AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

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AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

OVERHEARD…

“If you are a dentist, and can drill a hole, then you can do implants.”
- Anonymous, DDS
UNDERSTANDING

THE TECHNICIAN UNDERSTANDS “THE HOW”

THE DOCTOR ALSO UNDERSTANDS…
“THE WHY … THE WHY NOT…
AND THE WHAT IF…”

IT’S NOT ENOUGH JUST TO RECOGNIZE A PROBLEM…

AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

“IMPLANTS ARE EASY!”
“EVERYONE SHOULD BE PLACING THEM!”
DON’T FORGET THIS…

IMPLANT SURGERY IS…

Surgery

PRIMUM NON NOCERE

"FIRST DO NO HARM"

Anyone who says they never have complications either doesn’t do much surgery, or is a damn liar!!

HOW DO WE AVOID THE MOST COMMON COMPLICATIONS IN IMPLANT DENTISTRY?

• Meticulous and complete pre-operative evaluation
• Understand the procedure’s requirements and limitations
• Have more training than you need
• Be 100% prepared to complete the procedure
AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

DR. REZNICK...

▸ “What did I do wrong?”

STRATEGY

• MENTALLY VISUALIZE THE PROCEDURE FROM START TO FINISH
• ANTICIPATE WHAT INSTRUMENTS WILL BE NEEDED, AND HAVE THEM READY/READILY AVAILABLE
• ANTICIPATE COMPLICATIONS
• HEADLIGHT, LOUPES
• “MEASURE TWICE, CUT ONCE”

WHAT ARE THE BASIC REQUIREMENTS TO SUCCESSFUL IMPLANT SURGERY?

• RELATIVELY HEALTHY PATIENT
  » Systemic disease
  » Smoker
  » Parafuntion
  » SSRI
• COMPLIANT PATIENT
• GOOD QUALITY BONE/ SOFT TISSUE

IN ADDITION TO GOOD QUALITY BONE, WE ALSO NEED:

SUFFICIENT BONE VOLUME
INSUFFICIENT BONE VOLUME

INADEQUATE BONE WIDTH

INSUFFICIENT BONE VOLUME

• INADEQUATE BONE HEIGHT
• INADEQUATE BONE WIDTH

HOW MUCH BONE DO WE NEED SURROUNDING AN IMPLANT FIXTURE?

• INADEQUATE BONE THICKNESS LEADS TO RESORPTION DUE TO COMPROMISED BLOOD SUPPLY
  • 2 mm buccal (facial)
  • 2 mm lingual (palatal)

TISSUE CONSIDERATIONS

• TISSUE BIOTYPE
• BIOLOGIC WIDTH
SOFT TISSUE BIOTYPES

• **THICK**
  - FLAT BONY ARCHITECTURE
  - DENSE, FIBROTIC SOFT TISSUE
  - LARGE AMOUNT OF ATTACHED GINGIVA
  - PRONE TO POCKET FORMATION

• **THIN**
  - SCALLOPED BONY ARCHITECTURE
  - DELICATE, FRIABLE SOFT TISSUE
  - THIN ATTACHED GINGIVA
  - PRONE TO GINGIVAL RECESSION

SOFT TISSUE BIOTYPES

• **THICK**
  - MINIMAL RIDGE ATROPHY
  - BONE/GINGIVAL CONTOURS MORE PREDICTABLE

• **THIN**
  - APICAL/LINGUAL RIDGE RESORPTION
  - BONE/GINGIVAL HEALING LESS PREDICTABLE

SOFT TISSUE BIOTYPES – SO WHAT?

• **THICK**
  - RIDGE MAY NOT NEED PRESERVATION GRAFT
  - IMMEDIATE IMPLANTS MORE PREDICTABLE

• **THIN**
  - ATRAUMATIC EXTRACTION/ RIDGE PRESERVATION ESSENTIAL
  - IMMEDIATE IMPLANTS LESS PREDICTABLE

BIOLOGIC WIDTH

• **MINIMUM DIMENSION OF SOUND TOOTH STRUCTURE BETWEEN THE RESTORATIVE MARGIN AND THE ALVEOLAR CREST.**
• **ACCOMMODATES THE CONNECTIVE TISSUE AND EPITHELIAL ATTACHMENT.**
**BIOLOGIC WIDTH**

Biologic Width of Natural Tooth

Tissue Level at Placement

Biologic Width Established

**KERATINIZED GINGIVA (KG)**

- **BIOLOGIC WIDTH** = CONNECTIVE TISSUE (1MM) + JUNCTIONAL EPITHELIUM (0.5 - 1.5MM) + SULCUS DEPTH

**INADEQUATE KERATINIZED GINGIVA (KG)**

Violation of Biologic Width

**KERATINIZED GINGIVA REQUIREMENTS**

- **SIGNIFICANCE FOR DENTAL IMPLANTS:**
  - There must be a sufficient width and thickness of keratinized tissue around an implant.
  - THIS VARIES FROM TOOTH TO TOOTH, BUT ABOUT 2MM IS A GOOD RULE OF THUMB.
“Since I have a CBCT-based surgical guide, does that mean that I can place the implant without a flap (tissue punch)?”

IF YOU HAVE ENOUGH...

• BONE
• ATTACHED GINGIVA

ADEQUATE KG FOR PUNCH?

• WHAT IF YOU ARE NOT SURE?
Knowing the patient's anatomy in 3D is critical to:

- Accurate implant planning
- Avoidance of complications
- Long term implant success
**IMPLANT SPACING/ POSITION**

- **IDEALLY-**
  - Parallel to adjacent teeth
  - Equally spaced between adjacent teeth
  - Aligned with occlusal tables of adjacent teeth

**DISTANCE BETWEEN IMPLANTS**
How far apically should the contact be placed to ensure complete fill of the interdental papilla?

- Tarnow DP, Magner AW, Fletcher P: The effect of distance from the contact point to the crest of bone on the presence or absence of the interdental papilla. J Periodontology 1992; 63: 995-996

- Contact points closer to bone crest are more predictable, but tooth form will look more square

<table>
<thead>
<tr>
<th>DISTANCE IN MM FROM CONTACT POINT TO CREST TO BONE (N)</th>
<th>Papilla Present</th>
<th>Papilla Not Present</th>
<th>% Present</th>
<th>% Not Present</th>
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<tr>
<td>3</td>
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<td>72</td>
<td>63</td>
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<td>10</td>
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<td>4</td>
<td>3</td>
<td>2</td>
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</tbody>
</table>

Salama et al. classification of predicted height of interdental papillae

- Not based on “platform-switched” implants

<table>
<thead>
<tr>
<th>Class</th>
<th>Restorative Environment</th>
<th>Position Limitations</th>
<th>Vertical soft Tissue Limitations</th>
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<tr>
<td>1</td>
<td>Tooth-Tooth</td>
<td>1.0 mm</td>
<td>4.0 mm</td>
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<tr>
<td>2</td>
<td>Tooth-Pontic</td>
<td>N/A</td>
<td>5.0 mm</td>
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<tr>
<td>3</td>
<td>Pontic-Pontic</td>
<td>N/A</td>
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<tr>
<td>4</td>
<td>Tooth-Implant</td>
<td>1.5 mm</td>
<td>5.5 mm</td>
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<td>5</td>
<td>Implant-Pontic</td>
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<tr>
<td>6</td>
<td>Implant-Implant</td>
<td>2.0 mm</td>
<td>2.5 mm</td>
</tr>
</tbody>
</table>

Implant spacing guidelines

IMPLANT PLACEMENT IN THE ESTHETIC ZONE

“3-2 RULE”


MAINTENANCE OF INTERDENTAL PAPILLAE

The maximum distance between the crestal bone and the contact point should be 4-5 mm in order to maintain the interdental papillae filling the embrasure space.

ANATOMICAL CONSIDERATIONS

- Mandibular Nerve
- Lingual Nerve
- Maxillary Sinuses
- Mylohyoid Fossa

AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

NERVE INJURY

- Nerve (IAN) injury
  - Drilling injury
    - Drill extends 0.1 - 1.0 mm beyond fixture depth
  - Fixture injury
    - Pressure on IAN
    - Impingement on IAN
TOO LATE

PREVENTING IAN INJURY - 2MM SAFETY MARGIN

SEDDON CLASSIFICATION

- **NEUROPRAXIA**
  - Blunt trauma or stretching
  - Minor deficit
  - No loss of continuity

SEDDON CLASSIFICATION

- **AXONOTMESIS**
  - Nerve damaged but not severed
  - Partial deficit
SEDDON CLASSIFICATION

NEUROTOMESIS
• Nerve is severed
• Axonal degeneration
• Neuroma formation
• May be painful - dysesthesia
• Poor prognosis for resolution

NERVE INJURY PROTOCOL

• DOCUMENT
• DOCUMENT
• DOCUMENT
• FOLLOW CLINICAL PROGRESS
• IF UNSURE, REFER

NERVE INJURY PROTOCOL

NEUROPRAXIA
• Remove implant
• Corticosteroids/ NSAIDs
• May resolve in days to weeks

AXONOTOMESIS
• Remove implant
• Corticosteroids/ NSAIDs
• Sensation returns in 2 - 6 months (0.1mm/d)

NERVE INJURY PROTOCOL

NEUROTOMESIS
• Complete anesthesia >3 months
• Consider surgery for continued anesthesia or dysesthesia

Dysesthesia: Neurontin (gabapentin)
900-1200 mg TID
WITHOUT CT GUIDANCE

• 64 YEAR OLD WOMAN
• MULTIPLE IMPLANTS PLACED
• RIGHT LOWER LIP NUMB, PAINFUL (BURNING)
• PERIODONTAL LIFT

CT SCAN

• IMPLANT FIXTURE WAS REMOVED
• GABAPENTIN 300MG TID
• PAIN IMPROVED OVER 6 MONTHS
• GABAPENTIN TAPERED OFF
• NERVE SENSATION IMPROVED 80%

ANATOMICAL CONSIDERATIONS

• MANDIBULAR NERVE
  • Stay at least 2mm above canal
  • Watch anterior loop of mental nerve

BEWARE THE ANTERIOR LOOP
ANTERIOR LOOP OF MANDIBULAR NERVE

GREENSTEIN G AND TARNOW D.

Table 2: Appearance of Mental Foramina on Panoramic Radiographs: Percentage of Occurrences

<table>
<thead>
<tr>
<th>Category</th>
<th>Radiograph Appearance</th>
<th>Average Percentage</th>
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<tbody>
<tr>
<td>Aperture</td>
<td>Superior</td>
<td>26.7%</td>
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<tr>
<td>Aperture</td>
<td>Inclined</td>
<td>18.4%</td>
</tr>
<tr>
<td>Aperture</td>
<td>Inferior</td>
<td>43.4%</td>
</tr>
<tr>
<td>Aperture</td>
<td>Absent</td>
<td>12.5%</td>
</tr>
</tbody>
</table>

RESULTS/ CONCLUSIONS

MENTAL FORAMEN LOCATION

• Mental foramen location can vary from canine to 1st molar
• CT scan more accurate than conventional radiographs
• Incidence ranges between 0 - 88%
• 2mm “safety zone” should be kept from mandibular nerve

LINGUAL NERVE

• VERY VARIABLE LOCATION
• MAY BE ABOVE OR BELOW THE MYLOHYOID MUSCLE
• AVOID LINGUAL RETRACTION AND INSTRUMENTATION

MYLOHYOID FOSSA
SOFT TISSUE BLEEDING

AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS
BLEEDING FROM BONE

• PLACE IMPLANT
• IF DURING GRAFTING

➤ APPLY PRESSURE

AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

LOCAL MEASURES TO CONTROL BLEEDING

➤ Gauze pressure
➤ Pack site- gelatin sponge (Gelfoam), absorbable oxy cellulose (Surgicel)
➤ Topical thrombin
➤ Bone wax
➤ Local anesthetic

“All bleeding eventually stops!”

ANATOMICAL CONSIDERATIONS

MAXILLARY SINUSES

• LIGHTEN SKULL
• WARM, MOISTEN AIR
• PNEUMATIZE AFTER EXTRACTIONS
ANATOMICAL CONSIDERATIONS

• MAXILLARY SINUSES:
  • “NORMAL” VS. “PATHOLOGICAL” PATHOLOGY
  • PENETRATING THE SINUS FLOOR

SINUS FLOOR VIOLATION

SINUS FLOOR VIOLATION
THIS IS A PROBLEM...

MAXILLARY BONE REQUIREMENT
- Need at least 5mm of solid bone at floor of sinus to stabilize fixture
- Sinus lift first

NASOPALATINE DUCT
DAMAGE TO ADJACENT TEETH

- IF MINOR - WATCH
- ENDODONTIC TREATMENT
- IMPLANT REMOVAL

SINUSITIS

- AUGMENTIN 875MG BID X 14 DAYS
- OTC ANTIHISTAMINES - CLARITIN, ALLEGRA
- OTC NASAL STEROIDS - FLONASE, NASACORT
**SINUSITIS**

- **IF ALLERGIC TO AUGMENTIN (PCN)**
  - Cipro (ciprofloxacin) 500 mg BID
  - Cleocin (clindamycin) 300 mg QID
  - Biaxin (clarithromycin) 500 mg BID

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**SINUSITIS**

- **IF SINUSITIS FAILS TO RESOLVE:**
  - REMOVE IMPLANT
  - DEBRIDE GRAFT (CALWELL-LUC)
- **SURGICAL EVALUATION (ENT OR OMFS) IF PERSISTENT**

---

**TOOTH MOVEMENT**

- **USE A SPACE MAINTAINER**
  - ESSIX BRIDGE
  - BONDED BRIDGE
  - STAYPLATE/FLIPPER
- **ORTHODONTIC EVALUATION IF SIGNIFICANT**
- **MAY RESULT IN REMOVAL OF TOOTH**
AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

BROKEN ABUTMENT SCREW

- SALVIN IMPLANT RESCUE KIT

ASTRA TECH SCREW REMOVAL INSTRUMENTS
ASTRA TECH SCREW REMOVAL INSTRUMENTS

OTHER OPTIONS

• ULTRASONIC
  - vibrate and loosen screw
  - back out with tip
• COTTON APPLICATOR
  - break stick and engage screw
  - rotate counter-clockwise

AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

CLINICAL FINDINGS WITH HEALTHY DENTAL IMPLANTS

- Firm pink peri-implant mucosa
- Shallow probing depths (≤ 3 mm)
- Absence of bleeding on probing
- Absence of purulence or suppuration
- Non-responsive to percussion
- High-pitched resonance with percussion
- Maintenance of bone level to 1st thread of fixture

PERI-IMPLANT MUCOSITIS AND PERI-IMPLANTITIS

- Dental implants are not susceptible to caries
- But they are susceptible to soft tissue inflammatory problems. Just like natural dentition
- Can result in loss of implants

PERI-IMPLANT MUCOSITIS

- 32 - 80% incidence
- Inflammation during healing or in function
- BoP, ± suppuration
- Probing depths up to 4mm
- Biofilm harboring bacteria (Gram - anaerobes)
- Reversible inflammatory changes
- No bone loss


AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

RISK FACTORS FOR PERI-IMPLANT MUCOSITIS AND PERI-IMPLANTITIS

- Previous periodontal disease
- Poor plaque control/ inability to clean
- Smoking
- Genetic factors
- Diabetes
- Occlusal overload
- Residual cement


MANAGEMENT - FIRST 8 WEEKS

- Avoid manipulating implant fixture for the first 6 weeks of integration
  - Light debridement
  - Chlorhexidine irrigation/ rinse
- Infected- antibiotics
  - Amoxicillin
  - Cephalosporin
  - Clindamycin
AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

MANAGEMENT AFTER 8 WEEKS
• Elimination of biofilm from the implant surface is primary goal
  ➡ Irrigation device
  ➡ Chlorhexidine irrigation/rinse
• Infected- antibiotics
  ➡ Amoxicillin
  ➡ Cephalosporin
  ➡ Clindamycin

AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

SODIUM HYPOCHLORITE IRRIGATION
¬ Oral rinse with 0.05% sodium hypochlorite resulted in significant reductions in supragingival biofilm accumulation and gingival inflammation
¬ Twice-weekly oral rinsing with 0.25% sodium hypochlorite produced a significant reduction in bleeding on probing, even in deep unscaled pockets
¬ Sodium hypochlorite, hydrogen peroxide, chlorhexidine and Listerine showed a significant bactericidal effect against adhering bacteria

PERI-IMPLANTITIS
• 10 - 40% INCIDENCE
• INFLAMMATORY PROCESS
• BIOFILM HARBORING PATHOLOGIC BACTERIA
  ¬ TITANIUM AND ZIRCONIUM ABUTMENTS SIMILARLY COLONIZED
  ¬ IMPLANT IN FUNCTION
  ¬ BONE LOSS


PERI-IMPLANTITIS
• Most commonly associated with implant-supported overdentures
• Incidence 11-32% (fixed 7-20%)
  • ARDEKIAN L, DODSON TB. COMPLICATIONS ASSOCIATED WITH THE PLACEMENT OF DENTAL IMPLANTS: ORAL MAXILLOFACIAL CLINICS N AM 15 (2003) 243-249
A MULTIFACTORIAL ANALYSIS TO IDENTIFY PREDICTORS OF IMPLANT FAILURE AND PERI-IMPLANT BONE LOSS

Vervaeke S, Colaert B, Cosyn J, Descheppe E, De Bruyn H.

Aim: TO IDENTIFY PREDICTORS OF IMPLANT FAILURE AND PERI-IMPLANT BONE LOSS

Materials & Methods:
- RETROSPECTIVE COHORT, 376 PATIENTS WITH 1320 OSSEOSPEED IMPLANTS
- AT LEAST 2 YEARS FOLLOW-UP (24-65 MONTHS)
- STATISTICAL ANALYSES, AT A LEVEL OF SIGNIFICANCE OF 0.05
  - MULTIVARIATE ANALYSIS (COX PROPORTIONAL HAZARDS REGRESSION)

Results:
- Cumulative implant survival 96.8% on patient level
- Mean bone loss 0.36 mm (SD ±0.68)

Results:
- Risk factors for bone loss were:
  - Being a smoker
  - Having an implant in the maxilla
- Risk factors for implant failure were:
  - Being a smoker
  - High recall compliance (patients who experienced an implant failure of one of their implants were more prone to check their oral status than patients not having experienced any failures)

Conclusion:
- Implant related factors did not affect marginal bone loss or implant survival
- Being a smoker was associated with implant failures and bone loss
- Implant in the maxilla was associated with more bone loss

AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

SELECTIVE SEROTONIN REUPTAKE INHIBITORS AND THE RISK OF OSSEOINTEGRATED IMPLANT FAILURE

- SSRIs: Antidepressant- Prozac, Zoloft, Celexa, Paxil
- SSRIs reduce bone formation and increase risk of fracture
- 916 implants in 490 patients (94 implants in 51 patients on SSRIs)
- SSRI usage associated with an increased risk of dental implant failure (10.6% vs. 4.6%)
- Implant diameter <4mm and smoking further increased the risk in both groups

WU ET AL- J DENT RES 2014(11) NOV:1054-61
AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

RISK FACTORS FOR IMPLANT FAILURE

- Smoking negatively affects healing and the outcome of implant treatment.
- Smoking and antidepressant use were statistically significant predictors of implant failure.

PERI-IMPLANTITIS

- MINOR
  - Scale with titanium curette
  - Home irrigator/ HClO
  - Intrasulcular antibiotics

EXPOSED FIXTURE

- Expect further exposure as inflammation reduces
- Pocket depth improves
- May be maintainable for long term

MODERATE PERI-IMPLANTITIS

- Further radiographic bone loss/ pocketing
- Increased probing depths
- Bleeding on probing
- Gingival erythema
- Purulent drainage
- Gram - anaerobes
- No mobility
PERI-IMPLANTITIS

- Surgical debridement
- Citrate, CHX
- Bone graft
- Infuse (rBMP)
- Barrier membrane - PerioDerm
- Primary closure

CEMENT SEPSIS

- Managed like peri-implantitis
- Cement must be completely debrided
- Best to avoid - keep margins ≤ 1mm subgingival

AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

CAN AN IMPLANT HAVE A PERIAPICAL LESION?

- Inactive - probable apical scar from osteotomy longer than implant
- Infected
  - Implant placed in proximity to focus of infection
  - Contaminated implant was placed

AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

SUCCESS RATES OF OSSEOINTEGRATION FOR IMPLANTS PLACED UNDER STERILE VERSUS CLEAN CONDITIONS
Tarnow D, J Periodontol 1993 Oct;64(10)954-6

- Retrospective study
  - “Sterile” - 61 pts/ 273 implants - OR/ strict sterile protocol
  - “Clean” - 31 cases/ 113 implants - Clinic setting

- Evaluated at Stage 2
  - Sterile group: 98.9% implant success/ 95.1% case success
  - Clean group: 98.2% implant success/ 93.5 case success

- No statistical difference between study groups
- Implant surgery can be performed under “clean” conditions

IT DOESN'T REALLY MAKE A DIFFERENCE UNLESS YOU TOUCH OUTSIDE OF THE ASEPTIC FIELD

- So, if you are new to surgery, maintaining a “OR sterile” environment is a good insurance policy

CAN AN IMPLANT HAVE A PERIAPICAL LESION?

- Inactive - probable apical scar from osteotomy longer than implant
- Infected
  - Implant placed in proximity to focus of infection
  - Contaminated implant was placed
  - Bony necrosis due to overheating


DRILLING FOR SUCCESS

- IT IS CRITICAL THAT THE BONE BE RESPECTED WHEN PREPARING THE IMPLANT OSTEOTOMY SITES. THIS MEANS:
  - Light pressure on the drill
  - Slowest drilling speed for the job
  - Drill speed decreases as drill diameter increases
• Higher drill speed is more efficient and actually causes less heat generation.
• Increasing speed and load together does not increase heat generation.


Intermittent versus continuous drilling

• Continuous drilling results in higher temperatures in bone due to:
  • Clogging effect of bone debris
  • Inability of irrigation to reach site
• Decreases cutting efficiency and increases time required


Implant drilling speeds

<table>
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<tr>
<th>Tissue Punch</th>
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<tr>
<td>Osteotomies:</td>
<td>1200 - 1500 rpm</td>
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<tr>
<td>Thread Tapping:</td>
<td>15 - 50 rpm/ 45 Ncm</td>
</tr>
<tr>
<td>Implant Delivery:</td>
<td>15 - 50 rpm/ 35 - 45 Ncm</td>
</tr>
<tr>
<td>Cover Screw/Abutment:</td>
<td>10 - 15 rpm/ 10 -20 Ncm</td>
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</table>

Drill sharpness

A sharp drill creates less heat!

IMPLANT PERIAPICAL LESION

- IF INFECTED, REQUIRES SURGICAL INTERVENTION
  - If not mobile: apical resection and debridement
  - If mobile: removal and grafting

AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

IMPLANT PERIAPICAL LESION

AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

SALVAGE OF AN AILING IMPLANT

- The fixed dental prosthesis supported by the implant does not require replacement unless the implant is removed
- Esthetics is not a factor
- Adequate access for peri-implantitis treatment is available
- The implant is causing an esthetic problem that can be predictably treated by surgical and/or prosthetic means (excludes poor implant placement)
- Removal cannot be done by reverse torquing the fixture (would require trephine or drill)
- The patient has psychological or emotional attachment to the implant
- Financial considerations are an issue

Tarnow DP, Chu SJ, Fletcher PD. Clinical decision: Determining when to save or remove an ailing implant. CDE World April 2016

AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

REMOVAL OF AN AILING IMPLANT

- The fixed dental prosthesis supported by the ailing implant requires replacement
- The implant is causing an esthetic problem that cannot be predictably treated by surgical or prosthetic means (includes poor implant placement)
- There is existing attachment loss in combination with poor position
- The implant can be reverse torqued out with out damaging the surrounding periodontium and adjacent teeth
- Prosthetic components are no longer manufactured for the specific existing implant system

Tarnow DP, Chu SJ, Fletcher PD. Clinical decision: Determining when to save or remove an ailing implant. CDE World April 2016

AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

Failing Implant

- Refractory to treatment
- Continues to get worse
  - Bone loss progresses
  - Continued suppuration
  - Continued pain
  - Mobility
AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

RITZER J., ET AL. NATURE COMMUNICATIONS 8:264, AUG 15, 2017

• Standard testing: matrix metalloproteins (MMP-8) in sulcular fluid in peri-implant pockets
• Developed a chewing gum test for peri-implantitis
  - Attached bitter peptide denatonium fragment to chewing gum
  - MMP-8 cleaves off denatonium, resulting in a bitter taste
  - Intensity of bitterness related to level of MMP-8
• Good correlation between home chewing gum test and chair side sulcular fluid assay

BROKEN IMPLANT
FIXTURE REMOVAL
• SALVIN IMPLANT RESCUE KIT

IMPLANT REMOVAL TREPHINE

ASTRA TECH EV IMPLANT REMOVAL
AVOIDING AND MANAGING DENTAL IMPLANT COMPLICATIONS

CLOSING THOUGHTS…

▸ Once an issue is recognized, manage immediately.
▸ Implant problems will not get better on their own.
▸ If you are not comfortable managing the most common complications, don’t attempt the procedure.
▸ Get the education you need to get comfortable!

“WHEN THINGS DON’T SEEM RIGHT…”

…there’s a good chance that something’s wrong!”

JBR 1990
ITEM NUMBER 110
“Essentials of Implantology” Course
Receive 14 CE Credits as well as extensive knowledge about the Essentials of Implantology and Guided Implant Surgery. Utilizing the Industry’s Most Advanced Technology, the featured speaker, Jay Reznick, DMD, MD is the Director of the Southern California Center for Oral and Facial Surgery and has published numerous articles in JADA, DentalTown, and more. This course aims to educate general dentists in the foundations of surgical principles and implant surgery.

Dr. Reznick is the Director of the Southern California Center for Oral and Facial Surgery in Tarzana, California and a Diplomat of the American Board of Oral and Maxillofacial Surgery. A frequent lecturer, he has published numerous articles in JADA, Journal of the California Dental Association, Oral Surgery-Oral Medicine-Oral Pathology and Compendium of Continuing Education in Dentistry, Dentaltown Magazine, CE Digest and Gastroenterology.

At the conclusion of this course, attendees will:

• Understand the fundamentals of safe surgery and implantology
• Be familiar with atraumatic extraction techniques and ridge preservation
• Understand the potential risks and complications which accompany dental implant surgery, and know how to prevent and manage them
• Understand the concept of prosthetically-based implant planning to determine the proper position and orientation of each implant fixture for ideal restoration
• Become familiar with using software to plan implant surgery and understand how to order a surgical guide
• Gain hands-on experience utilizing guided surgery to place implants accurately and efficiently using custom surgical guides
• Understand which cases are appropriate to tackle and which cases are best to do in collaboration with a surgical specialist

Speaker
Jay Reznick, DMD, MD

Registration:
For complete information and/or to register, please go to www.OnlineOralSurgery.com. Space is limited.

Credit Details: This program half live lecture and half self-participation, designated for 14 hours of CE credit by Online Oral Surgery. AGD Codes: 704 (8 hours) and 719 (8 hours).

Cancellation Policy: Full refund over 60 days from event minus $25 administrative fee. Refunded 50% 30-60 days from event. No refunds, cancellations, or transfers under 30 days from event.

Approval does not imply acceptance by a state or provincial board of dentistry or AGD endorsement. 09/01/2016 to 08/31/2018. Provider ID# 371806

LOCATIONS
San Diego, CA September 22-23, 2017
St. Louis, MO October 20-21, 2017
Charlotte, NC November 6-7, 2017
Tampa, FL December 15-16, 2017

DISCOUNT CODES
$250 off Doctor Registration: “DSworldDoc”
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