieve severe odontalgia in the ED is with:

a. NSAIDs.
b. narcotic pain medication.
c. dental block.
d. none of the above.

Review

Which of the following is the best choice for a dental block for a condition for which the patient will be treated by a dentist the next day?

a. Mepivacaine with levonordefrin
b. Bupivacaine with epinephrine
c. Mepivacaine
d. Prilocaine with epinephrine

Review

Which of the following systemic conditions may cause oral pain or symptoms?

a. Cranial neuralgias
b. Stomatitis and mucositis
c. Erythema migrans
d. Crohn's disease
e. All of the above

Literature

- A study of 10,325 ED visits for dental problems, exclusive of traumatic injuries, during a 1-year period (Davis et al., 2010):
  - conditions could be prevented or treated more effectively by a dentist (periapical abscess, dental caries, and acute periodontitis)
  - 80% of patients were between 20 and 50 years of age.
  - 20% had return dental related visits.
  - 75% occurred during the week and during the hours when dental offices were open.

Summary

- Dental conditions are particularly likely to raise the specter of “drugseeking behavior.”
- The savvy ED clinician: a long-acting local anesthetic block can achieve better pain relief than PO NSAIDS or opioids, and the block can likely get a patient through the night for a morning dental follow up.
- Regional blocks of the teeth can also be helpful in special situations such as pregnant patients

“Oral health care is not a privilege.

All of us deserve it”

Thank you