

DRIVING **CHANGE2023**

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# Dentofacial Injuries

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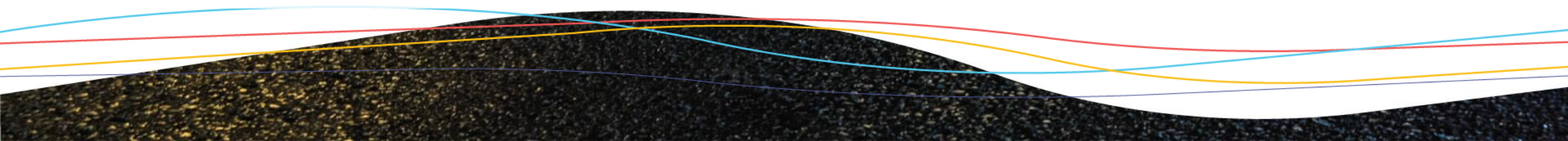
# Quick Self-Intro



- UCLA Bruin x2
  - Graduate studies in head and neck cancer biology
- Residency @ Highland Hospital in Oakland, CA
- Faculty/Attending Surgeon
  - University of the Pacific
  - Western University of Health Sciences
- On Staff at:
  - Stanford Health Center
  - Regional Medical Center of San Jose
  - Kaiser Permanente Santa Clara Medical Center
  - Alameda Hospital (Alameda County Hospital System)

# Common Dentofacial Injuries

- Dental displacements – subluxated, luxated, avulsed teeth
- Odontogenic infections
- Pericoronitis
- Jaw Fractures
- Temporomandibular joint displacements
- Intraoral bleeding – post-traumatic, post-surgical



# Adult Dental Displacements

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Concussion

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Subluxation

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Intrusion (3mm, 3-7mm, >7mm)

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Extrusion (2-week splinting)

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Avulsion (2-week splinting)

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Lateral luxation



# Flexible Splinting



Teeth naturally have microscopic movement

Rigid splinting can lead to root resorption

Most easily done using 24g wires

Splint loose tooth to at least two stable teeth both to the right and the left

Broken alveolar bone: 4 weeks

No broken bone: 2 weeks

## Pediatric Tooth Displacements

Pediatric teeth are meant to be lost.

Tooth-only displacements not typically splinted.

Lateral luxations (with alveolar bone fracture) splinted for 4 weeks.

Observe:  
concussion, subluxation, intrusion away from underlying tooth germ

Re-seat:  
extrusion < 3mm, lateral luxation with minimal or no bone fracture

Remove:  
extrusion > 3mm, intrusion into underlying adult tooth germ, avulsion

# Billing Codes

## CDT Codes

D4321: extracoronar provisional splinting (intrusion or extrusion; in cases without fracture or avulsion)

D7270: splinting of avulsed tooth

D7670: Splinting of tooth in a loose/fractured alveolar ridge

D7290: Surgical repositioning of tooth (for intrusion)

## ICD-10 Codes

S02.5XXA: Closed traumatic tooth fracture (no pulp exposure)

S02.5XXA: Open traumatic tooth fracture (with pulp exposure)

M26.34: Vertical displacement of tooth (intrusion or extrusion)

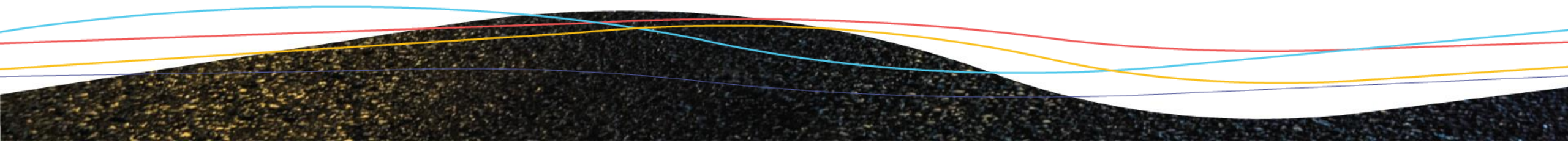
M26.33: Horizontal displacement (lateral luxation)

## CPT Codes

41899: Unlisted procedure for dentoalveolar structures (for tooth-only displacements)

21440: Treatment of dental ridge fracture (for lateral luxations, alveolar bone fractures)

Can also bill the dental "D" codes on medical claim for many insurers

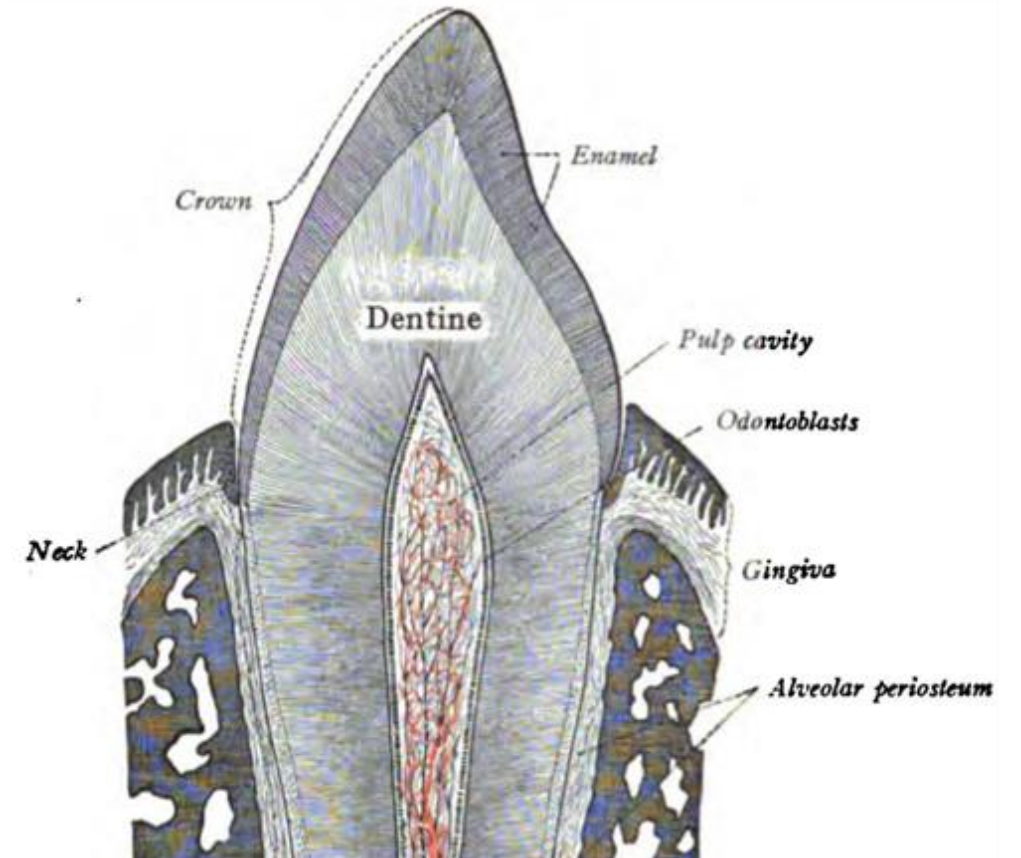
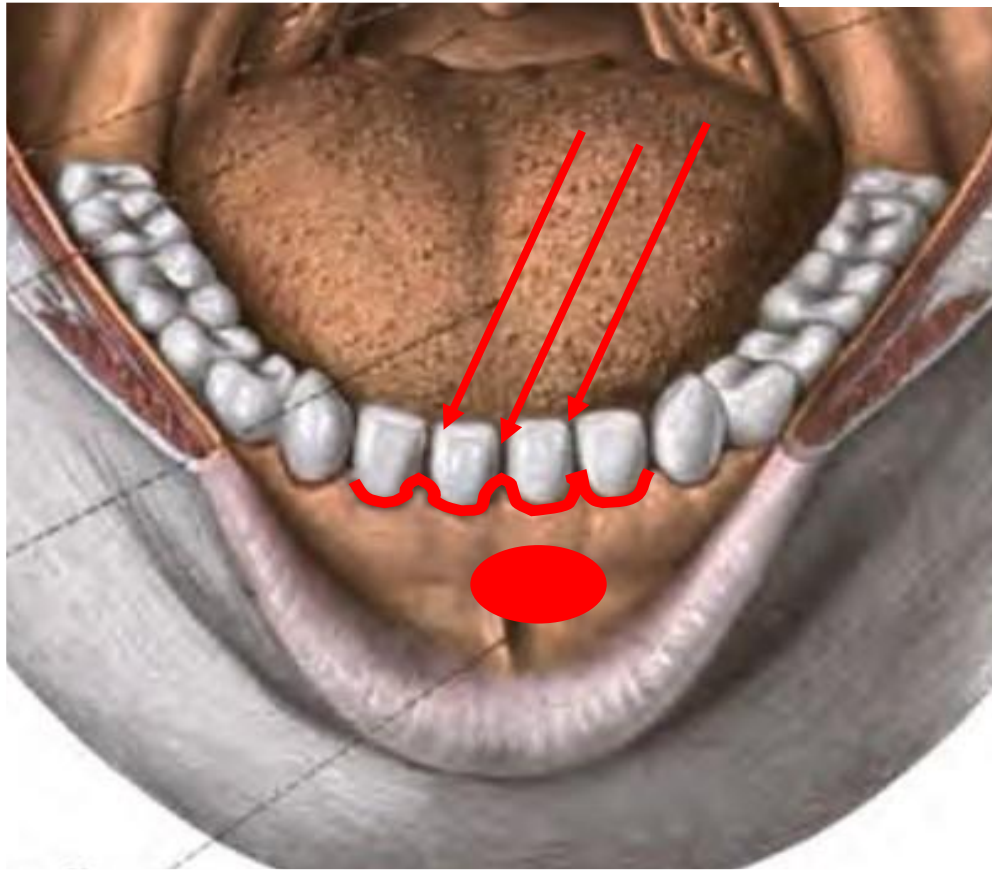
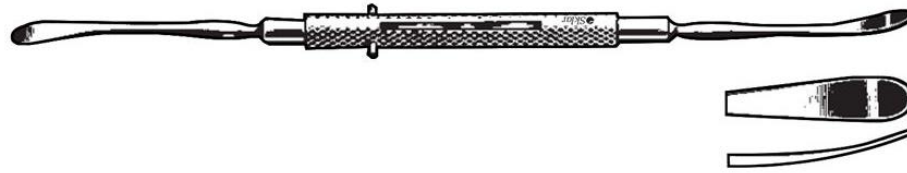


# Odontogenic Infections



- Abscess at the level of the root of the tooth
- Can enlarge to show up as facial swelling
- Important to assess submandibular swelling
- Airway compromise
- Sepsis a possibility

# Incision and Drainage



# Coding for Periapical / Periodontal Abscesses

ICD-10 K04.7 without fistula, K04.6 with fistula

Incision and drainage of abscess (D7510 or CPT 40800)

Removal of involved tooth/teeth (D7140, D7210 – D7240,  
or CPT 41899)

Placement on antibiotic therapy

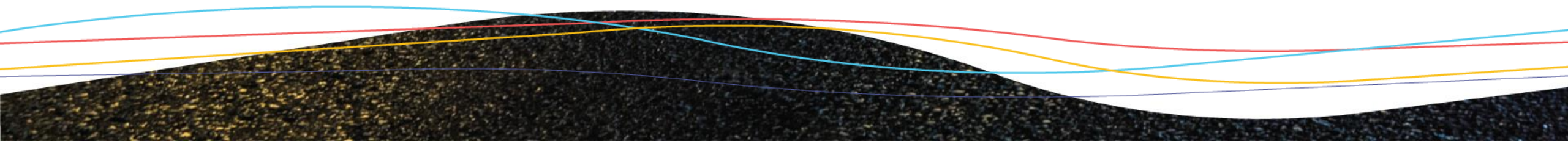
# Differentiating Acute Causes of Swelling

## Odontogenic Infection

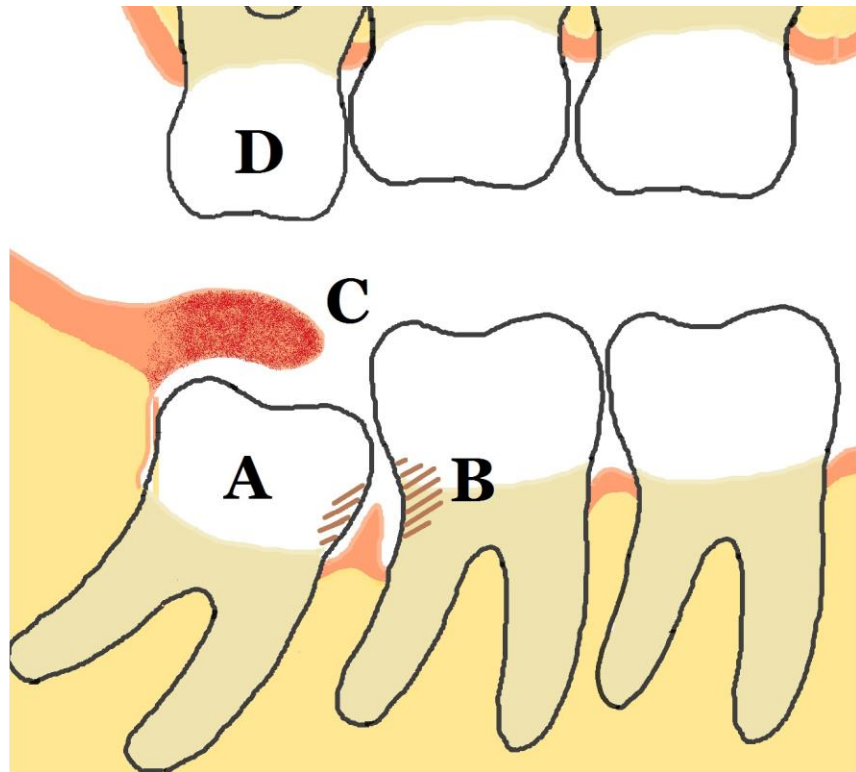
- Cellulitis/abscess
- Propensity to spread
- Can lead to airway compromise
- Typically requires incision & drainage

## Pericoronitis

- Foreign body-like inflammation
- Usually localized
- Typically does not lead to airway compromise or sepsis
- Requires simple extraction



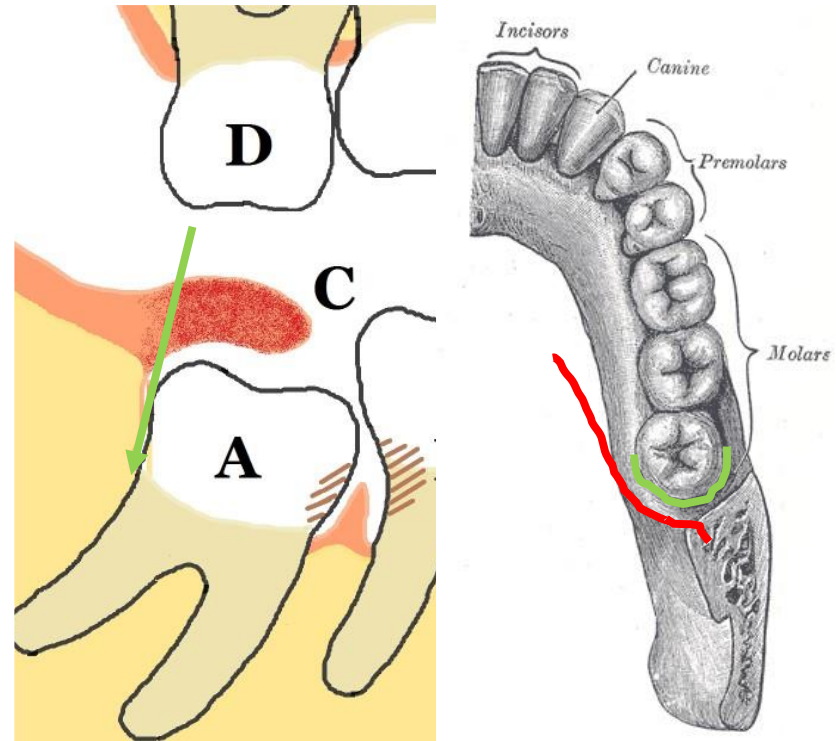
# Pericoronitis (ICD-10 K05.2)



- Overgrowth of mucosa over a partially erupted wisdom tooth.
- Accumulation of debris and bacteria under this flap.
- Often no appreciable dental caries.
- Most frequently a localized inflammatory response.
- Definitive treatment is removal of the offending tooth/crown.

## Stabilizing Treatments

- Direct irrigation with saline or chlorhexidine under the operculum/loose mucosal flap (D4921)
- Instrument debridement of bacteria and food impaction around the third molar crown and under the operculum (D4342)
- CPT code 41899 for unspecified dental treatment



# Gingivectomy/Operculectomy (D7971 or 41821)

Eliminate areas of impaction around a partially visible crown

Excess gingiva

Operculum

Loose papillae

Excise in a semi circular pattern

Avoid going posterior

Uncover just the crown, not bone

Consider using electrocautery

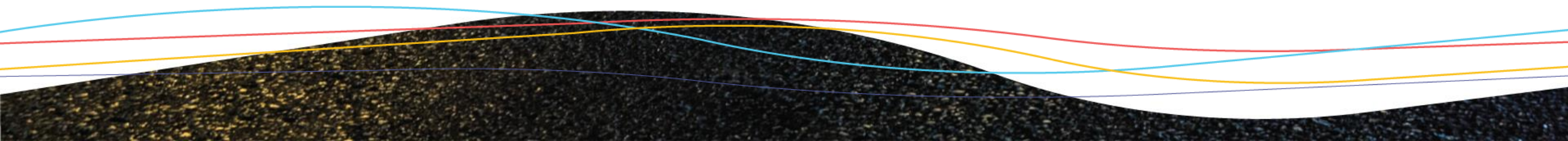
Expect bleeding from inflamed mucosae

Ice pack

Epinephrine-containing injections

Local Pressure

Chemical cautery (silver nitrate)

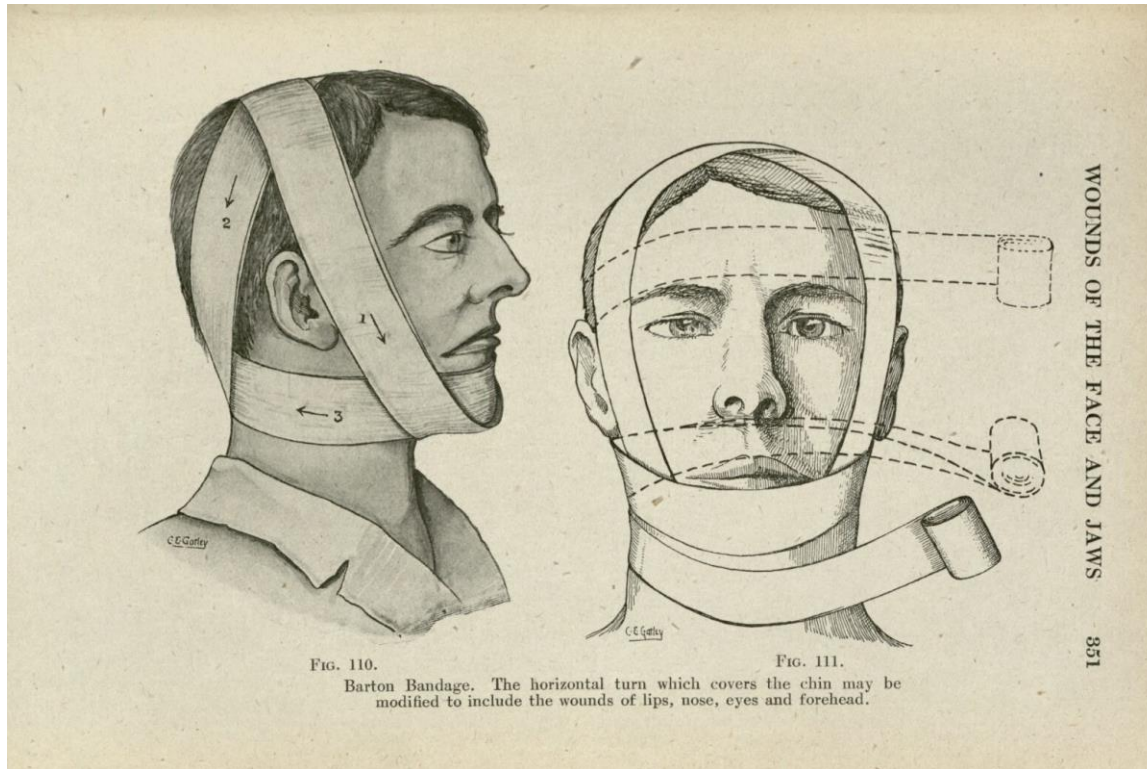


# Mandibular Fractures

- Mobility between two parts of the upper or lower jaw across fracture/mucosal laceration
- Reduce pain, bleeding, and surgical complexity for mandible fractures by applying a bridle wire.
- A 24-25g wire should be passed in the interdental space at least two stable teeth to the right and left of the fracture line.
- Pull firmly while twisting the two ends of the wire tightly
- “Pull” the looser segment towards the firmer one

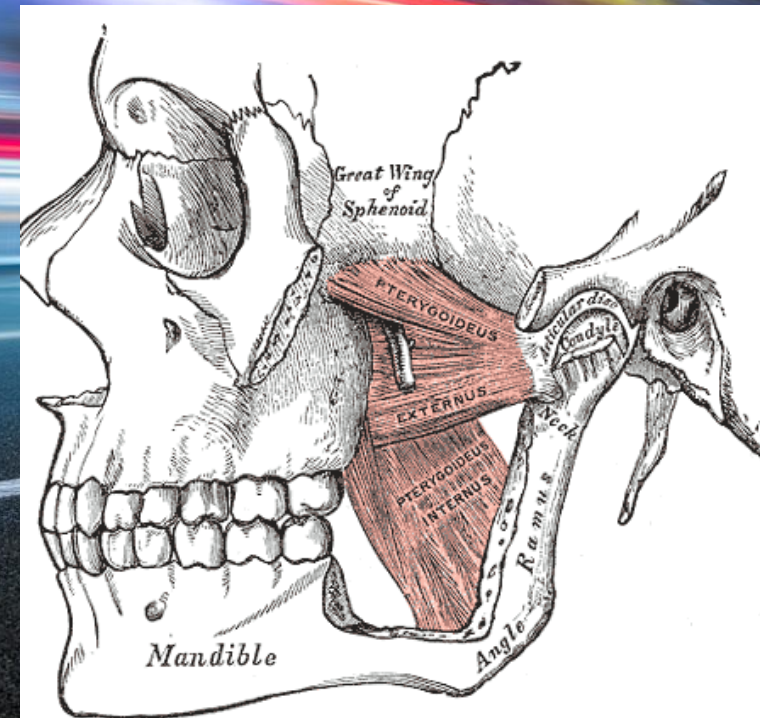
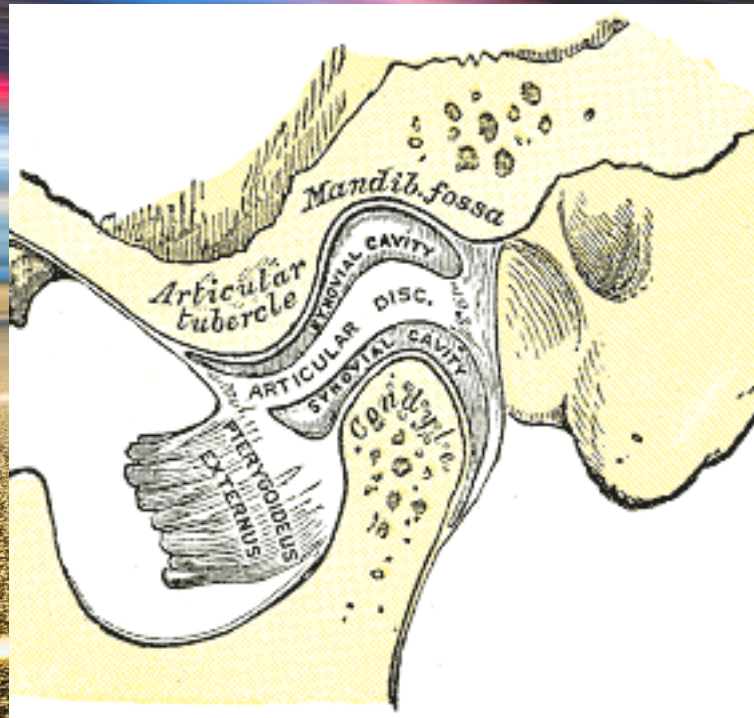


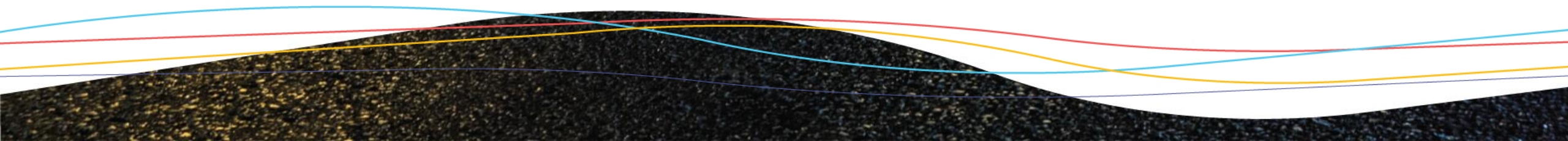
# Barton Bandage



- Ensure upper and lower teeth fit together
- 3-Dimensional bandaging
- Antero-posterior to prevent mandibular widening
- Supero-inferior bandaging to prevent segment sagging

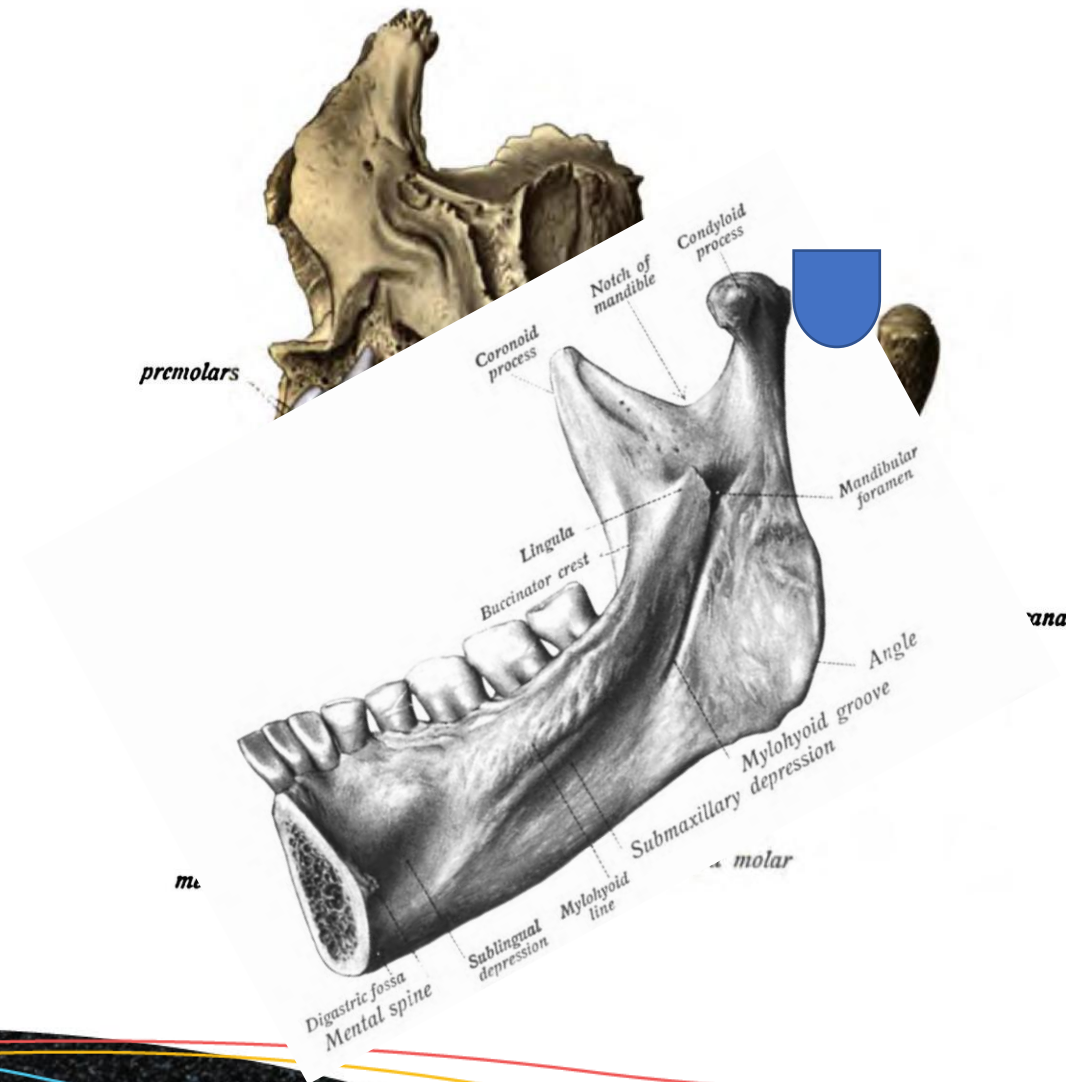
# “Locked Jaw”

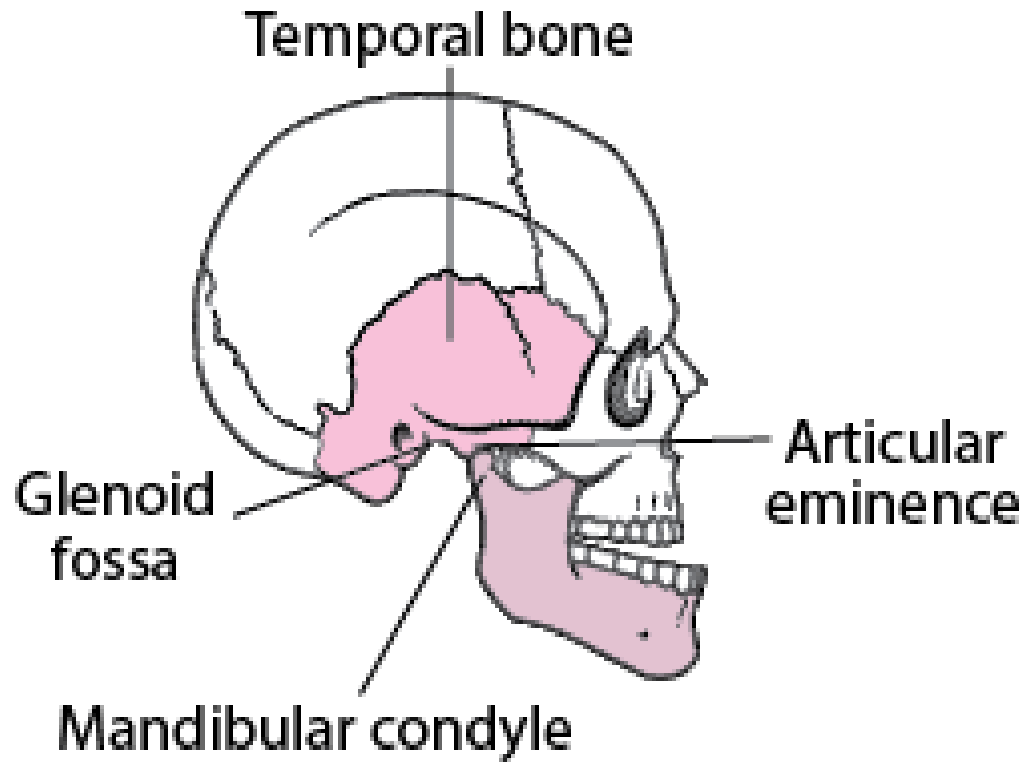




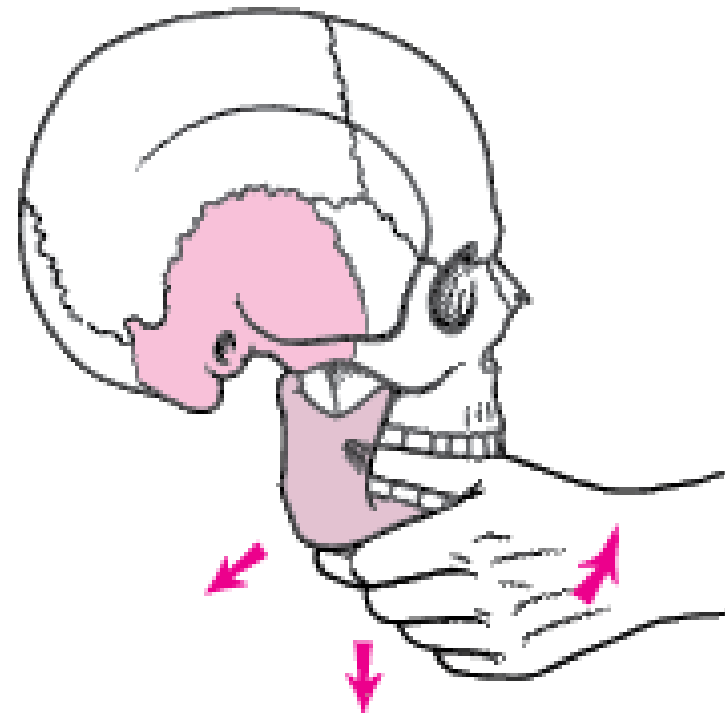
# TMJ Dislocations

- Jaw locked open
- Perform inferior alveolar nerve block
- Perform local anesthesia along the preauricular region
- Place thumb over lower molars
- Place remaining fingers under mandible
- Press down with thumbs
- Press posteriorly with remaining fingers

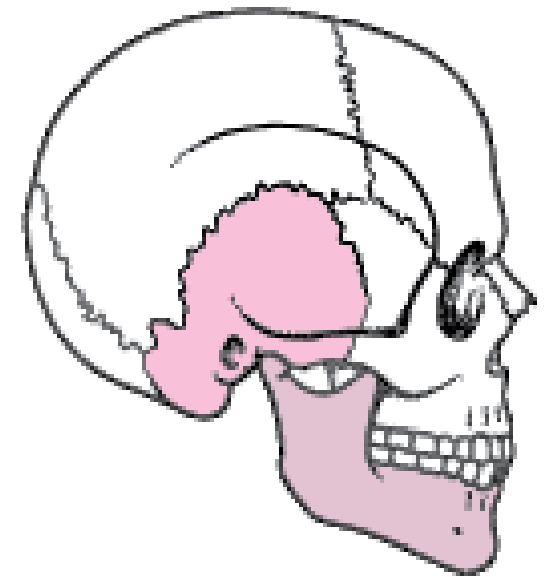




Dislocation

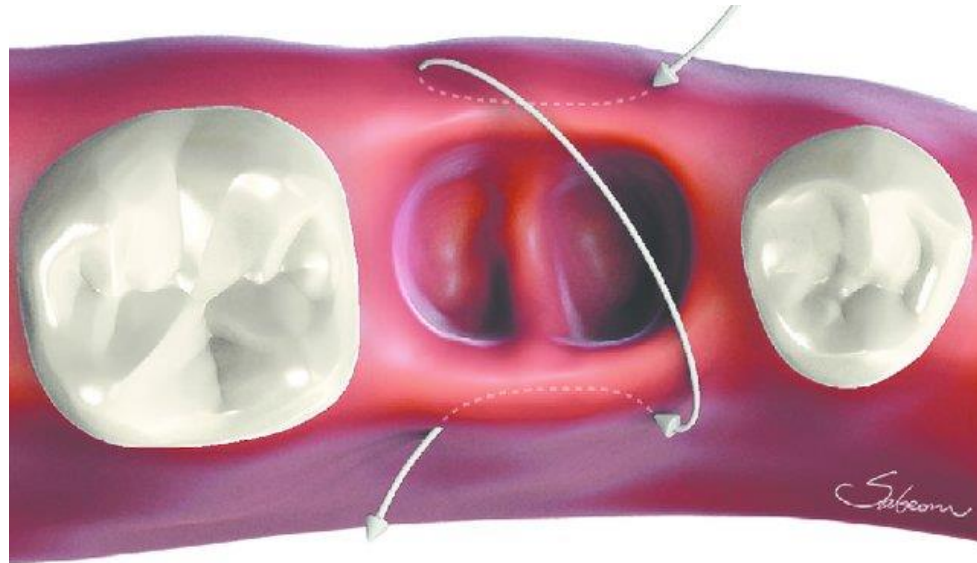


Reduction



Normal

# Dental Socket Bleeding



Criss-cross suture

- Post-operative bleeding after dental procedures relatively common
- Irrigate bleeding areas well and inject all around the bleed with epinephrine-containing local anesthetic
- Apply firm, well-directed pressure – do not remove pressure for 10 minutes
- Pack empty tooth sockets/bony defects with “stamp sized” **compressed gelatin (Gelfoam®)**, oxidized cellulose (Surgicel®), or **microfibrillar collagen (Avitene™)**
- Figure-8 suture over any packed dental sockets
- Bring together alveolar fractures by splinting and mandibular fractures with bridle wires
- Cauterize areas with heat, laser, or silver nitrate

# Mucosal Bleeding

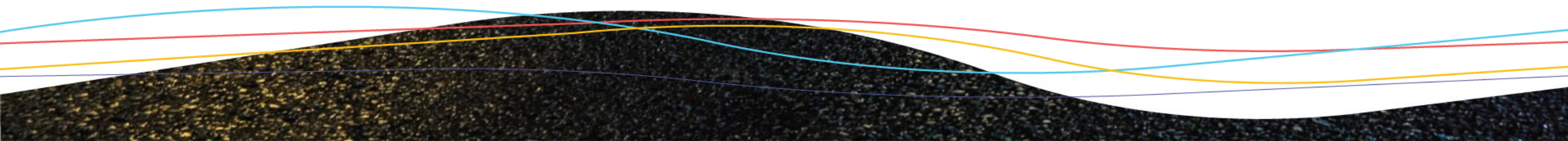
Gently swish for two minutes then expectorate

- 500mg TXA tablet in 10ml of fluid
- 650mg TXA tablet in 13ml of fluid
- Premade 4-5% TXA solution

## Thrombin Spray

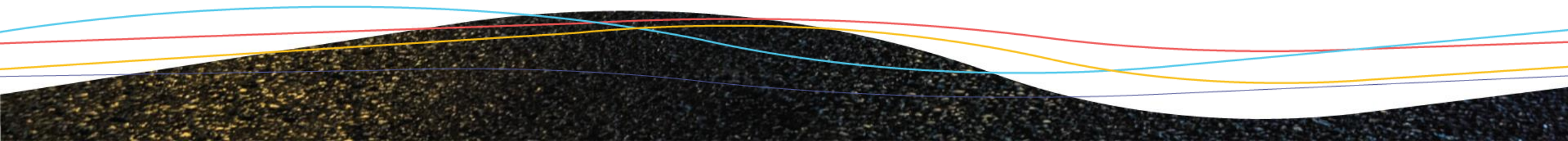
Inject with epinephrine

- 1mg adrenaline in 100ml saline
- 1% lidocaine with 1:100k epi



# Take Home Points

- Splint teeth semi-rigidly to help them re-attach
  - With likely alveolar bone fractures require 4 weeks splinting
  - Without alveolar bone fractures require 2 weeks
- Swelling below the inferior border of the mandible indicates a more serious infection
- Keep broken mandible segments together to reduce pain and bleeding
- Push mandibular molars down and posteriorly to reduce TMJ displacement
- Close over dental sockets in a figure-8 (“criss-cross”) pattern for bleeding
- Mix TXA tablets with 1 syringe full of saline (a little over 10ml) to create an anti-bleeding rinse
- **Know a good oral-maxillofacial surgeon to refer to in your area**



# Questions? Need Assistance?

## Provider Inquiries:

[www.maxfacedoc.net](http://www.maxfacedoc.net)  
[bit.ly/maxfacedoc](http://bit.ly/maxfacedoc)

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