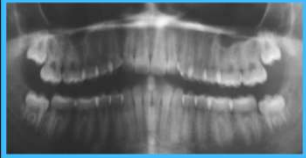


ACADEMY of GENERAL DENTISTRY AGD2021 THE PREMIER MEETING FOR GENERAL DENTISTRY AUSTIN, TEXAS JUNE 9 - 12 AGD2021.ORG

An Introduction to Third Molar Impactions
 Reducing, Recognizing and Responding to Post Op Complications



David L. Roberts, DDS, PA
 June 6, 2021
dave@robertsdds.com

Reducing, Recognizing and Responding to Post Op Complications

The Course Outline

Pre-Operative Work-Up

Dental Surgical Treatment Plan

Post-Op Instructions

Surgical Complications

Disclaimer:
ADA CERP Standard IX

“Participants should be cautioned about the potential risks of using limited knowledge when integrating new techniques in their practice”

Reducing, Recognizing and Responding to Post Op Complications

Pre-Operative Work-Up


Medical History Review

- 1) Medical History Form
- 2) Physician Consultation Form
- 3) Patient Selection

Reducing, Recognizing and Responding to Post Op Complications

Pre-Operative Work-Up

Medical History Review




Immunosuppression
Bleeding/Clotting
Bisphosphates
Mental Assessment
Others????

Reducing, Recognizing and Responding to Post Op Complications

Pre-Operative Work-Up

Physician Consultation Form



Reducing, Recognizing and Responding to Post Op Complications

Pre-Operative Work-Up

Patient Selection



Do We Go or Do We Stop

Reducing, Recognizing and Responding to Post Op Complications

Dental Surgical Treatment Plan

Section Outline

- Coordination with Overall Treatment
- Radiographic Examination
- Consent
- Risk Management
- Anesthesia (Anxiety & Pain Control)

Reducing, Recognizing and Responding to Post Op Complications

Dental Surgical Treatment Plan

Coordination with Overall Treatment


Surgery First

- Reduce Sources of Pain and Infection
- Allow for Time to Heal Prior to Restorative work

Air Driven Handpieces
Can Cause Air Emphysema

Diagnosis

100%=




Reducing, Recognizing and Responding to Post Op Complications

Dental Surgical Treatment Plan

Radiographic Examination

Less Than 1 Year Old



think3D
PA vs Pano vs CBCT

Reducing, Recognizing and Responding to Post Op Complications

Dental Surgical Treatment Plan

Consent Topics To Address

- Nerve Injury
- Retained Root Tips
- Infection
- Damage to Adjacent Teeth
- Jaw Fracture
- Perforation of Maxillary Sinus
- Pain
- Anesthesia Choices

Reducing, Recognizing and Responding to Post Op Complications

Dental Surgical Treatment Plan


Surgical Consent Form



Reducing, Recognizing and Responding to Post Op Complications

Dental Surgical Treatment Plan

Nerve Injury Disclosure



Reducing, Recognizing and Responding to Post Op Complications

Dental Surgical Treatment Plan

Risk Management

The Games We Play

Moral/Ethical

Scientific/Dental

Legal/Malpractice

Regulatory/Board

Political/Legislative

Reducing, Recognizing and Responding to Post Op Complications

Dental Surgical Treatment Plan

Risk Management

The Games We Play

Moral/Ethical

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Reducing, Recognizing and Responding to Post Op Complications

Dental Surgical Treatment Plan

Risk Management
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Reducing, Recognizing and Responding to Post Op Complications

Dental Surgical Treatment Plan

Risk Management
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Reducing, Recognizing and Responding to Post Op Complications

Dental Surgical Treatment Plan

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Dental Surgical Treatment Plan

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Reducing, Recognizing and Responding to Post Op Complications

Dental Surgical Treatment Plan

Anxiety Management Options

- Address Patient Fears
- Use Anti-Anxiety Techniques
 - a) Nitrous Oxide
 - b) Enteral (oral) Sedation
 - c) Parenteral (IV) Sedation
 - d) Dentist Anesthesiologist

Reducing, Recognizing and Responding to Post Op Complications

Post-Op Instructions

Section Outline

- Prescriptions
- Irrigation Protocols
- Written Post-Op Instructions
- Post-Op Video Instructions
- Normal Pain and Swelling

Reducing, Recognizing and Responding to Post Op Complications

Post-Op Instructions

Prescriptions

Antibiotic prescriptions are unnecessary after LTMR when preoperative infections are absent
(Oral Surg Oral Med Oral Pathol Oral Radiol 2012;114(suppl 6):S199-S208)

Reducing, Recognizing and Responding to Post Op Complications

Post-Op Instructions

Prescriptions

Reducing, Recognizing and Responding to Post Op Complications

Post-Op Instructions

Prescriptions

Medrol Dosepak	VS	Dexamethasone

Methylprednisolone and dexamethasone are the suggested drugs that effectively decrease pain after 3rd molar surgery. The intramuscular and intravenous routes are the most effective. Preoperative corticosteroids provide maximum benefit
J Dent Anesth Pain Med 2020 October; 20(5): 281-291

Reducing, Recognizing and Responding to Post Op Complications

Post-Op Instructions
Prescriptions

Medrol Dosepak VS Dexamethasone

Corticosteroid Conversion Chart

Glucocorticoid	Approximate Equivalent Dose (mg)	Relative Anti-Inflammatory (Glucocorticoid) Potency	Relative Mineralocorticoid (Salt Retaining) Potency	Biological Half-Life (Hours)
Short-Acting				
Cortisone	25	0.8	0.8	8 - 12
Hydrocortisone	20	1.0	1.0	8 - 12
Intermediate-Acting				
Methylprednisolone ★	4	5	0.5	18 - 36
Prednisolone	5	4	0.8	18 - 36
Prednisone	5	4	0.8	18 - 36
Long-Acting				
Dexamethasone ★	0.75	25	0.0	36 - 54

Mekie AW et al. Potency and Duration of Action of Glucocorticoids. AM J of Med. 1977; 63 (2):200 - 207. PMID: 888843

Dexamethasone is a well-established antiemetic

Reducing, Recognizing and Responding to Post Op Complications

Post-Op Instructions
Prescriptions



For pain:*

Take 2 Advil (or 1 Aleve), plus 1 Tylenol every 4 hours, around-the-clock for 3-4 days. (*Prescription pain medication is available but should only be used on a limited basis.)

Reducing, Recognizing and Responding to Post Op Complications

Post-Op Instructions
Prescriptions

Alternatives to Opioid Analgesics in Dental Practice

For optimal pain relief, the combination of 200-400 mg ibuprofen with 500-1,000 mg acetaminophen has been shown to provide pain relief that is superior to virtually all acetaminophen/opioid combinations

Arthur H. Jeske, DMD PhD

The results of the quantitative systematic reviews indicated that the ibuprofen-APAP combination may be a more effective analgesic, with fewer untoward effects, than are many of the currently available opioid containing formulations.

JADA 144(8) http://jada.ada.org August 2013

Reducing, Recognizing and Responding to Post Op Complications

Post-Op Instructions

Prescriptions



David L. Roberts, D.D.S., P.A.
General Dental Providing Oral Surgery Services
8001 AmigoRoad.com Honolulu HI 96846-1811
SIN No. 04631366 DE.F. HSA Reg. No. 48398


REFILL _____ TIMES

PRODUCT SELECTION PERMITTED DISPENSE AS WRITTEN

Reducing, Recognizing and Responding to Post Op Complications

Post-Op Instructions

Irrigation Protocols

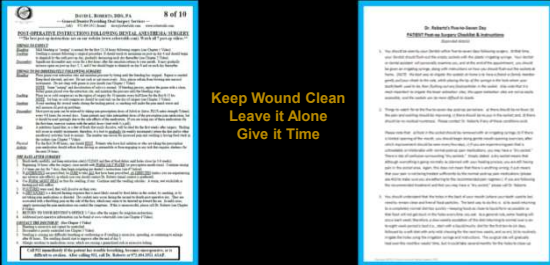


5-7 Days Routine
More Frequently if
a) Difficult Extraction
b) Anticipate Poor Pt Compliance

Reducing, Recognizing and Responding to Post Op Complications

Post-Op Instructions

Written Post-Op Instructions



Keep Wound Clean
Leave it Alone
Give it Time

Quality Post-Op Instructions Are as Important as a Quality Surgery

Reducing, Recognizing and Responding to Post Op Complications

Post-Op Instructions

Post-Op Video Instructions

Section 1



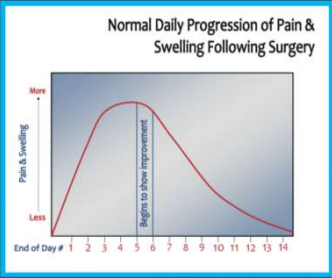
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Reducing, Recognizing and Responding to Post Op Complications

Post-Op Instructions

Normal Pain and Swelling

Normal Daily Progression of Pain & Swelling Following Surgery



Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Section Outline

- Infection vs Dry Socket
- Most Common Late Post-Op Problem
- Retain Roots / Coronectomy
- Facial Artery Injury
- Buccal Fat Pad Exposure
- Perforation of Maxillary Sinus
- Osteomyelitis /Jaw Fracture
- Nerve Injury

Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Infection vs Dry Socket

Understanding the Dry Socket MYTH
(what they are not)

- Pain from food impaction
- Pain from underdosing pain meds
- Pain from smoking
- Pain from unrealistic expectations
- Pain from infection
- Pain from blood clot falling out
- Diagnosis by Exclusion



Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Most Common Late Post-Op Problem

Management of non-Healing Extraction Sites
Caused by Food Impaction
Degranulation of the Wound



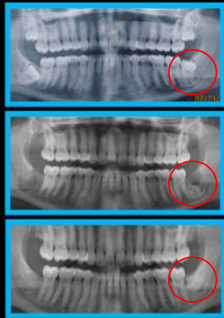
Management of non-Healing Extraction - Doctor

Infection Due to Food Impaction

Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Coronectomy



Pre-Op

Post-Op

2 Year PO

Reducing, Recognizing and Responding to Post Op Complications


Radiographic Examination Coronectomy

Patient Understanding Is Key

Discuss possible risks and complications and make sure the patient understands completely

Utilize an informed consent which is customized for this procedure

Will require multiple follow-ups
 1 - month
 3 - month
 6 - month
 12 - month
 and every 12 months until stable

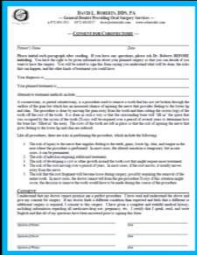


Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Retained Roots - Coronectomy


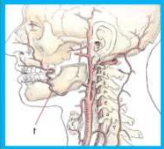

Coronectomy Consent



Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Facial Artery Injury

Prevents Slipping

Slipped Instrument Into Mucobuccal Fold

Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Buccal Fat Pad Exposure




Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Perforation of Maxillary Sinus

Tooth or Tooth Root in Sinus




14 y.o. Female

Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Perforation of Maxillary Sinus

Tooth or Tooth Root in Sinus



The Maxillary sinus cavity during Dental Surgery

Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Perforation of Maxillary Sinus

Oroantral Communication

2mm or less- No Treatment Plus Sinus Precautions

2-6mm - Place Gelfoam or Collagen Plug with Suture

7mm or larger - Surgical Closure with Buccal Flap

Refer to OMFS if Persists More Than 2 Weeks

Contemporary Oral and Maxillofacial Surgery 6th Edition : Hupp 182-183

Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Perforation of Maxillary Sinus

Oroantral Communication

Sinus Precautions

Decrease Pressure Changes


No Smoking

Antibiotics 5-7 days Amoxicillin or Clindamycin

Recommend a Oral Nasal Decongestant

Follow-up Every Week or 2 Until Closed

Refer to OMFS if Persists More Than 2 Weeks



Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Perforation of Maxillary Sinus


Oroantral Fistula

Oroantral fistula is characterized by formation of epithelized tract between maxillary sinus and oral cavity

- When chronic Oroantral fistula Defects are wider Than 5mm and persist For more than 3 weeks A secondary surgical Intervention is required

-buccal flap

-palatal flap



Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Osteomyelitis /Jaw Fracture

Osteomyelitis Prevention

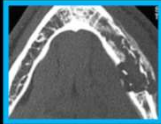


Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Osteomyelitis /Jaw Fracture

Risk Factors for Osteomyelitis

Older Patients		Crack Heard
Smoker		Immunocompromised
Food Debris		Diabetes
Deep Impaction		Long Term steroids

Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Osteomyelitis /Jaw Fracture

Enhanced Follow-Up Guidelines For at Risk Patients

- Review Irrigation Protocols with Patient
- 2-3 Post-Op Irrigation Appointments
- Review Diet Restrictions with Patient
- Never go 1 Week without a New Pano or CBCT
- Stay in touch with Pt via Email and Phone
- ABX : Penn/(Flagyl) - Cleocin - Augmentin

Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Osteomyelitis /Jaw Fracture

Osteomyelitis Case Report

Pre-op 18 Yo Female 4 3rds
Uneventful Extraction of 4 Third Molars




Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications


Osteomyelitis /Jaw Fracture

Osteomyelitis Case Report



18 Yo Female 4 3rds
Post -Op Day 28

Failed to Irrigate




Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Osteomyelitis /Jaw Fracture

Osteomyelitis Case Report

Pre-op 18 Yo Female 4 3rds
On Post-Op Day 28 ... She Heard a Crack

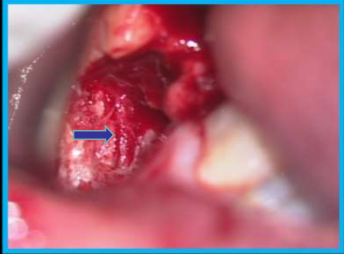


Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Nerve Injury

Inferior Alveolar Nerve Exposed

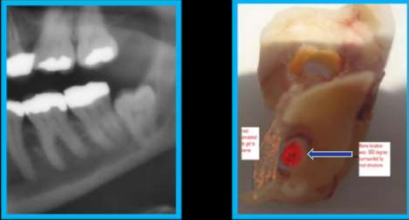


Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Nerve Injury

Inferior Alveolar Nerve Damage
49 yo Female with Pericoronitis

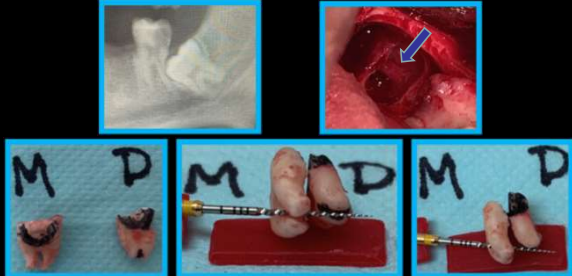


Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Nerve Injury

Inferior Alveolar Nerve Exposed



Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Nerve Injury

Incidence of Inferior Alveolar Nerve Damage

Group 1 With CT

.35%

Group 2 No CT

1.1%

Group 3 No CT

.27%

	Lingual nerve damage	IAN damage	IAN damage rate (%)
Group I (7735 cases)	3 cases	6 cases	0.35
Group II (2046 cases)	6 cases	23 cases	1.1
Group III (1119 cases)	3 cases	3 cases	0.27
Total (10917 cases)	12 cases	32 cases	0.65

CBCT is a useful tool for assessing the 3D relationship between the mandibular 3rd molar and IAN when the roots overlap with the canal

Maxillofacial Plastic and Reconstructive Surgery 201537:30

Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Nerve Injury

Inferior Alveolar Location Relative to Roots Of 3rds

Anatomical relationship	Contact	Non-contact	Total	Percentage (%)
Buccal	3	9	12	8.8
Lingual	8	8	16	11.7
Between roots	1	0	1	0.7
Inferior	25	83	108	78.8
Total	37	100	137	100

Keep Your Bur Above The Nerve

Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Nerve Injury

Age Distribution of Inferior Alveolar Nerve Damage

Age Group	Number of Cases
10-19Y	3
20-29Y	8
30-39Y	12
40-49Y	8
50-59Y	1
60-69Y	0
70-79Y	0

Younger Patients = Less Nerve Damage

Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Nerve Injury

Lingual Nerve Anatomy



Horizontal Distance from Lingual Plate 0-3 mm
62 % in Contact with Lingual Plate

Vertical Distance from Alveolar Crest 2-mm above to 7-mm below
17.5 % at or Above the Alveolar Crest

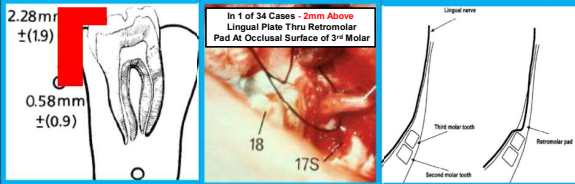
JOMS 42:565-567 1984

Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Nerve Injury

Lingual Nerve Anatomy



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JOMS 42:565-567 1984

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Surgical Complications

Nerve Injury

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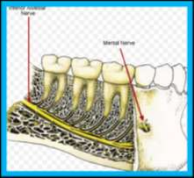
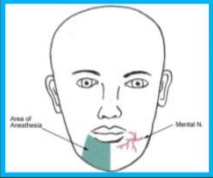


Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Nerve Injury

Mental Nerve Anatomy

The mental nerve divides into 3 branches One branch supplies the skin of the chin and the other 2 innervate the skin and mucous membrane of the lower lip

Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications

Nerve Injury Prognosis and Recovery

Inferior Alveolar Nerve Damage

Recovery of nerve damage	Lingual nerve damage	IAN damage
80 % ≤ x ≤ 100 %	6 cases (34.5 %)	15 cases (46.8 %)
60 % ≤ x < 80 %	2 cases (18.2 %)	3 cases (9.4 %)
40 % ≤ x < 60 %	0 case (0 %)	6 cases (18.8 %)
X < 40 %	1 case (9.1 %)	0 case (0 %)
No visit	2 cases (18.2 %)	8 cases (25 %)
Total	11 cases (100 %)	32 cases (100 %)

Permanent Damage is Very Rare

Reducing, Recognizing and Responding to Post Op Complications

Surgical Complications


Nerve Injury

When is the Right Time to Referral

- 1) Witnessed Injury - Immediately
- 2) Unwitnessed Injury - Before 3 months

- a) How Long Ago Was the Surgery
- b) Is It Complete or Partial Numbness
- c) Have You Had Any Improvement Over Time

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Questions ?



David Roberts DDS

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AGD2021
THE PREMIER MEETING FOR
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AUSTIN, TEXAS
JUNE 9 - 12
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