DRS. PALERMO-EDWARDS & CACCHILLO

PROBING THE PRACTICE

A newsletter brought to you by **Drs. Palermo-Edwards & Cacchillo** to share news and provide education to ensure our offices continue to "measure up".

MAY | 2017
Vol 3, No 1

A NOTE FROM THE DOCTORS

We are excited to present an article from Dr. Purcell in this edition of our newsletter. Dr. Purcell is an expert in restoring implants and hopes to alleviate any questions you may have in regard to implant abutment screw loosening. This is an issue that plagues all dental offices alike and can be a frustrating and challenging problem. We have decided to commit both of our 2017 'Probing the Practice' editions to this specific topic. Spring has sprung so enjoy the sunshine!

Lisa A. Palermo-Edwards • David A. Cacchillo • James M. Palermo

FREE CE CREDIT:
IMPLANT ABUTMENT SCREW LOOSENING: PART I ETIOLOGY

Loosening of the abutment screw is a frustration for the patient, restorative and surgical doctors. Screw loosening prior to the internal connection approached 30% over the first 5 years. However with the internal connection we expected this complication to go away . . . well it has not. Loosening of the abutment screw has significantly decreased in percentage of incidence, however with more implants being placed and restored every year the numbers of complications rise.

There are several factors to look at when analyzing this complication: 1) Etiology 2) Prevention and 3) Treatment of a loose abutment screw. This article will discuss the primary etiologies of abutment screw loosening.

ETIOLOGY

The primary reasons screws become loose are:

1) occlusion
2) proximal contacts
3) restoration length
4) torque upon placement
5) original manufacture parts

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IT'S TIME FOR YOUR YEARLY PERIAPICAL X-RAY!

As part of your preventative implant maintenance regimen, we recommend taking yearly periapicals of implants. This protocol can detect any changes to the bone surrounding the implant. Early detection of problems with implants is imperative to their long-term success.

WHAT'S INSIDE...

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OCCLUSION

Single posterior implants are very technical to place. The main problem is that dental implants lack the periodontal ligament and therefore do not move. This means that the occlusion must be handled differently than a natural tooth restoration. During function and parafunction all teeth move due to the periodontal ligament. Factors that determine the amount of movement are: bite force, amount of parafunction, amount of periodontal support and root length/size/shape. The more mobile the adjacent teeth are, the more careful we must be in adjusting the occlusion of the dental implant. In general the dental implant should be in lighter occlusion compared to the adjacent natural teeth. The thinnest material we have to measure occlusion is 8 micron shimstock (Photo A). When placing a dental implant restoration the adjacent teeth should be measured first with shimstock to determine which are holding in centric contact (without clenching). When the implant restoration is placed then these same teeth should hold the shimstock, however the implant restoration should pull through with shimstock when in normal closure. There should be no contact in excursive movements. When the patient clenches their teeth together the shimstock should hold on the implant restoration and the natural teeth. When clenching, the adjacent natural teeth intrude, the implant comes into occlusion and therefore helps support the posterior occlusion.

If the implant restoration is placed in equal occlusion during normal closure, then the implant restoration will be overloaded when the patient clenches their teeth together. During clenching, the teeth will intrude and the implant restoration will be supporting the occlusion by itself. This force is transferred to the abutment screw which in turn will fatigue over time which will cause loosening and possibly fracture of the screw (Photo B). Some will ask, well then why not have all implant crowns out of occlusion completely to avoid screw loosening, as they will still be close enough to function. The answer is not only function, it is parafunction, we replace posterior teeth not primarily for aesthetics, but for function, arch stability and posterior support. If the implant does not help support the occlusion during parafunction then the remaining teeth will be overloaded which leads to mobility, wear and fracture of the remaining teeth.

The opposing tooth relationship will change over time, and therefore the occlusal relationship should be evaluated and adjusted as necessary at recare appointments. This will aid in prevention of screw loosening long-term.

PROXIMAL CONTACTS

Proximal contacts that are too tight can lead to screw loosening, movement of adjacent teeth, and non-seating of the implant restoration. Proximal contacts should be adjusted so that they allow the restoration to completely seat, floss should snap through the proximal contact and the proximal contact should be visibly closed to prevent tooth movement and food impaction. Point contacts should be avoided. Ideally shimstock should be able to pass through the proximal contact but still be visibly closed (Photo C).

RESTORATION LENGTH

With natural teeth we are concerned with crown to root ratio. This is not so much the case with dental implant restorations. The concern is with restoration length from the occlusal plane to the implant platform. The force that we are concerned with is torque. Torque is a function of distance by the amount of force.

Torque = Distance x Force

As the length of the abutment and restoration complex increase so does the force that is applied on the abutment screw. As we move more posterior in the mouth the force increases. Therefore tall/long implant restorations in the posterior of the mouth are much more prone to screw lengthening.

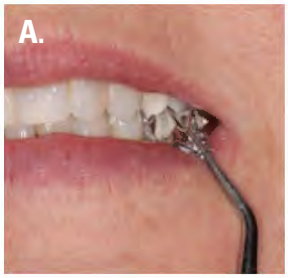
TORQUE UPON PLACEMENT

Abutment screws should have the company recommend torque values applied when the restoration is placed. If the screw is torqued under the recommended value then it is more prone to loosening. Applying more torque than the recommended value will risk screw fracture. An abutment screw should only be torqued to the recommended value one time to avoid weakening the screw. (Photo D).

ORIGINAL MANUFACTURE PARTS

Utilizing parts that are not made from the original manufacturer of the implant can result in earlier screw loosening, fracture and failure of the restoration. Utilize componentry from the original manufacture when restoring dental implants whenever possible.

Article sources can be found online at www/pecdds.com/ce-courses/newsletter/



Questions

1. Which of the following is not one of the main causes of screw loosening?

A. occlusion
B. proximal contacts
C. implant length
D. torque upon placement
E. original manufacture parts
F. restoration length

2. Should the implant restoration be in_____occlusion compared to the adjacent natural teeth?

A. equal B. lighter C. even

3. When checking the occlusion of a single dental implant restoration one should use:

A. articulating paper
B. 8 micron shimstock
C. patient perception
D. nothing, just eyeball it

4. Restorative abutments should be manufactured by:

A. the original manufacturer of the implant body
B. the lowest bidder
C. Home Depot
D. ACE hardware

5. Which statement is true regarding implant restorations?

A. Does not matter as long as it looks good
B. The shorter the implant restoration the more likely the abutment screw will become loose.
C. The longer the implant restoration the more likely the abutment screw will become loose.
D. The more posterior the implant restoration the more likely the abutment screw will become loose.
E. All of the above
F. C & D

KEY: 1. C 2. B 3. B 4. A 5. F

MINI RESIDENCY SERIES

JOIN US FOR OUR 3RD ANNUAL IMPLANT MINI RESIDENCY SERIES

- Enhance your skills and confidence in restoring dental implants.
- Learn tips and tricks for restoring single, multiple, hybrid and denture supported implants.
- Increase patient acceptance by streamlining your planning and sequencing processes.
- 34 hours of CE. All experience levels welcome!

Please call the office for registration information. Seats are still available!

COMMUNITY SUPPORT–PRESENTING SPONSOR

NC4K Reindeer Run,

PEC sponsored this amazing event again for the 2nd year in a row! We are proud to say that each staff member took part in this last year's 2016 NC4K 5K here in Reynoldsburg. Thank you to the community for making this run such an impactful event!

FOR YOUR PRACTICE

ARE YOU AT RISK?

Looking at how a data breach could affect your practice or your patients can provide valuable insights as to how safe your HIPAA practices are.

- Do your HIPAA Privacy & Security Officers understand their roles?
- Did you update your Notice of Privacy Practices & Business Associate Agreements before the 9/2013 deadline?
- Have you completed the required annual Security Risk Assessments?

Risk experts at The Linda Harvey Group can create customized policies, procedures, forms and risk assessments that reflect your practice

"The LHG created our custom HIPAA compliance system. They were knowledgeable & easy to work with!"
-Dr. Lisa Palermo-Edwards

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UPCOMING EVENTS

2017 Dental Implant Mini Residency Course:
6/16/17, 8/18/17, 9/8/17, 10/6/17, & 1/19/18

Periodontal Seminar for the Dental Hygienist: 9/21/17
2018 dates coming soon!

IMPACT STUDY CLUB: 10/5/17

FREE CE CREDIT INSIDE!

CE CREDIT RETURN INSTRUCTIONS:

1. Read the CE article, record your answers to the 5 questions and write your name on the blank answer key provided below. (Please self-grade your answers).
2. Make a photo copy of this entire page and return to our office.
3. PEC will e-mail your **FREE, 1 HOUR CE CERTIFICATE** to the office address.

COMPLETE FOR 1 CREDIT HOUR

Name: _____

1._____ 2._____ 3._____ 4._____ 5._____

OFFICE ANNOUNCEMENTS

Each month in 2017 one "lucky" referring office is randomly selected to spend Happy Hour with our office staff. Thanks to each office for making this a success! Who will be next? Like us on Facebook to see if your office has been selected!

END OF HEALING ABUTMENT RETURN PROGRAM

PEC is announcing the end of the "Healing Abutment Recycling Program". Our office is working hard to keep the cost of your patients implants reduced significantly. Feel free to continue to save them and we would gladly make arrangements to get them. Thank you to all the office's that helped make this program a success!

40+ YEARS OF COMMITMENT!

In December of 2016, Dr. James Palermo had decided to put down the instruments of education at OSU. Throughout the years, he has provided the periodontal students with amazing knowledge, skills, commitment and last, but not least, fun and laughter. We all are so proud to be able to work alongside this remarkable man! Congratulations Dr. Palermo for your 40+ years of service and dedication to the students at The Ohio State University College of Dentistry!