

PREVENTION AND MANAGEMENT OF SURGICAL COMPLICATIONS

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PREVENTION OF COMPLICATION

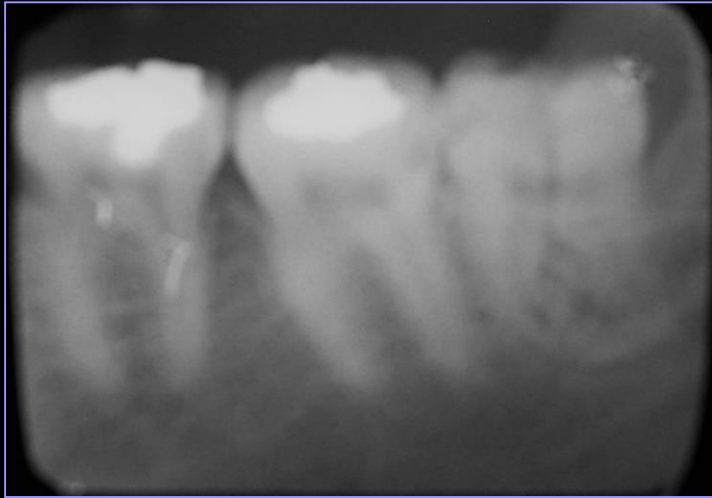
Best and Easiest Way to
Manage a Complication
is to Prevent it
from Happening !!!!



PREVENTION OF COMPLICATION

- Surgery within operator Ability !!
- Systematic Approach to Patient and Treatment.
 - Hx.
 - P.E.
 - Paraclinical investigation (imaging...)
 - Clinical investigation
 - Diagnosis
 - Treatment plan / Treatment
 - Follow up

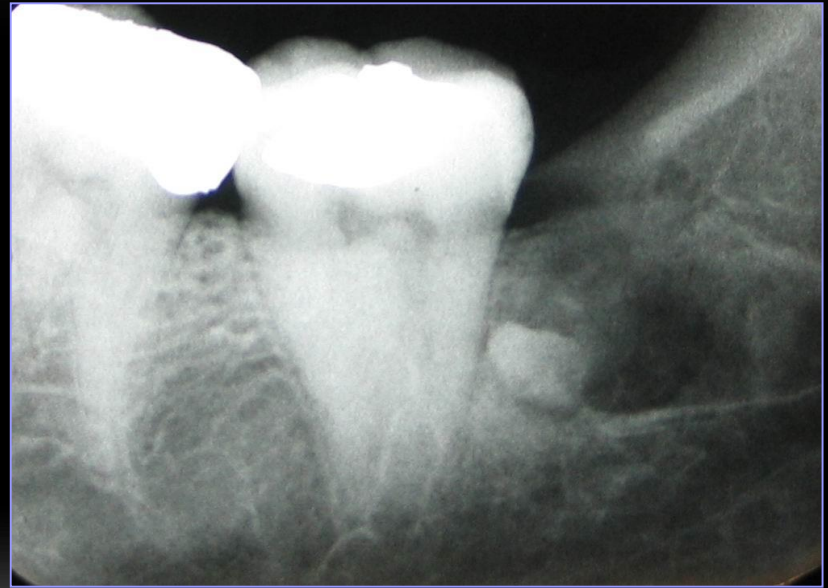
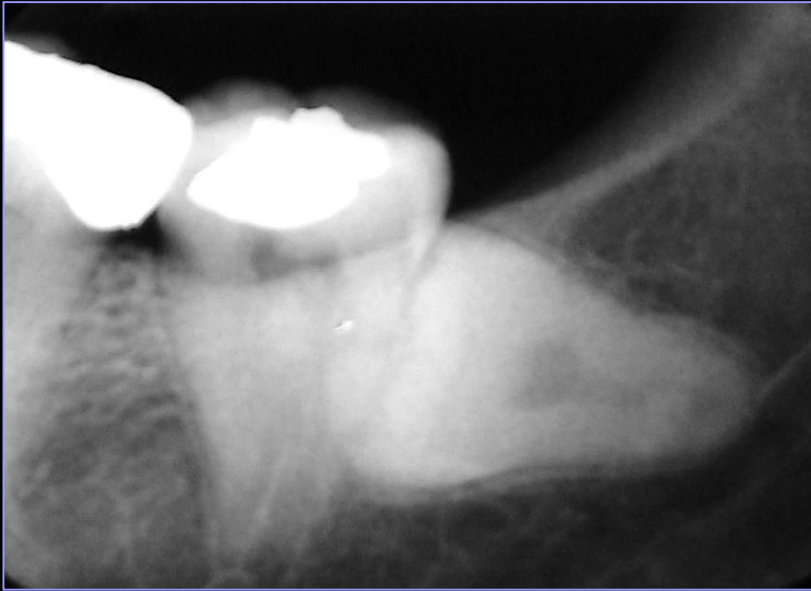
SURGERY WITHIN OPERATOR ABILITY !!



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SURGERY WITHIN OPERATOR ABILITY !!



PREVENTION OF COMPLICATION

- Regarding Basic Surgical Principles.
 - Adequate Light , Suction , Soft tissue reflection ...
 - Controlled Force : “Finesse” not “Force”.
- Asepsis
- Thorough Postoperative Instruction.

SOFT TISSUE INJURIES

- Tearing Mucosal Flap
 - Small flaps , Great retractions , ...
- Puncture Wound of Soft Tissue
 - Slippage of instruments !
 - Lack of opposite hand support ...
- Stretch or Abrasion Injury
 - Rotating shank of bur

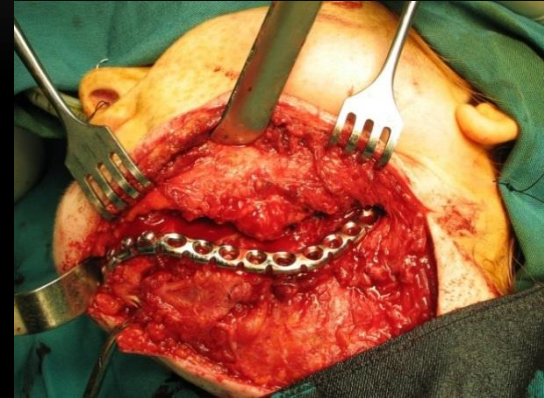


SOFT TISSUE INJURIES



SOFT TISSUE INJURIES

- **Prevention of Soft Tissue Injury**
 1. Pay strict attention to soft tissue injuries
 2. Develop adequate – sized Flaps
 3. Use minimal force for retraction of soft tissue



SOFT TISSUE INJURIES

- **Management**

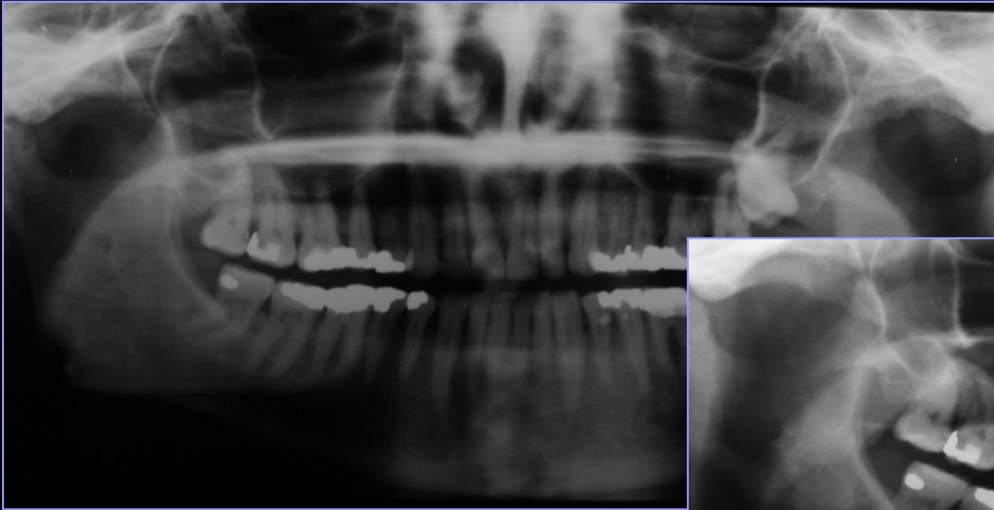
- Jagged border Excising the edge
- Puncture wound Prevent infection
 Direct pressure
 Not suture ?!!
- Stretch or abrasion Ointment
 Keep Moist !!

COMPLICATIONS WITH THE TOOTH BEING EXTRACTED

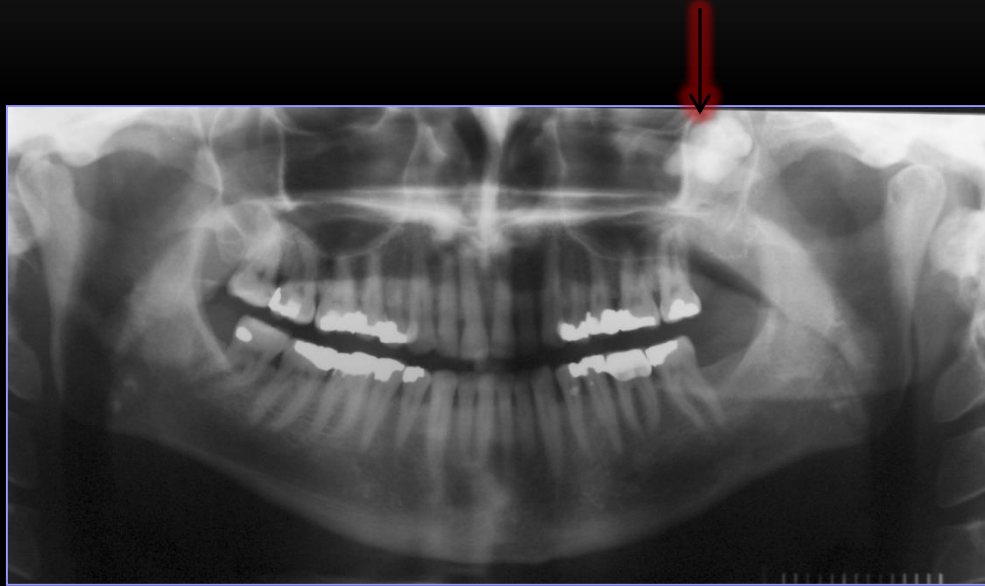
- Root fracture
 - Very common ,
- Root Displacement
 - Unfavorable anatomic spaces , sinus , canal
 - Size of the root , risk of infection , preoperative condition
 - Maxillary molar roots ,
- Root Lost into Oropharynx



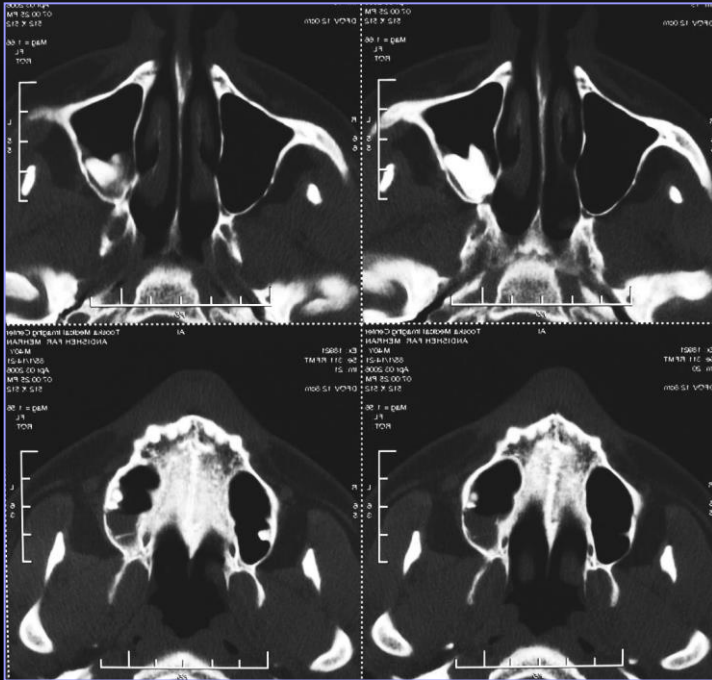
TOOTH DISPLACEMENT (IN MAXILLARY SINUS)



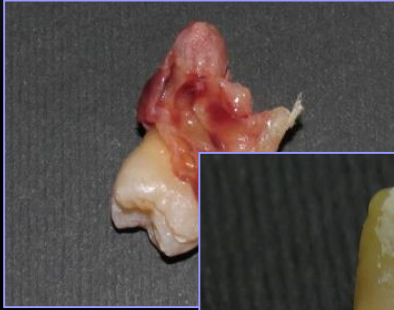
TOOTH DISPLACEMENT (IN MAXILLARY SINUS)

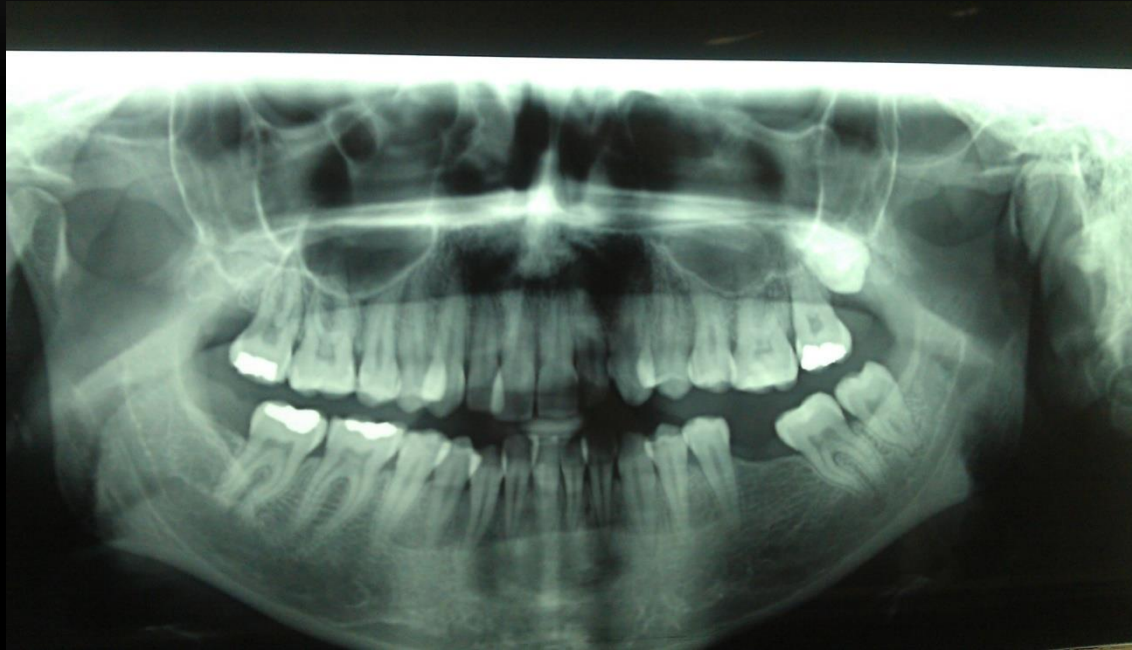


TOOTH DISPLACEMENT (IN MAXILLARY SINUS)



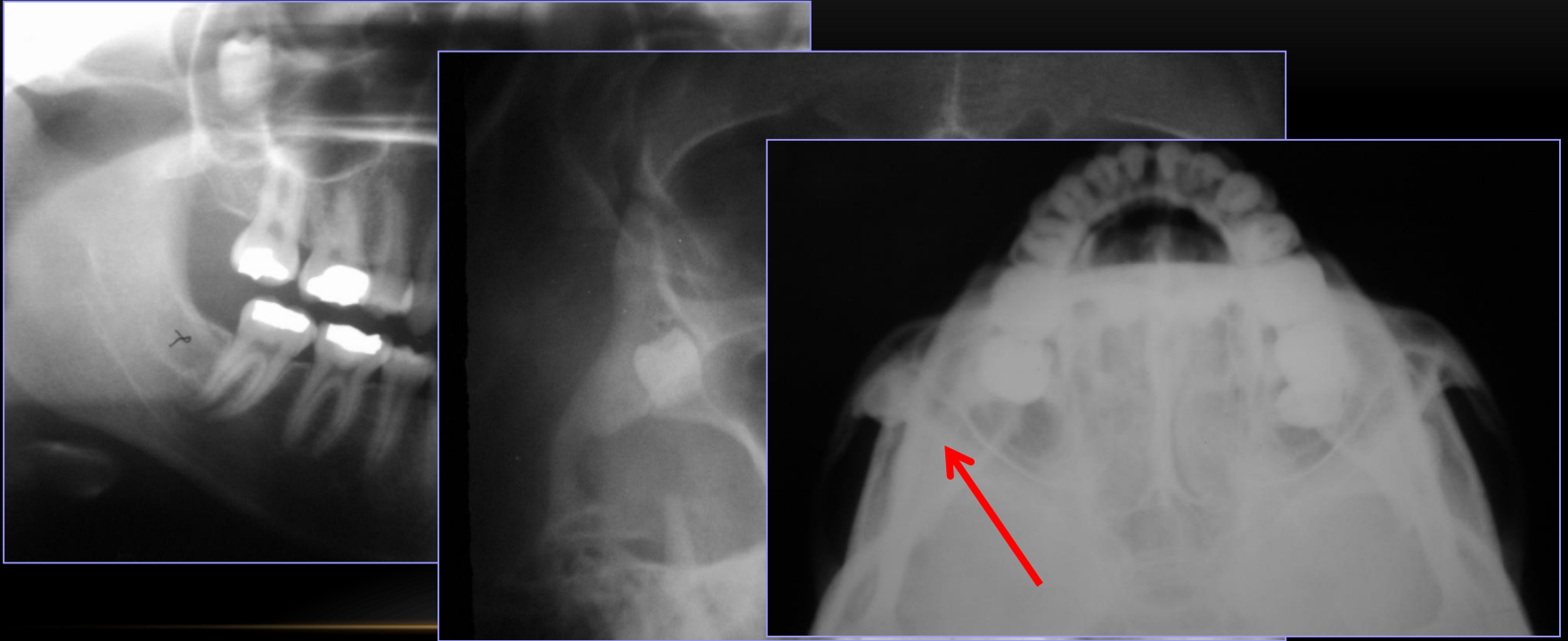
TOOTH DISPLACEMENT (IN MAXILLARY SINUS)







TOOTH DISPLACEMENT (INFRATEMPORAL SPACE)



COMPLICATIONS WITH THE TOOTH BEING EXTRACTED

- **Prevention of Root Fracture and Displacement**
 1. Always plan for Root Fracture
 2. Use Surgical (open) extraction if high probability of Fracture
 3. Do not use strong apical force on broken root

HIGH PROBABILITY OF FRACTURE (LONG CURVED ROOT)





HIGH PROBABILITY OF FRACTURE (LONG CURVED ROOT)



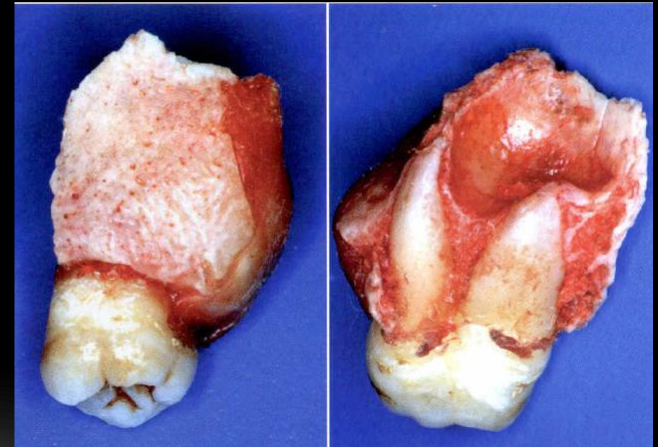
COMPLICATIONS WITH THE TOOTH BEING EXTRACTED

- Management
 - Root displacement
 - **Good evaluation ; Reasonable attempt ; Patient should be informed**
 - In Sinus
 - **Caldwell – Luc**
 - In infratemporal , ptrygomandibular , Submandibular , Sublingual spaces
 - **Conservative attempt ; referral to an Oral & Maxillofacial Surgeon**



INJURIES TO OSSEOUS STRUCTURES

- Fracture of Alveolar Process
 - Buccal cortical plate [canine, maxillary molar
(floor of sinus , tuberosity) , lower incisors]
- Fracture of Maxillary Tuberosity



INJURIES TO OSSEOUS STRUCTURES

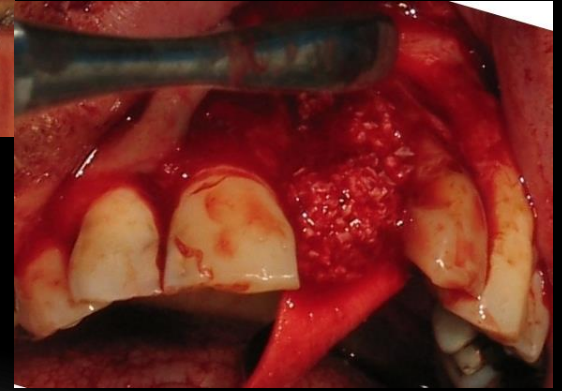
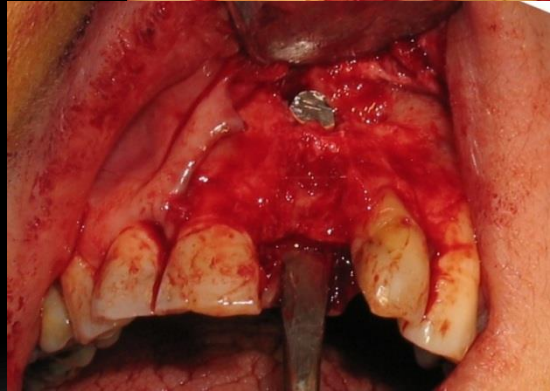
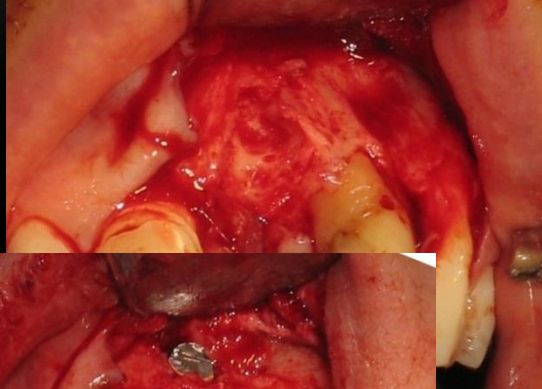
- **Prevention of Fracture of Alveolar Process**
 1. Conduct thorough preoperative clinical and radiographic examination .
 2. Do not use excessive force .
 3. Use surgical (open) extraction technique
to reduce force required .

INJURIES TO OSSEOUS STRUCTURES

- Management
 - Excessive Mobile Tuberosity (can not be dissected from the tooth)
 1. Splinting the complex 6 – 8 weeks then Surgery
 2. Removing the crown , living root and tuberosity splintedthen surgery
 - Detached from soft tissue
 -

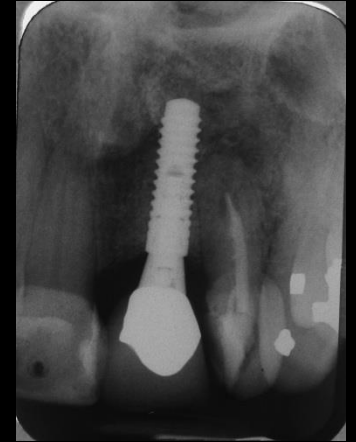
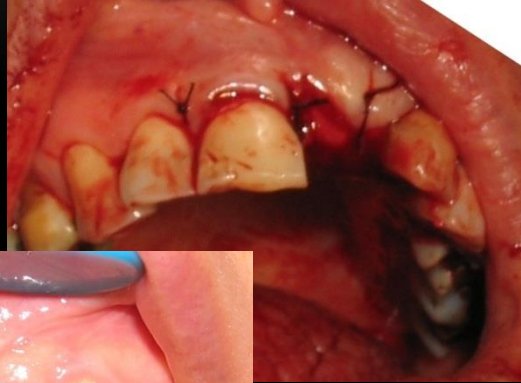
INJURIES TO OSSEOUS STRUCTURES

- Regarding future implant!!



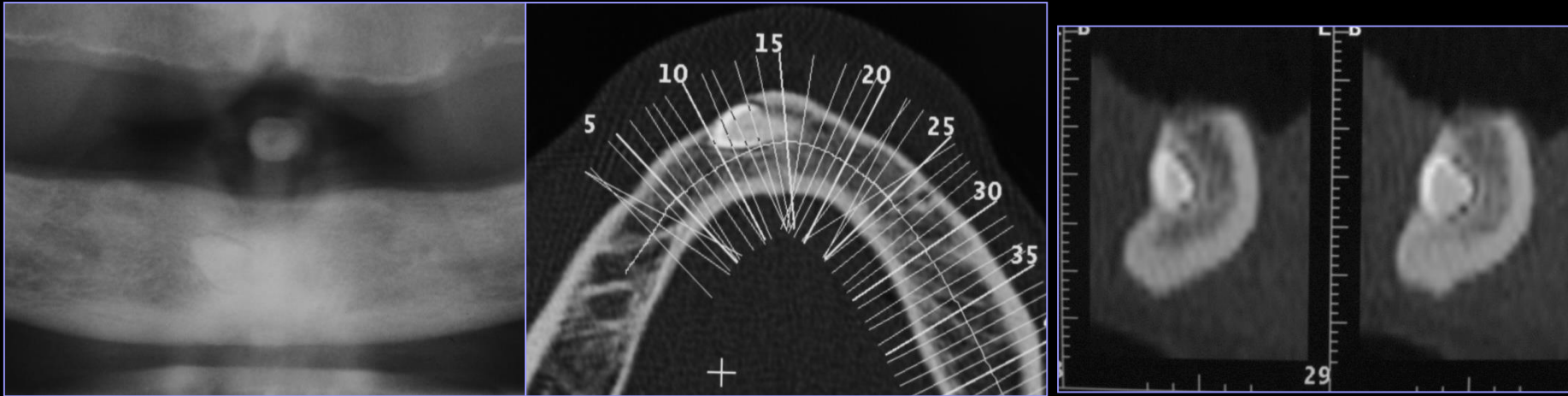
INJURIES TO OSSEOUS STRUCTURES

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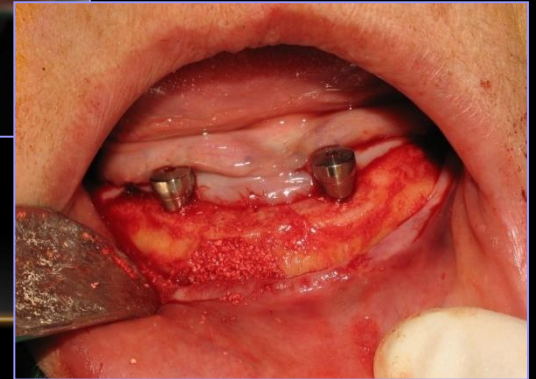
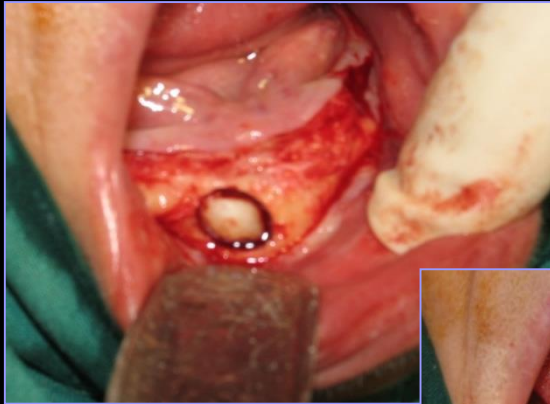
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INJURIES TO OSSEOUS STRUCTURES

- Regarding future implant!!



INJURIES TO ADJACENT STRUCTURES

- Injury to Regional Nerves
 - Mental , Buccal , Lingual , Nasopalatine
 - Inferior Alveolar nerve ,.....
- Injury to Temporomandibular Joint
 - Substantial force for lower molar extraction!



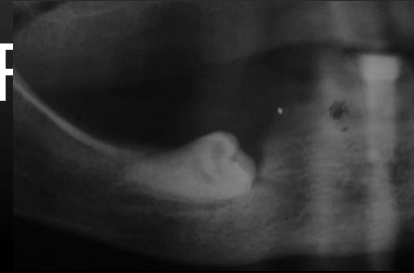
INJURY TO REGIONAL NERVES



INJURY TO REGIONAL NERVES



INJURIES TO ADJACENT STRUCTURE



- **Prevention of Nerve Injury**
 1. Be aware of Nerve anatomy in Surgical area.
 2. Avoid making incisions or affecting periosteum in nerve area .

INJURIES TO ADJACENT STRUCTURES

- Prevention of Injury to T.M.J
 1. Support Mandible during extraction
 2. Do not open mouth too Widely

OROANTRAL COMMUNICATIONS

- Diagnosis
 - Examine the tooth extracted (with apical bone!)
 - Nose blowing test
 - Estimate the size of opening

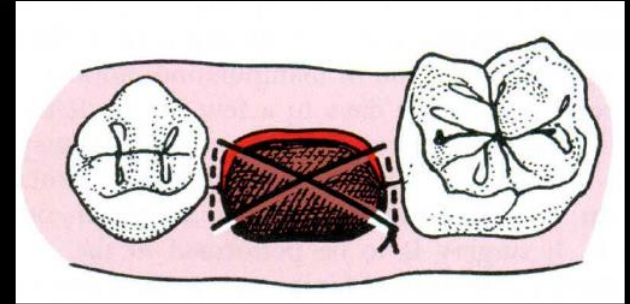
OROANTRAL COMMUNICATIONS

- **Management**

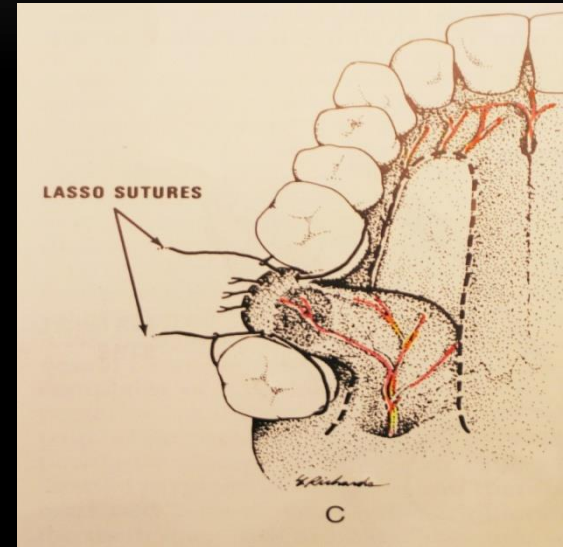
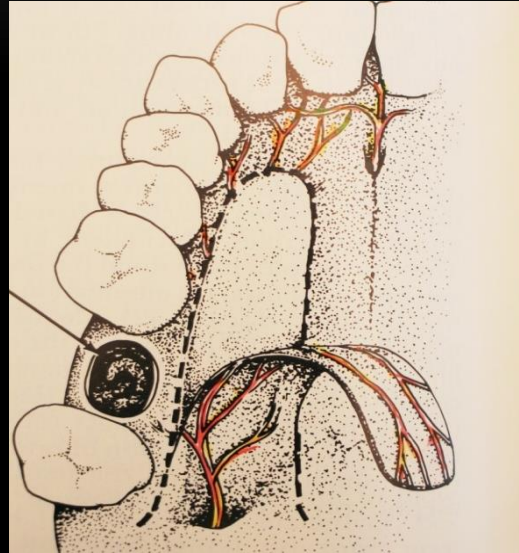
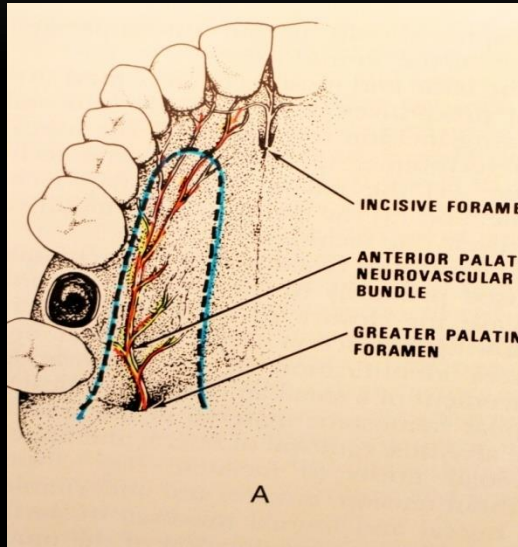
- Small (<2mm..):High quality clot!
- Moderate (2 to 6 mm) :Figure of 8 suture,

Post-operative Instruction.

- Large (>7 mm):Oroantral communication closure.
- Referral.....




OROANTRAL COMMUNICATIONS



OROANTRAL COMMUNICATIONS

- **Prevention of Oroantral communications**
 1. Conduct thorough preoperative radiographic examinations
 2. Use surgical extractions EARLY and section roots
 3. Avoid excessive apical pressure

BLEEDING

- **Management and Hints!!**
 - Intra-operative controls.
 - Damp gauze on the socket .
 - Check for 15 min.  If OK new Damp gauze for 30 min.

BLEEDING

- Management and Hints!! Bleeding persist ! (not from arterial origin)



Using hemostatic materials

(and figure of 8 suture)

- Absorbable gelatin sponge (Gelfoam®)
- Oxidized regenerated cellulose (Surgicel®)
- Topical thrombin
- Collagen , Microfibular collagen (Avitene®)
- Cross-linked Collagen (Collaplug® , Collatape®)

BLEEDING

- Secondary Bleeding Management and Hints!!

(Patient in the House!?)

- Very cold water rinse , gauze pack ,sit quietly for 30 min.!
- Repeat cold water rinse damp Tea bag ,.....
- No successful control RETURN to office.

BLEEDING

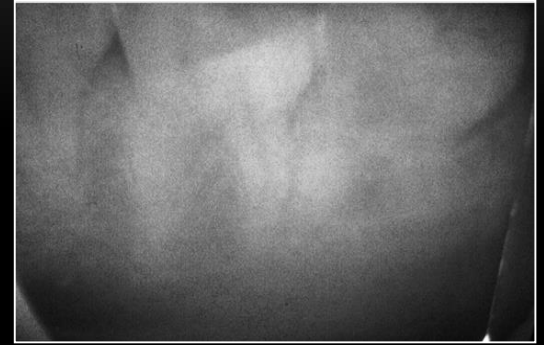
- Patient in the Office
- Good preparation (light ,suction ,.....)
- Determine precise source of bleeding.
 - Gauze pack for 5 min.
 - Administer Local Anesthesia
 - Rinse , curette the socket ,
 - Definite treatment

DELAYED HEALING AND INFECTION

- Dry Socket
 - Alveolar osteitis is delayed healing but not associated with infection.
 - Moderate to severe pain.
 - Pain develops on third or fourth day after...
 - Socket appears empty.
 - The exposed bone is extremely sensitive
 - Dull ,aching pain, throbs, radiate to ears !,
 - Bad odor, bad taste

DELAYED HEALING AND INFECTION

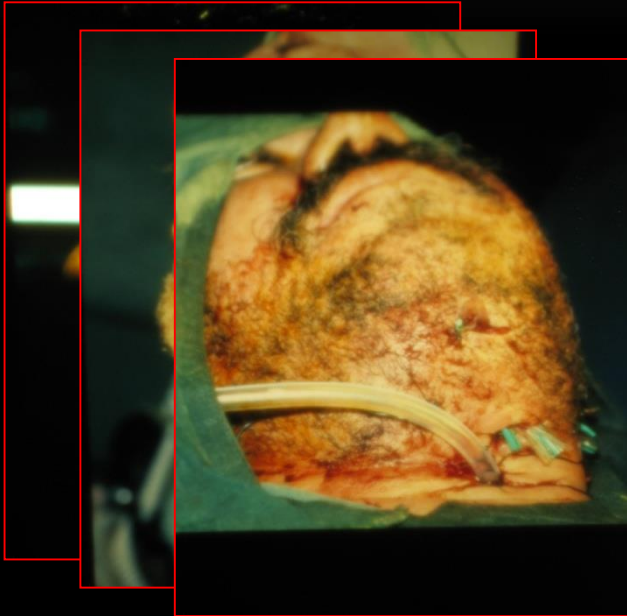
- Dry Socket
 - The cause :High level activity of fibrinolytic activity , lysis of the blood clot in the socket , Bone exposure.
 - 2% of routine extraction ; 20% of Mandibular impacted teeth.
 - Can be reduced with pre/post operative rinses ;minimize trauma and contamination.



DELAYED HEALING AND INFECTION

- Dry Socket
 - **Management :**
 - Aimed to relief pain during healing period.
 - Treatment
 1. Gentle irrigation of socket.
 2. Not curetted to the bone .
 3. Gentle Insertion of a medicated dressing.
 4. Changing the dressing 3 - 6 days as needed.

INFECTION!!



SUMMARY

Best and Easiest Way to

Manage a Complication is

to Prevent it from Happening!!!!!!



INSTAGRAM:

@DR.A.PAKRAVAN



جراح و متخصص فک و صورت و زیبایی بینی

ایمپلنتولوژیست ■ دارای بورس تخصصی
عضو هیئت علمی دانشگاه