Third Molar Video Seminars
Outlines Third Molar Management

INTRODUCTION: Evolution of treatment options! (18min.)

REFERENCES
Ash MM: Third molars as periodontal problems. Dental Clinics NA, Philadelphia, WB Saunders, p51


Organization of the Seminar Series
Goal- Discuss 3rd molar management based on data from recent peer reviewed literature

Format- Recorded video seminars with participation of students and residents

Requires- Prior study of relevant recommended literature

Suggested- On site faculty available for discussion of the presented subject

Seminar Length- Each topic could be covered in less than 45 minutes

Faculty-
Raymond White DDS, PhD
Dalton L McMichael Distinguished Professor
UNC Oral and Maxillofacial Surgery

William Proffit DDS, PhD
Kenan Distinguished Professor
UNC Orthodontics
SEMINAR ONE:
The Biology! (40min.)

REFERENCES

Background
Evidenced Based Decisions
3rd molar Diagnostic options
Biological Models
  Caries
    3rd molars follow pattern
  Periodontal Inflammatory Disease
    3rd molars are different

Objectives
Discuss how data/evidence from current literature can be incorporated into advice for patients
Relate biological models of caries and periodontal inflammatory disease to clinical findings
Describe possible clinical outcomes associated with retained 3rd molars

Evaluation Seminar One
1) Why have 3rd molar periodontal data not been collected in US population studies?
   a-3rd molars have few periodontal problems
   b-only symptomatic disease affecting 3rd molars important
   c-expected that 3rd molars cannot be assessed accurately
   d-3rd molars missing more often than teeth more anterior

2) Based on the biological model why are lower 3rd molar teeth likely to be affected with chronic periodontal inflammatory disease?
   a-3rd molars erupt after jaw growth complete
   b-immune response to pathogens differs for 3rd molars as compared to teeth more anterior
   c-3rd molars more likely to be completely covered as compared to other molars
   d-gingival crevicular fluid unique to 3rd molars

3) Dental caries differs from periodontal inflammatory disease because
   a-tissue destruction occurs by different mechanisms
   b-only pathogenic bacteria are involved
   c-individual’s immune system responds differently in each of these chronic diseases
   d-all of the above
**SEMINAR TWO: Periodontal Inflammatory Disease Prevalence with Asymptomatic 3rd molars (34min.)**

**REFERENCES**


**3rd Molar Periodontal Inflammatory Disease**

Asymptomatic 3rd molars and prevalence of periodontal inflammatory disease
Maxilla vs. mandible, position relative to occlusal plane, angulation
Prevalence of periodontal pathogens
Prevalence of GCF inflammatory mediators
Periodontal inflammatory disease: Prevalence/Progression
3rd molar region
anterior to 3rd molar region

**Objectives**

Explain why prevalence periodontal inflammatory disease in young adults underestimated
Relate periodontal inflammatory disease progression to the biological model
Discuss how risk markers for periodontal disease explain disease progression with asymptomatic 3rd molars

**Evaluation Seminar Two**

1) Anerobic pathogens are commonly detected in the 3rd molar region in young adults because
a-pathogens are unique to 3rd molars
b-deeper probing depths exist around 3rd molars due to eruption after jaw growth complete
c-inflammatory mediators in the surrounding tissue facilitate pathogen colonization
d-access for routine oral home care is difficult
e-tobacco use is common in this age group

2) Periodontal inflammatory disease is more likely at mandibular 3rd molars
a-True
b-False

3) Periodontal inflammatory disease with deeper probing depths is more likely with 3rd molars below the occlusal plane
a-True
b-False
SEMINAR THREE:
Progression of 3rd Molar Periodontal Inflammatory Disease (32min.)

REFERENCES


Progression of Periodontal Inflammatory Disease in young adults with asymptomatic 3rd molars
Periodontal inflammatory disease: Prevalence/ Progression
  3rd molar region
  anterior to 3rd molar region
Risk markers for progression of periodontal pathology in the third molar and non-third molar regions in young adults.
Changes over time if no 3rd molar pathology at enrollment.
Change in 3rd molar position/angulation over time

Objectives
Relate biofilm biology to periodontal inflammatory disease progression
Discuss evidence for periodontal inflammatory disease progression in the 3rd molar region and more anterior regions of the mouth
Weigh the risk markers for periodontal disease progression; which are more or less important
Evaluation Seminar Three

1) Progression of periodontal inflammatory disease from lower 3rd molars to teeth more anterior depends on
   a) an immune response to periodontal pathogens at a local periodontal site
   b) periodontal pathogens colonizing at more anterior periodontal sites
   c) 3rd molar probing depths
   d) periodontal pathogen numbers at 3rd molar sites
   e) all of the above

2) Periodontal probing depths in the 3rd molar region are predictors of periodontal progression
   a) True
   b) False

3) After jaw growth is complete, 3rd molars are likely to remain static in position; no change in angulation or eruption.
   a) True
   b) False
SEMINAR FOUR:
Symptomatic Third Molar Periodontal Inflammatory Disease (27min.)

REFERENCES

Tang D, Proffit WR, Phillips C, Koroluk L, White RP: Quality of Life Measures affect the decision to have Third Molars removed in subjects with mild pericoronitis symptoms. In Preparation 2013


Symptomatic Periodontal Inflammatory Disease: 3rd molars and “pericoronitis”

Characteristics of Pericoronitis
Symptomatic vs. Asymptomatic 3rd molar periodontal inflammatory disease
Prevalence Periodontal inflammatory disease:
3rd molar region
   anterior to 3rd molar region
Quality of Life with Symptomatic Periodontal Inflammatory Disease

Objectives
Relate 3rd molar symptoms to possible disease levels
Discuss 3rd molar symptoms and the impact on Quality of Life; Pain, Lifestyle, Oral Function
Are existing Clinical Guidelines for removal of symptomatic 3rd molars adequate? Evidence??

Evaluation Seminar Four
1)Why should pericoronitis be termed symmetric periodontal inflammatory disease?
a-only young adults affected
b-disease affects majority of the adult population
c-disease is chronic with recurrent symptoms
d-Immune response to Gram positive bacteria in biofilm produce symptoms

2)Third molar symptom levels with periodontal inflammatory disease depend on
a- individual’s immune response to pathogens in biofilm
b-length of time pathogenic bacteria have been colonized in the non-sheddable biofilm
b-individual’s tolerance for pain
d-3rd molars reaching the occlusal plane

3)Pain levels are the only Quality of Life Impact of pericoronitis.
a-True
b-False
SEMINAR FIVE:
Third Molar Treatment Options and Outcomes (29min.)

REFERENCES


Dougan GD: Does the Trojan Horse have an Achilles heel? N Engl J Med 360:83, 2009

Third Molar Treatment Options and Outcomes
Asymptomatic
- mechanical debridement outcomes
- 3rd molar removal clinical outcomes
Symptomatic
- 3rd molar removal clinical outcomes
Future treatment options

Objectives
Relate effectiveness of mechanical debridement of biofilm to recurrent 3rd molar periodontal pathology
Discuss why 3rd molar removal is the current treatment option
Discuss future options based on the biology of the disease

Evaluation Seminar Five
1) Mechanical debridement in the molar region is effective in removing almost all biofilm
   a-for all periodontal probing depths
   b-for periodontal probing depths greater than 4mm
   c-for shallow periodontal probing depths
   d-for aerobic pathogens

2) 3rd molar removal can improve the periodontal status of the 3rd molar region and anatomic regions more anterior in the mouth
   a-True
   b-False

3) Future options for treatment of periodontal pathology are promising based on
   a-current antibiotic usage
   b-eradication of pathogens in the biofilm
   c-altering quorum sensing in the colonized biofilm
   d-disrupting GCF flow
SEMINAR SIX:
Third Molar Occlusal Caries (27min.)

REFERENCES


Third Molar Occlusal Caries
Biological model
Prevalence Estimate
Changes over time
Unique to 3rd molars or Associated with Caries 1st/2nd molars

Objectives
Relate 3rd molar caries prevalence to biological model of disease
Discuss 3rd molar caries
Relationship to caries prevalence 1st/2nd molars
Changes over time in disease incidence

Evaluation Seminar Six
1) Caries is unique to 3rd molars
   a- True
   b- False

2) 3rd molar Caries prevalence appears to increase as individuals age
   a- age a proxy for time for disease development
   b- if caries bacteria present condition may worsen over time
   c- later eruption of 3rd molars equates to increased detection after third decade of age if caries detected on 1st/2nd molars
   d- none of the above
   e- all of the above

3) In healthy young adults with good oral health practices, 3rd molar caries prevalence is low.
   a- True
   b- False
SEMINAR SEVEN:
Third Molar Occlusal Caries and Periodontal Pathology in Clinical and Population Studies (38min.)

REFERENCES


Third Molar Occlusal Caries and Periodontal Pathology in Clinical and Population Studies
Prevalence of Pathology “Free” 3rd molars
- Piedmont 65+ N=818
- ARIC N=6,793
- TMU/TMK
  - Enroll N=409, Follow-up 7 years N=179 (Excludes subjects who had 3rd molars removed)

Visible 3rd molar as a predictor of periodontal inflammatory disease
- NHANES III N=5800+
- ARIC N=6,793
- OCAP N=1020
- MOTOR N=1,798

Objectives
- Discuss differences in 3rd molar caries and periodontal pathology among clinical/population studies
- Relate NHANES US population data to 3rd molar data in other clinical/population studies
- Discuss how outcomes could improve by designing studies differently
  - Include barriers to study completion in discussion
Evaluation Seminar Seven

1) Third molars are often removed in young adults which makes clinical/population studies difficult to design
   a- True
   b- False

2) Presence of 3rd molars may indicate the need for careful assessment of periodontal pathology because
   a- Deeper periodontal probing depths often detected around visible 3rd molars
   b- Anaerobic periodontal pathogens associated with deeper periodontal probing depths
   c- Deeper periodontal probing depths reflect a greater surface area of the Biofilm Gingival Interface
   d- All of the above

3) Third molars should be assessed along with other teeth in clinical/population studies
   a- To offer an accurate assessment of disease levels among age cohorts
   b- To encourage retention of 3rd molars
   c- Because prevalence of 3rd molar pathology is low compared to other molar teeth
   d- Because radiographs may not be available to examiners
   e- None of the above
SEMINAR EIGHT:
Clinical and Quality of Life Outcomes after 3rd molar Removal (68min.)
Part One: Recovery “on average”. Part Two: Predicting delayed recovery
REFERENCES


Clinical and Quality of Life Outcomes after 3rd molar Removal
Trial Design
Clinical Outcomes
  Delayed Healing, Sensory Deficit
QOL Outcomes
Predictors Delayed Clinical/QOL Outcomes
Delayed Healing and QOL outcomes

Objectives
Explain how Clinical and Quality of Life Outcomes after 3rd molar surgery were assessed
Explain how to Predict Delayed Clinical and Quality of Life Outcomes after 3rd molar surgery
Discuss how Delay in Recovery for Quality of Life Outcomes results from Delayed Clinical Outcomes

Evaluation Seminar Eight
1)Quality of Life Outcomes have become equally as important as Clinical Outcomes because
a-patient expectations
b-ability to collect quantitative data
c- ability to analyze data
d-a focus on outcomes in health care
e-all of the above

2)Young adult females may recover differently than males after procedures
a-True
b-False

3)Delayed clinical recovery after 3rd molar surgery does not affect Quality of Life recovery.
a-True
b-False
SEMINAR NINE:
Interventions to Improve Outcomes after 3rd Molar Removal (43min.)

REFERENCES


Interventions to improve outcomes after 3rd molar removal
Role of pain medications in Recovery
Recovery with: Cold Therapy, Topical Minocycline, IV Antibiotics, Corticosteroids

Objectives
Discuss pro and con of at least two adjunctive measures to improve Quality of Life and Clinical Recovery
Propose a plan for a Multi-center Clinical Study for assessing adjunctive measures to improve Quality of Life and Clinical Recovery

Evaluation Seminar Nine
1) Cold therapy can be effective in moderating the worst pain levels after 3rd molar surgery
   a-True
   b-False

2) IV antibiotics presurgery can reduce the incidence of delayed clinical healing by
   a-diffusion into oral tissues
   b-incorporation into the blood clot following tooth removal
   c-altering the oral flora
   d-levels of antibiotic in saliva
   e-none of the above

3) Corticosteroid administration presurgery usually delays post surgery clinical healing
   a-True
   b-False
**SEMINAR TEN:**
Translation: From Clinical Research to Care of Patients (44min.)

**REFERENCES**

Eddy: Evidence based medicine: a unified approach. Health Aff (Millwood) 24:9, 2005


**Translation: From Clinical Research to Care of Patients**
Planning clinical studies
Developing a research protocol
Disseminating results effectively

**Objectives**
Explain how clinical problems are solved with data
Propose a plan to integrate new clinical research data in advice to patients
Explain why biological models are useful in conducting clinical research

**Evaluation Seminar Nine**
1) Investigators can be assured that changes will be adopted clinically if data are published in peer reviewed journals
   a-True
   b-False

2) Research data are most effectively adopted in clinical practice after
   a-publication in specialty journals
   b-presentation at annual meetings of clinicians
   c-presentations in local communities by respected opinion leaders
   d-promotion by NIH
   e-evaluation by consensus panels

3) The time frame from publication of research data to adoption in clinical practice is relatively short as measured in months
   a-True
   b-False