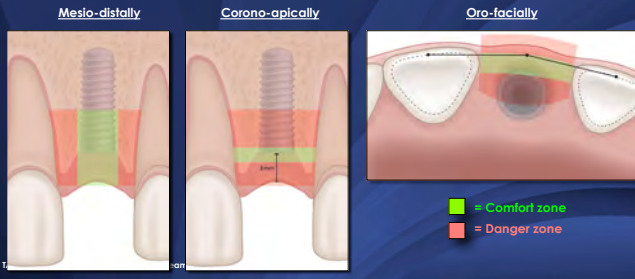




Buser, Martin, Belser: Optimizing esthetics for implant restorations in the anterior maxilla: Anatomic and surgical considerations. *Int J Oral Maxillofac Implants* 19 (Suppl 1): 43, 2004



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Coronal malpositions are rarely seen



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Facial malpositions due to oversized implants



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Facial malpositions due to misangled implants



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Too many Implants



- Most important problem: Adjacent implants in extended edentulous spaces

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Observed esthetic complications with immediate implants in early 2000



-> Increased risk for soft tissue recession

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Esthetic Complications & Failures

- Most of these esthetic failures require the removal of the implant(s)
- This results in local bone defect(s)
- In some cases, there is also a lack of sufficient keratinized soft tissues

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# TOPICS

- Introduction
- **Surgical challenges to treat esthetic implant failures**
- Treatment options & case reports
- Conclusions

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## There are Challenges from a Surgical Point

- Risk to cause additional bone loss when failed implants are removed
- Reestablishment of keratinized mucosa, when it is lacking
- The retreatment of such patients often starts with a compromised clinical situation



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## Implant Removal Technique

- Implant removal must be done as carefully as possible
- Rule #1: Don't touch the palatal bone wall
  - \* **Trephines, recommended in the 1990's, are completely out today**
    - They are causing too much bone loss
  - \* For many years, a peri-implant osteotomy was performed with burs
  - \* Today, special implant removal kits are preferred using a reverse removal torque
    - Reverse torque technique (RTT)

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## State-of-the-Art Removal of osseointegrated Implants



**Reverse Torque Technique (RTT)**



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## Reestablishment of Keratinized Mucosa (KM)

- Rule #2: Make sure that you have enough keratinized mucosa at future implant sites
- When is the best time point to correct the soft tissues?
  - During implant removal surgery
  - At implant placement
  - Following implant placement as separate surgery
- Soft tissue augmentation is done with the techniques used in implant patients for more than 20 years
  - Connective tissue grafts
  - Full thickness grafts

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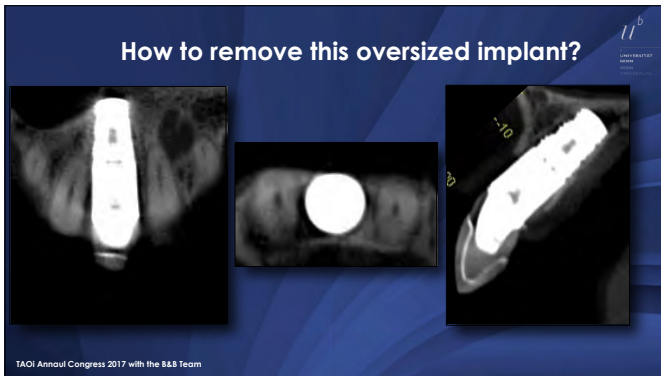
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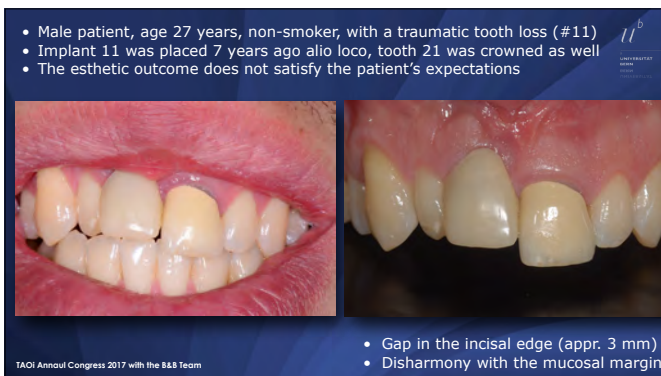
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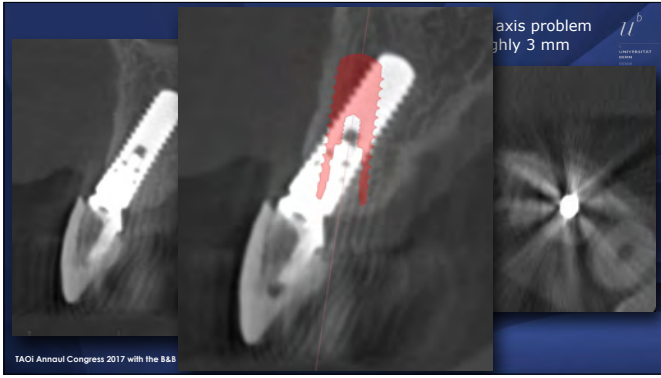
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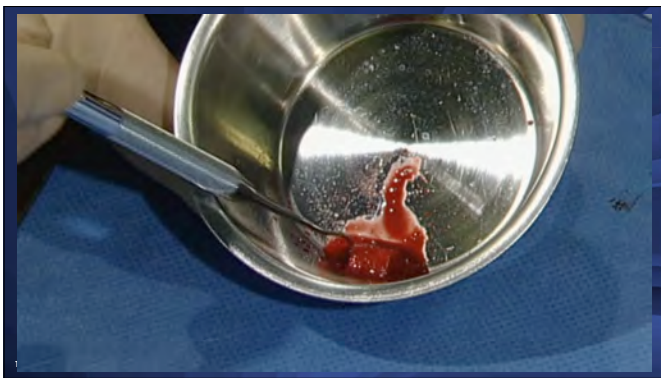
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# TOPICS

- Introduction
- Surgical challenges to treat esthetic implant failures
- **Treatment options & case reports**
- Conclusions

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## Most important Criterion: Bone Defect Morphology

- **Crest width at potential implant sites and 3 mm mesially and distally**
  - ➔ 2-wall defect: Simultaneous GBR is possible
  - ➔ 1-wall defect (< 4mm): Staged approach is needed
- **Rarely, implant removal can be combined with implant placement**
  - ➔ No infection at implant site
  - ➔ Intact soft tissues to allow a primary wound closure

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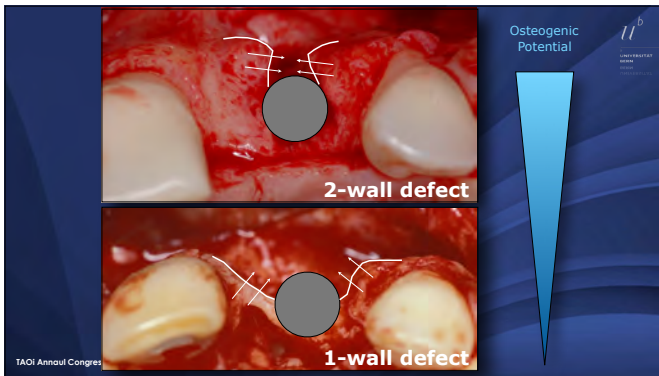
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## Treatment Options to handle Esthetic Failures

- The surgical approach depends on the anatomic situation
- **Option 1: Implant removal and simultaneous implant placement (= 1 surgery)**
- **Option 2: Early implant placement following implant removal (= 2 surgeries)**
- **Option 3: Implant placement following ridge augmentation following implant removal (= 3 surgeries)**

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## Treatment Options to handle Esthetic Failures

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Case #1:



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2015: 5 1/2 yrs



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2014: 5 1/2 yrs



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## Treatment Options to handle Esthetic Failures

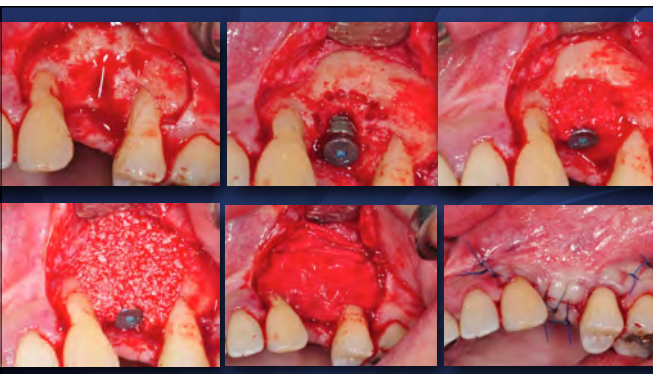
- The surgical approach depends on the anatomic situation
- Option 1: Implant removal and simultaneous implant placement (= 1 surgery)
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### Case #2:



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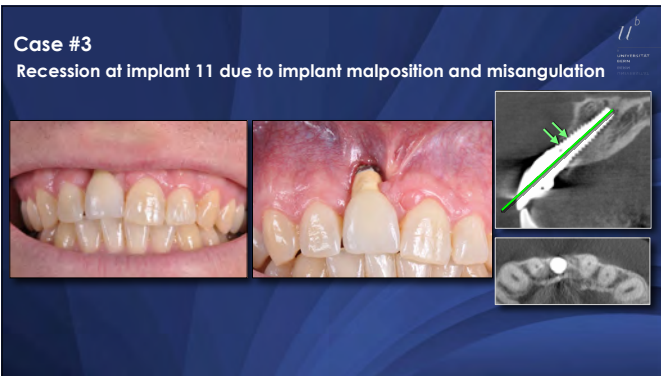
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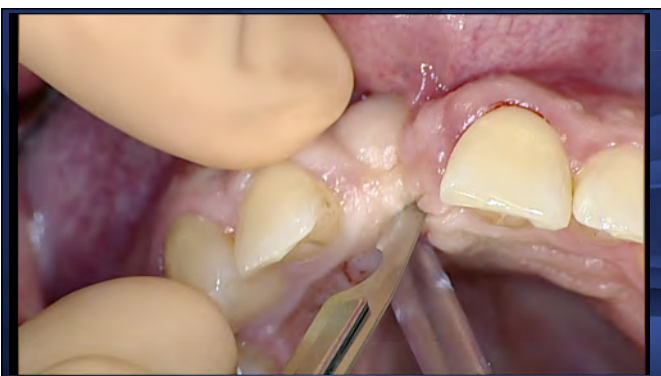
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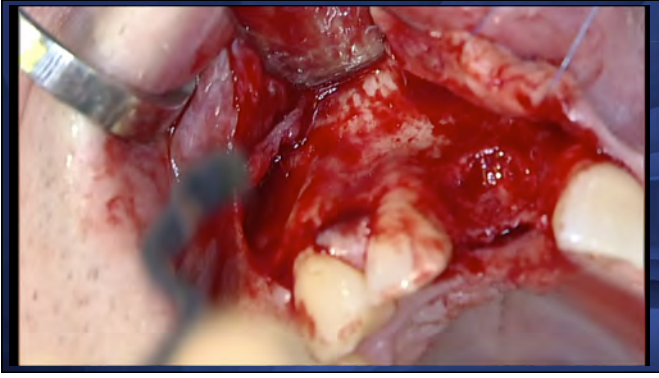
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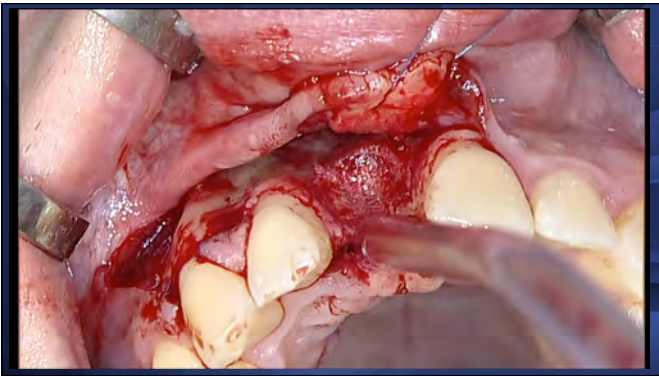
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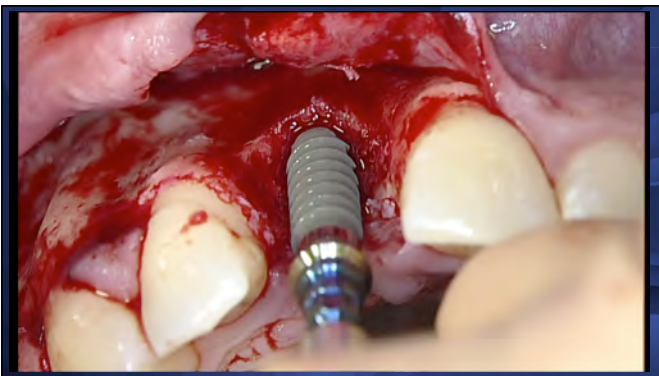
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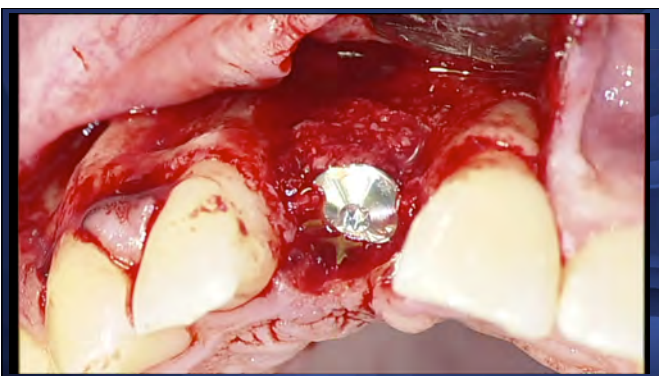
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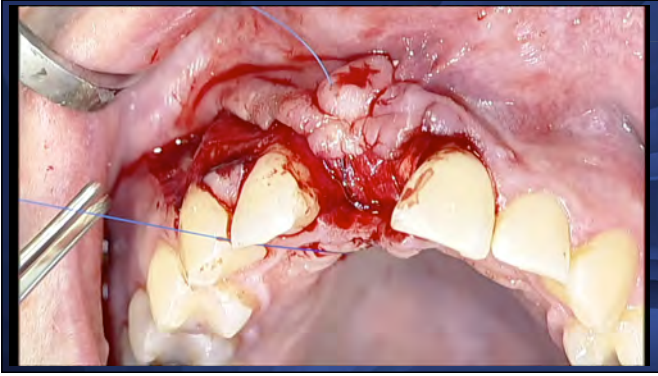
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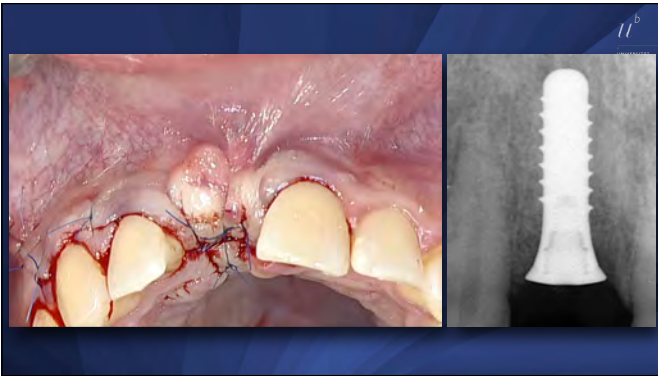
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- A 3 to 6 months soft tissue conditioning phase will follow now to optimise the peri-implant soft tissue esthetics and maturation
- A screw-retained crown is highly preferred by our group
- The esthetic outcome will be excellent



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### Treatment Options to handle Esthetic Failures

- **The surgical approach depends on the anatomic situation**
- Option 1: Implant removal and simultaneous implant placement (= 1 surgery)
- Option 2: Early implant placement following implant removal (= 2 surgeries)
- **Option 3: Implant placement following ridge augmentation following implant removal (= 3 surgeries)**

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Case #4: Implants 14 yrs in place: peri-implant infection with severe bone loss



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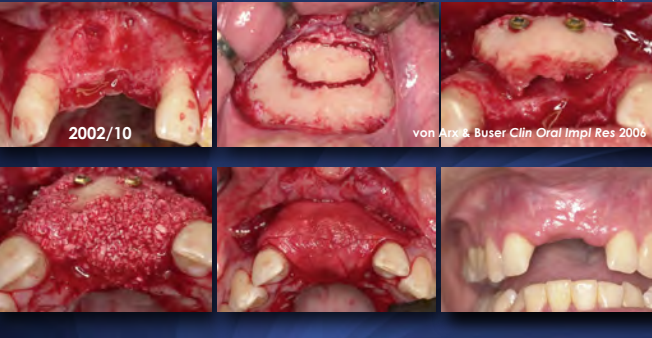
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Surgery 2: Ridge augmentation with block graft and GBR



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Surgery 3: Implant placement 11/21 with simultaneous GBR



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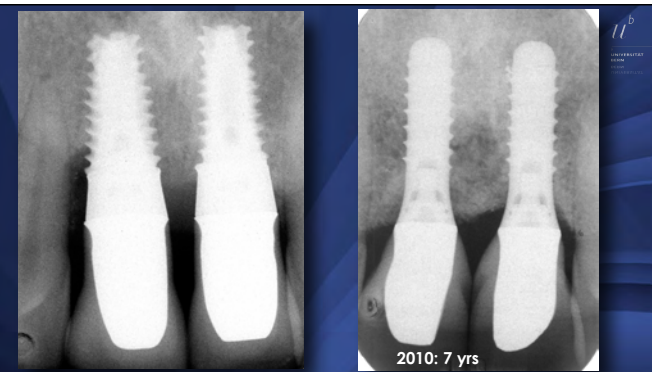
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### Case #5: Implants in place for 4 years




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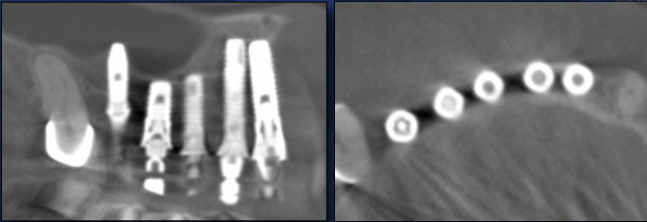
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### CBCT status in Nov 2012



- Implants 16-13 cannot be maintained
- Sinus floor elevation is mandatory in area 14-17
- Patient should always have a Fixed Dental Prosthesis during therapy

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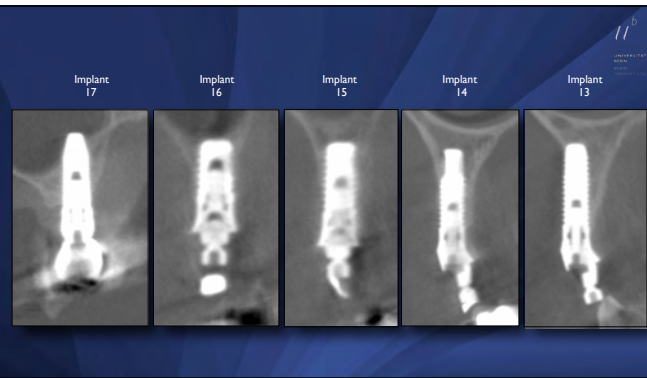
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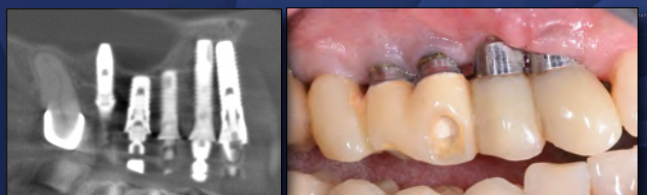
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### Treatment Plan



1. Implant removal 14, 15 and 16, maintain the FDP supported by impl. 13 and 17
2. Implant placement 14 and SFE in area 14-17
3. Change of FDP to implant support 14 and 17
4. Implant placement in area 16 and implant removal 13, defect grafting in area 13
5. Implant placement in area 13 with GBR
6. Final rehabilitation with implant crown 13 and FDP supported by implant 14 and 16

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### July 2013: 3 implants are removed (Surg 1)




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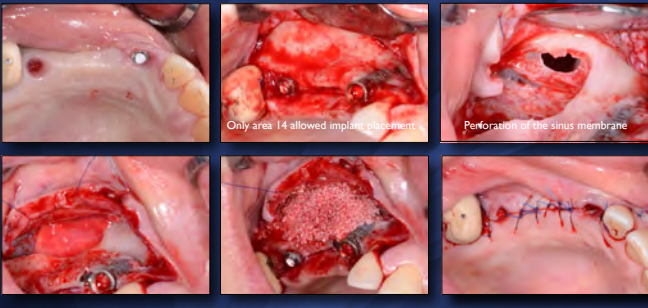
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Mar 2014: 1 implant is placed with SFE (Surg 2)



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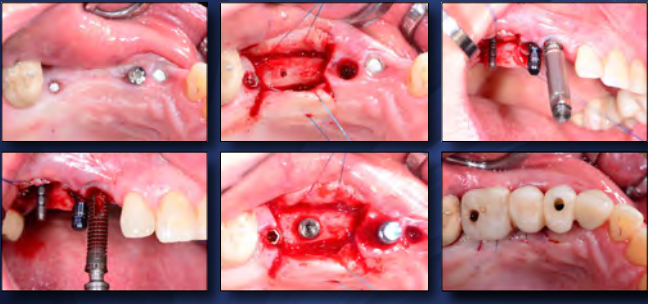
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Aug 2014: Another implant is placed, one removed (Surg 3)



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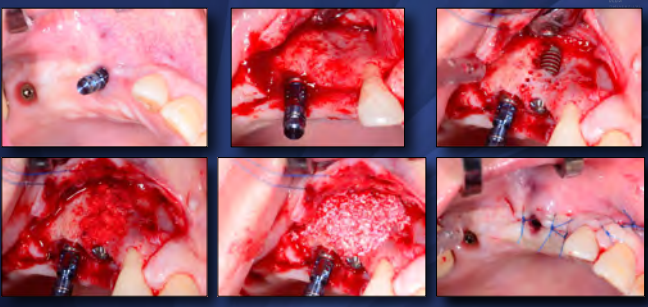
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Nov 2014: The last implant is placed (Surg 4)



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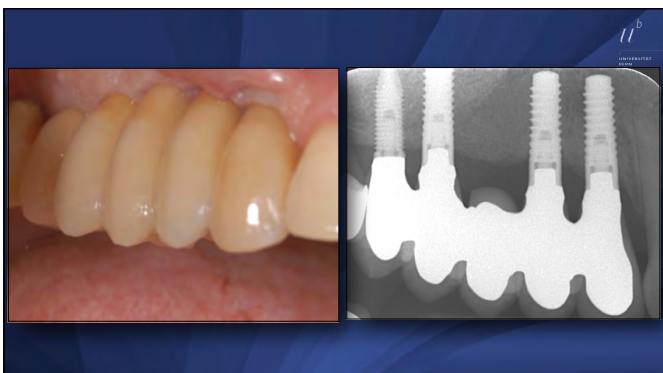
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## TOPICS

- Introduction
- Surgical challenges to treat esthetic implant failures
- Treatment options & case reports
- **Conclusions**

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### Conclusions: The Challenge of Esthetic Failures

- Esthetic implant failures are most often caused by poor treatment quality of clinicians
- The 3-dimensional malposition of implants is the most often seen cause for esthetic failures
- In such cases, implant removal is the only treatment option to eliminate the problem
- Implant removal must be done with caution to avoid additional bone loss
- Special implant removal instruments are used today to fracture the bone-implant interface by rotation (BTI Extractor Kit)

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### Conclusions: The Challenge of Esthetic Failures

- Following implant removal, a direct re-implant placement is only done in case of a non-infected site and with intact soft tissues allowing a primary wound closure
- Otherwise, the soft tissues are left to heal to clear a local infection
- If an insufficient amount of keratinized mucosa is present, a full thickness soft tissue graft is used
- Implant placement follows the typical guidelines established more than 15 years ago
  - ✓ Implant insertion in a correct 3D position with good primary stability
  - ✓ Build-up of peri-implant bone using contour augmentation with GBR
  - ✓ Primary wound closure to protect applied biomaterials
- The treatment is often very time consuming and requires several surgical steps and extended healing periods

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### Conclusions: Prevention of Esthetic Failures

- The best strategy is to prevent esthetic complications
- It is strongly recommended to classify your patients according to the SAC Classification
  - ✓ S = Straight forward
  - ✓ A = Advanced
  - ✓ C = Complex
- Treat only those cases, which you feel comfortable with and for which you are experienced enough
- Otherwise, team-up with a more experienced implant surgeon

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**EDUCATION**

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Clinician ↔ Patient ↔ Treatment Approach

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Bio-materials ↔ Treatment Approach

**The SAC Classification in Implant Dentistry**

ITI

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**ITI Treatment Guide**

Volume 10

**Implant Therapy in the Esthetic Zone**

Current Treatment Modalities and Materials for Single-tooth Replacements

Editors: C. Beer, S. Chen, D. Wenzel

Authors: G. Chappuis, W. Martin

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**Master Course in GBR and Sinus Floor Elevation Procedures**

**Course Directors:** Prof. Dr. D. Buser, zmk bern, University of Bern

**Dates:** August 30 - September 01, 2017  
June 13 - 15, 2018

**Master Course in Prevention and Management of Esthetic Implant Failures**

**Course Directors:** Prof. Dr. D. Buser, zmk bern, University of Bern  
Prof. Dr. U. Belser, University of Geneva

**Dates:** February 28 - March 02, 2018

**Master Course in Esthetic Implant Dentistry**

**Course Directors:** Prof. Dr. D. Buser, zmk bern, University of Bern  
Prof. Dr. U. Belser, University of Geneva

**Dates:** August 29 - 31, 2018

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**THANK YOU!**

**Master Course in GBR and Sinus Floor Elevation Procedures**  
An interactive 3-day course with Live Surgeries and Hands-on Workshops

**Course Place:**  
August 30-September 1, 2018, 8:30-17:30h  
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**Speakers:**

Prof. Dr. Daniel Buser, Dept. of Oral Surgery and Stomatology, zmk bern, University of Bern (course director)  
Prof. Dr. Dieter D. Breda, Robert K. Schenk Laboratory of Oral Histology, zmk bern, University of Bern  
Prof. Dr. Karl-Dieter Dietz, Dept. of Oral Surgery and Stomatology, zmk bern, University of Bern  
Prof. Dr. István Urbán, Budapest, Hungary  
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