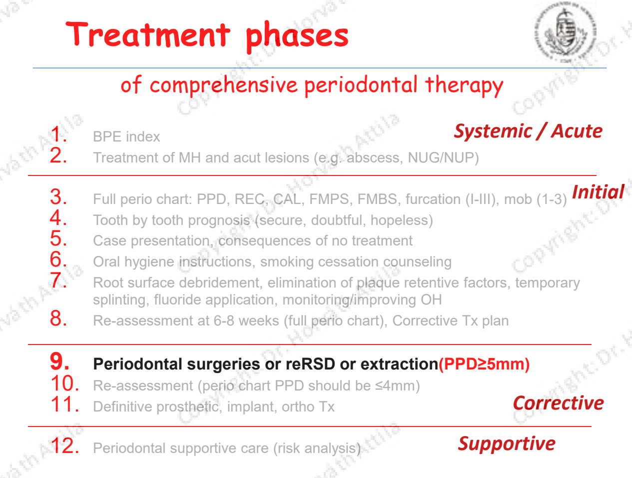

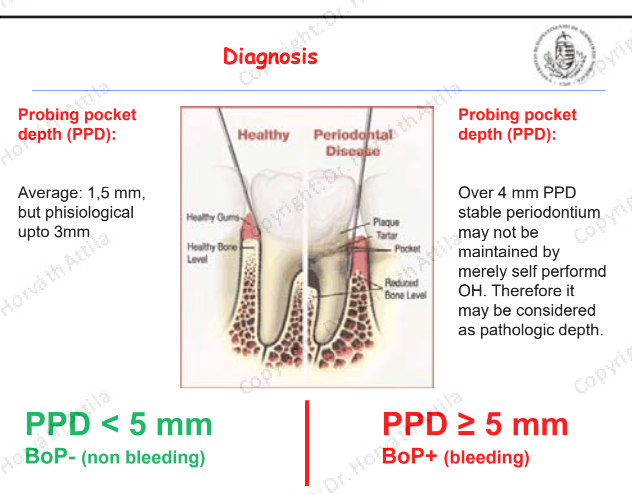

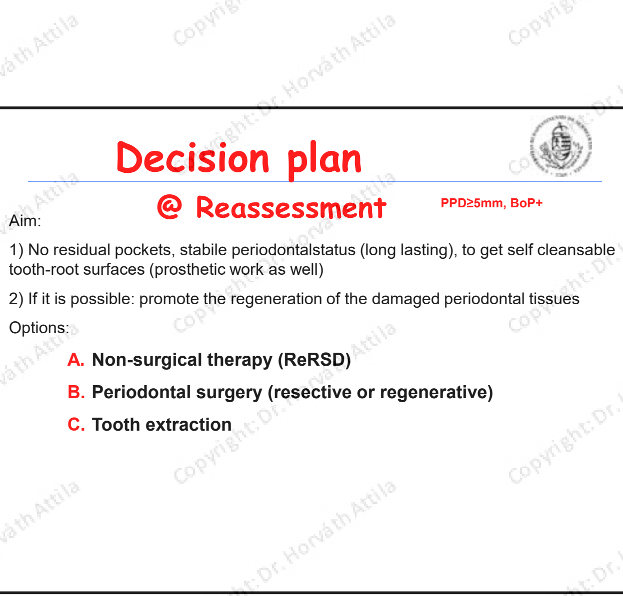

Surgical and nonsurgical periodontal therapy. Learned and unlearned concepts

L.J.A. Heitz-Mayfield & N.P. Lang

Periodontology 2000, 62: 218-231, 2013

Surgical techniques – paradigm shift

- Success of the periodontal surgical therapy depends on:
  - Quality of the Supportive care
  - Quality of the self performed oral hygiene
- New paradigm: Factors at the patient level
  - Cooperation
  - Smoking
  - Plaque control
  - General health factors
  - Patients care after surgery

Nyman S, Lindhe J, Rosling B. Periodontal surgery in plaque-infected dentitions. J Clin Periodontol 1977: 4: 240–249.

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Critical PPD

Gain (mm)
All teeth and surfaces
Alterations: Baseline-reexamination 6 months
Attachment level
n = 758
n = 790
Initial probing depth (mm)
MWF
4.2 ± 0.2
RPL
2.9 ± 0.3
5.4mm
Loss (mm)

Fig. 1. Regression analysis leading to critical probing depth as a basis for the decision-making process in periodontal therapy (from Lindhe et al. (58)). MWF, modified Widman flap; RPL, scaling and root planing.

Critical PPD

A kritikus tasakmélység reprezentálja azt a határértéket, ami felett a terápia sikeres (tapadás nyereség figyelhető meg), ami alatt a kezelés során tapadásvesztés érhető el.

- Nem-sebészi terápiánál (depurálás és gyökérsimítás) az érték: 2,9 mm
- Sebészi terápiánál az érték: 4,2 mm

58. Lindhe J, Socransky SS, Nyman S, Haffajee A, Westfelt E. „Critical probing depths" in periodontal therapy. J.Clin Periodontal 1982: 9: 323-336.

Conclusions

- A successful periodontal treatment needs the proper elimination of the dental biofilm, but not the contaminated root surface and the internal pocket wall
- For a PPD>6mm pocket the surgical approach is recommended, if the patiens come for regular visit – supportive periodontal care, and has good level of oral hygiene
- There are numerous, new materials and methods: the clinician has to be aware of their limitations. Usually there are lack of informaiton and well established longitudinal studies about the capabilities advantages and disadvantages of several newly developed techniques.
- But sometimes we have to overcome our present knowledge and „habits" to let the new era reach us and learn other perspectives.

Decision plan

@ Reassessment

PPD≥5mm, BoP+

Aim:

1) No residual pockets, stabile periodontalstatus (long lasting), to get self cleansable tooth-root surfaces (prosthetic work as well)

2) If it is possible: promote the regeneration of the damaged periodontal tissues

Options:

- **A. Non-surgical therapy (ReRSD)**
- **B. Periodontal surgery (resective or regenerative)**
- **C. Tooth extraction**

Aims of the periodontal pocket surgery

- Proper elimination of the dental biofilm (better insight), enhance the prognosis of the affected teeth
- Soft and hard tissue corrections
- From OHI point of view: Favourable and cleansable tooth morphology
- If it is possible: regeneration

Types/possibilities of periodontal surgical approaches

- **Explorative (OFD, Access Flap, reparation)**

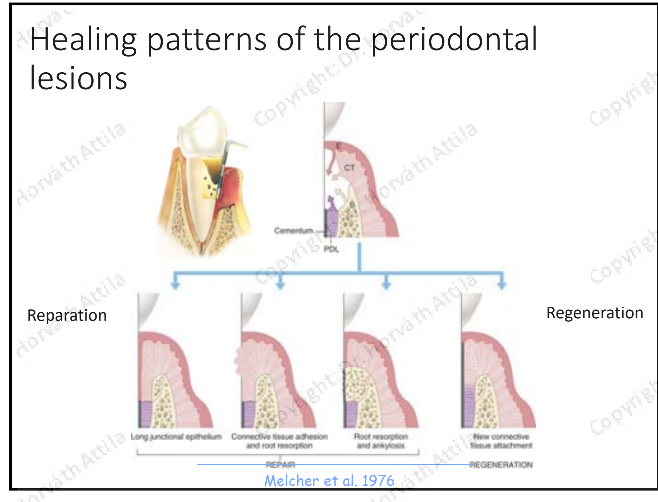
Open up, cleaning, removal of granulation tissues, sutering to the same position (long junctional epithelium)(reparation)

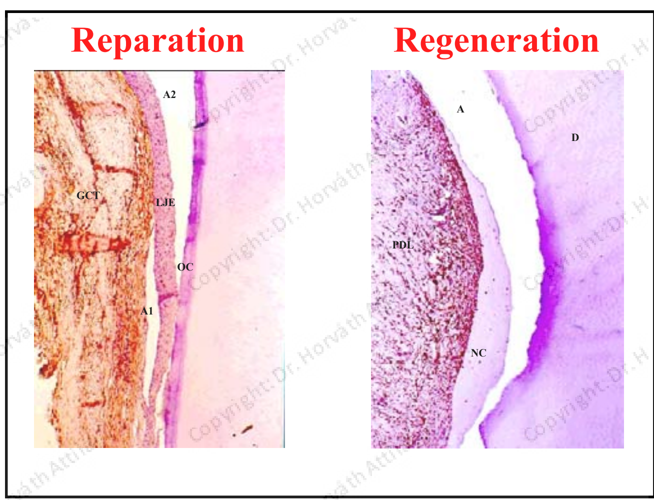
- **Resective periodontal surgery**

Elimination of the periodontal pocket with surgical manipulation of the soft and/or hard tissues (recession) (*reattachment*)

- **Regenerative techniques**

Attempt to foster regeneration of periodontal tissues (new attachment)





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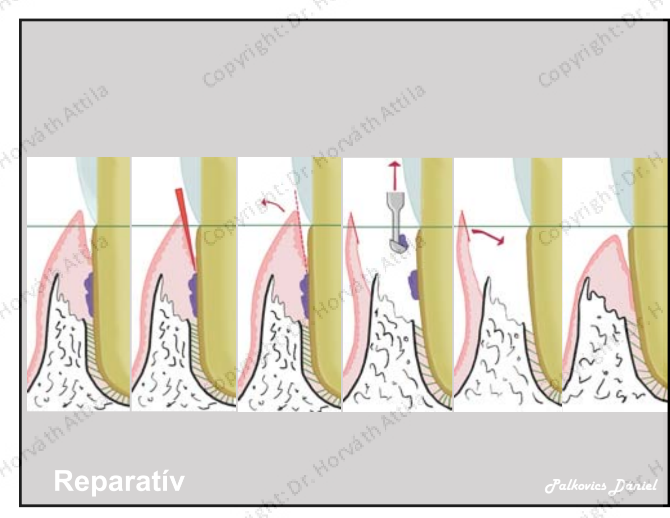

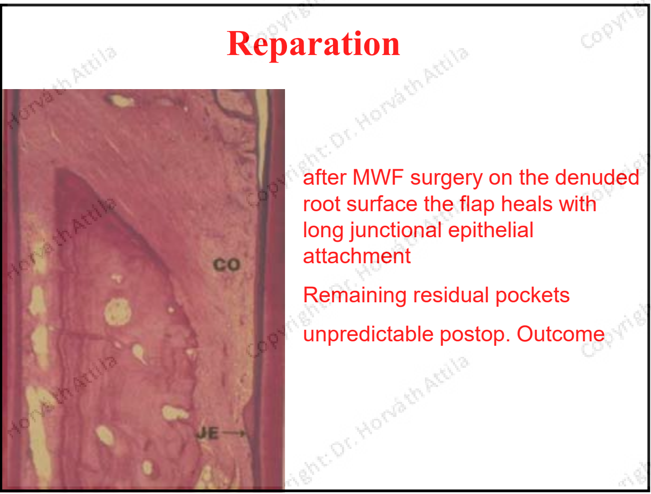

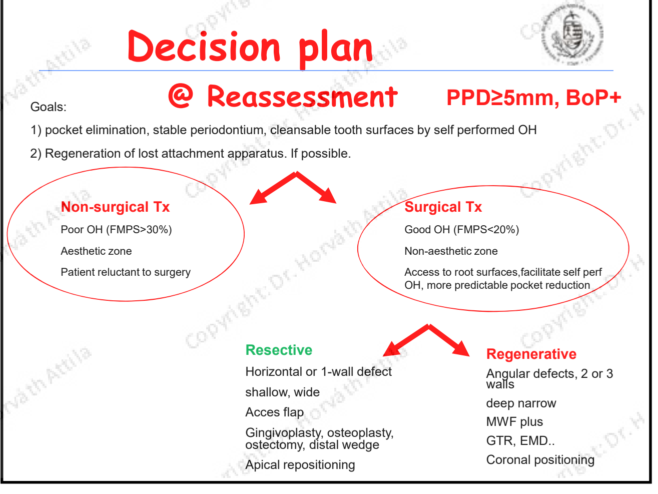

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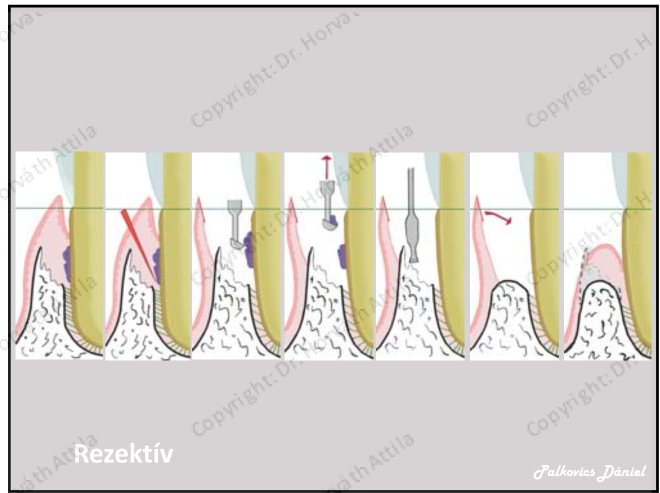
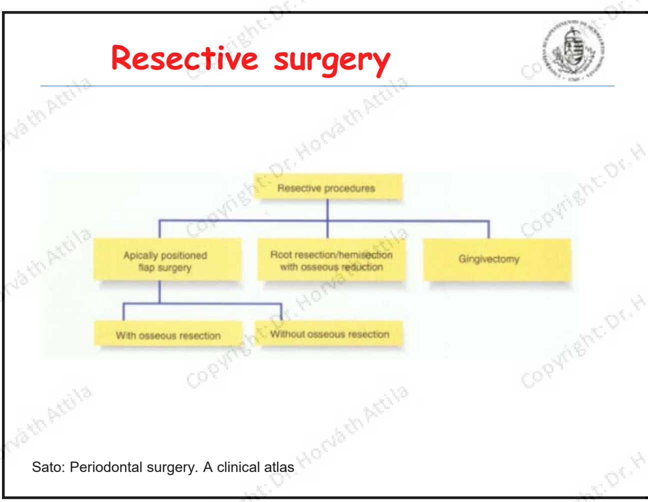


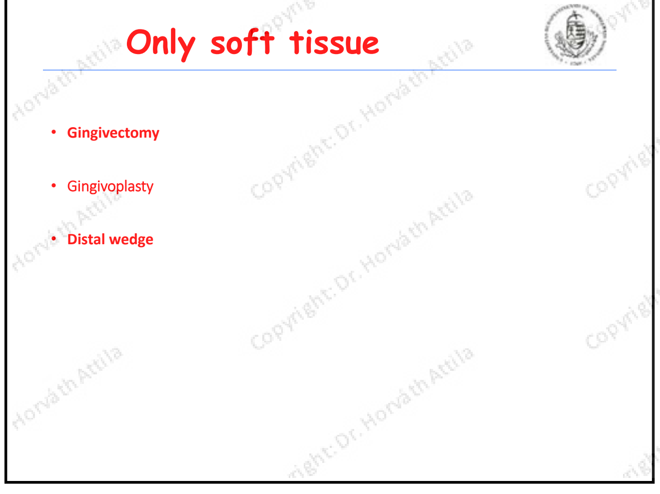
Resective surgery

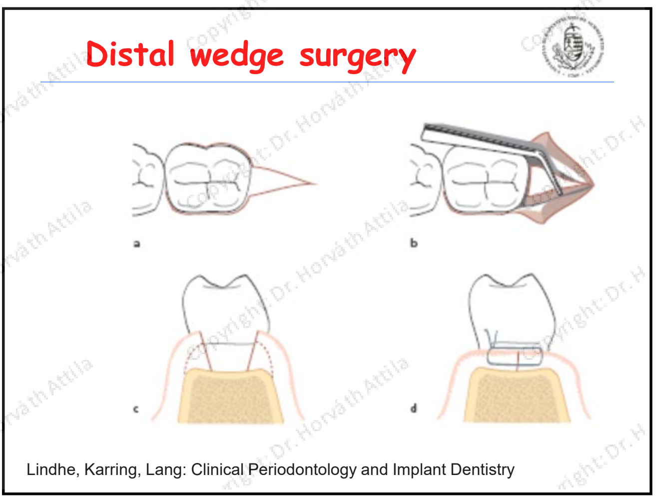
Table 1-8 Advantages and Disadvantages of Resective Procedures

Advantages	Disadvantages
1. Reliable	1. Attachment loss
2. Short term (8-12 weeks)	2. Root exposure, compromising esthetics
3. Obtain gingiva-alveolar bone morphology that facilitates easy maintenance	3. Strong possibility of hypersensitivity
	4. Strong possibility of root surface caries
	5. Possibility of phonetic impediment

Sato: Periodontal surgery. A clinical atlas







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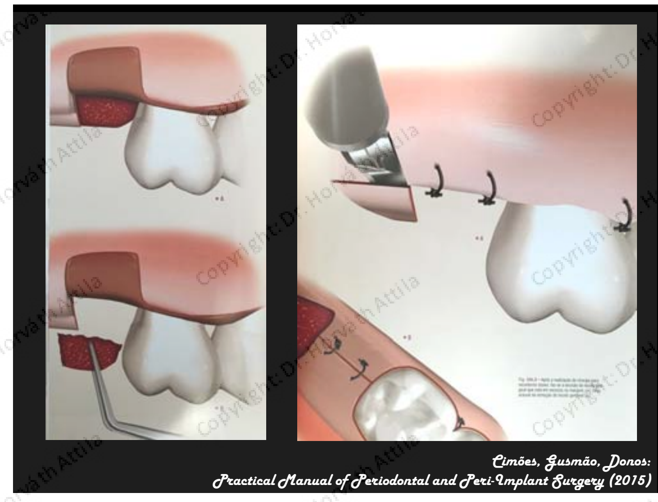
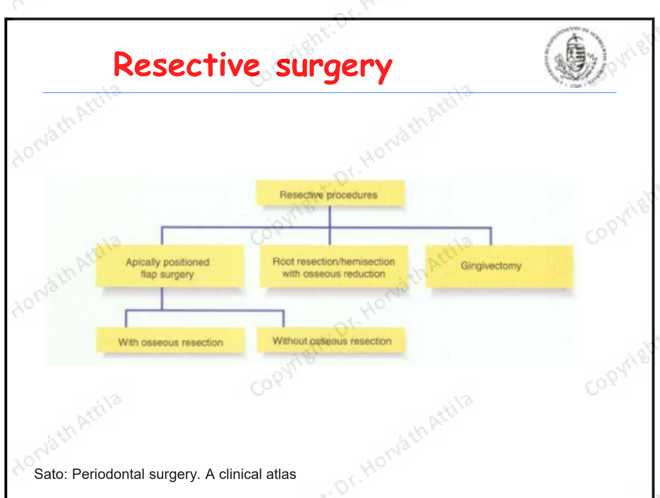
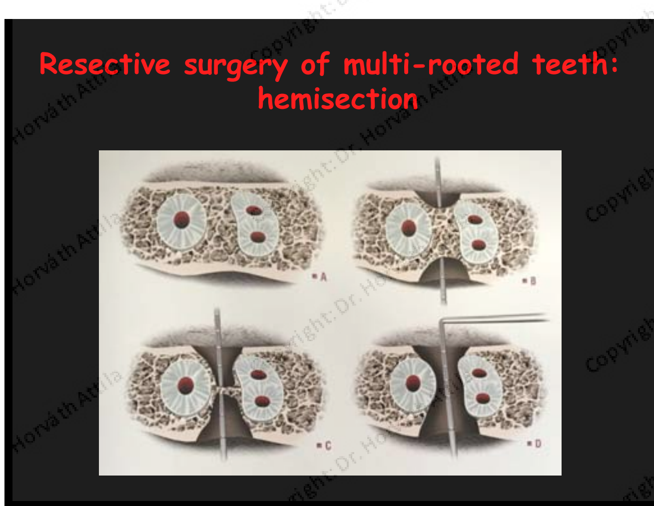
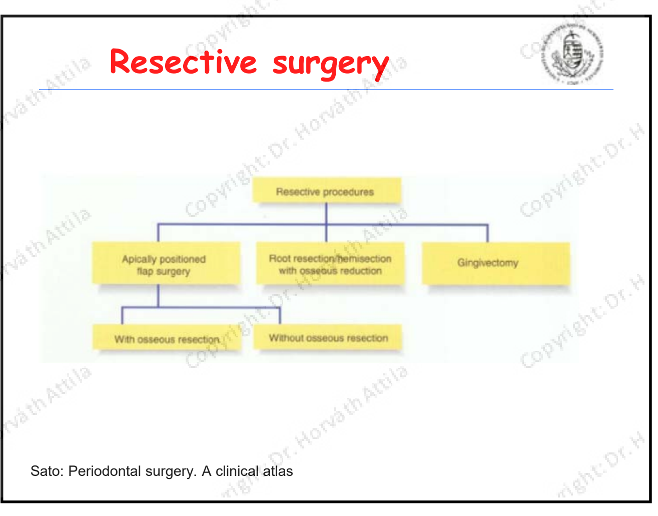
Cimões, Gusmão, Donos: Practical Manual of Periodontal and Peri-Implant Surgery (2015)


Cimões, Gusmão, Donos: Practical Manual of Periodontal and Peri-Implant Surgery (2015)


Resective surgery
Resective procedures
Apically positioned flap surgery
Root resection/hemisection with osseous reduction
Gingivectomy
With osseous resection
Without osseous resection
Sato: Periodontal surgery. A clinical atlas

Resective surgery of multi-rooted teeth:
Furcationplastic surgery


Resective surgery of multi-rooted teeth: hemisection


Resective surgery
Resective procedures
Apically positioned flap surgery
Root resection/hemisection with osseous reduction
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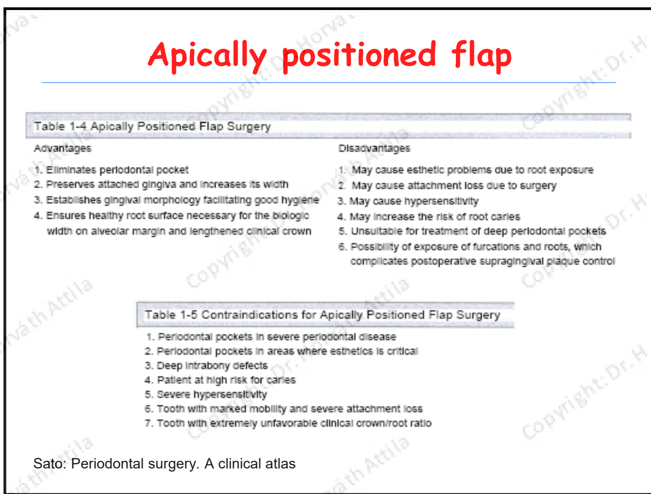
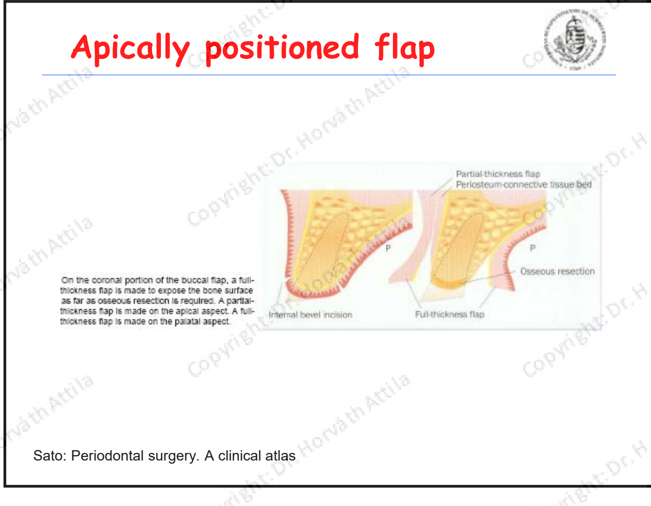


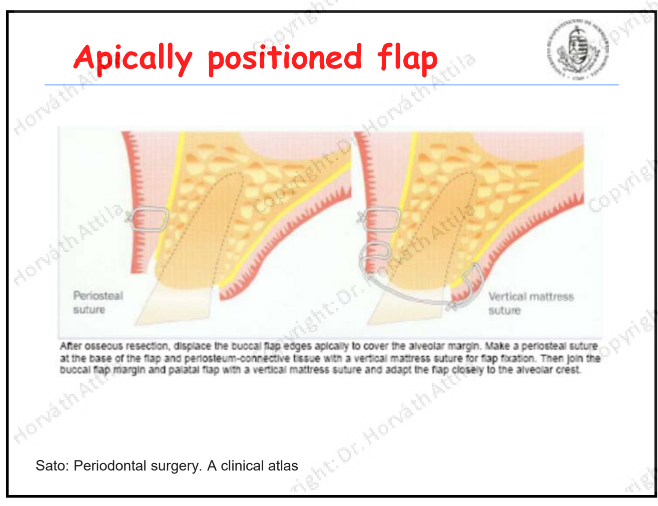
Table 1-4 Apically Positioned Flap Surgery

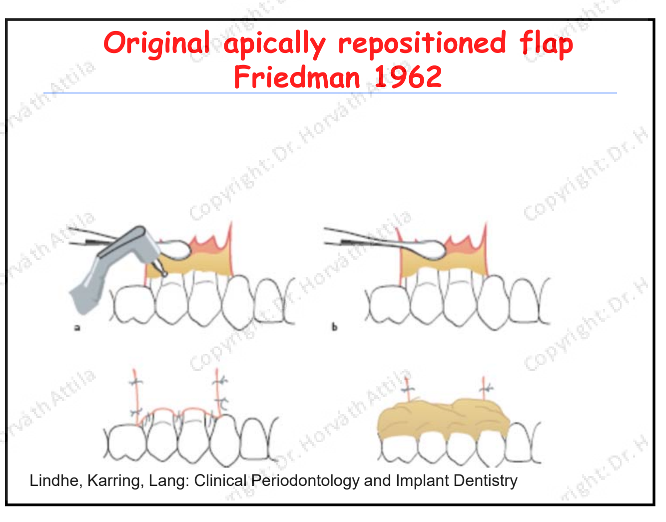
Advantages	Disadvantages
1. Eliminates periodontal pocket	1. May cause esthetic problems due to root exposure
2. Preserves attached gingiva and increases its width	2. May cause attachment loss due to surgery
3. Establishes gingival morphology facilitating good hygiene	3. May cause hypersensitivity
4. Ensures healthy root surface necessary for the biologic width on alveolar margin and lengthened clinical crown	4. May increase the risk of root caries
	5. Unsuitable for treatment of deep periodontal pockets
	6. Possibility of exposure of furcations and roots, which complicates postoperative supragingival plaque control

Table 1-5 Contraindications for Apically Positioned Flap Surgery

1. Periodontal pockets in severe periodontal disease
2. Periodontal pockets in areas where esthetics is critical
3. Deep intrabony defects
4. Patient at high risk for caries
5. Severe hypersensitivity
6. Tooth with marked mobility and severe attachment loss
7. Tooth with extremely unfavorable clinical crown/root ratio







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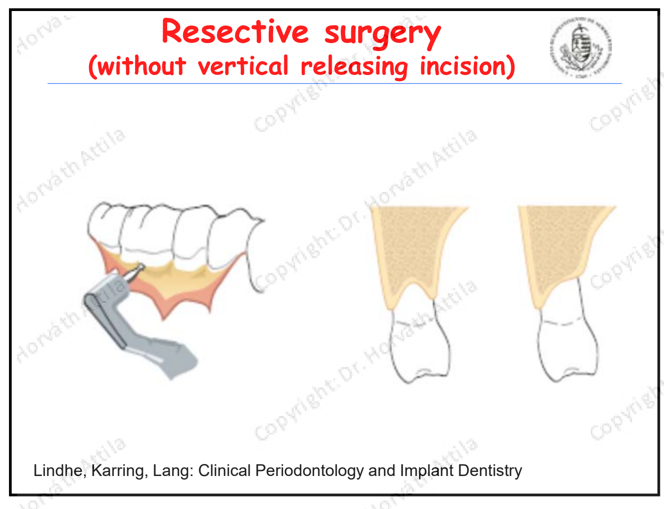
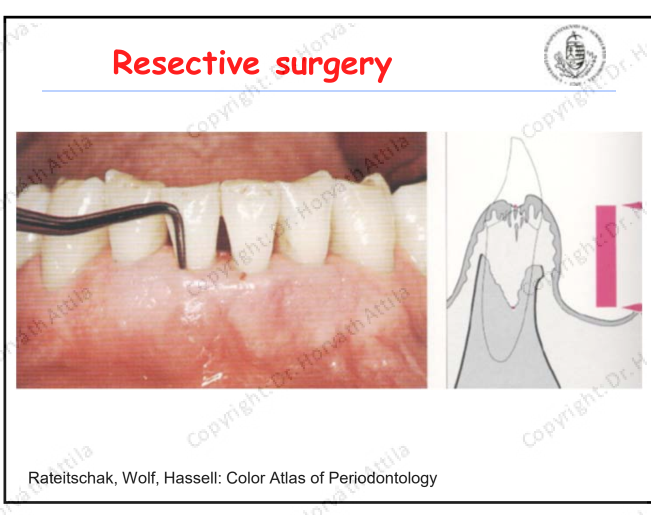
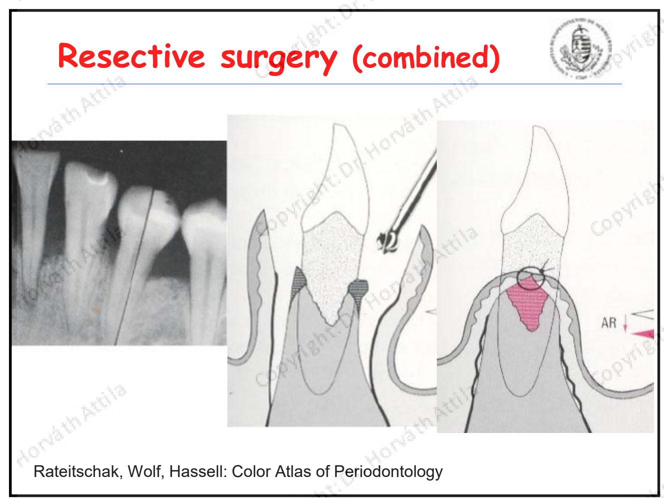
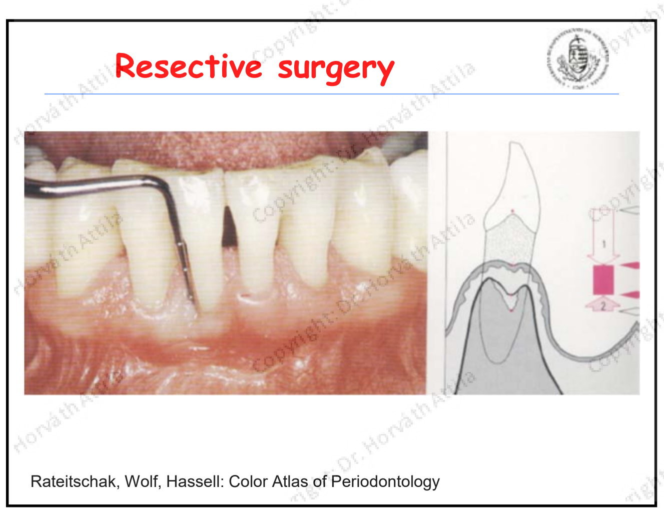

Resective surgery
(without vertical releasing incision)
Lindhe, Karring, Lang: Clinical Periodontology and Implant Dentistry

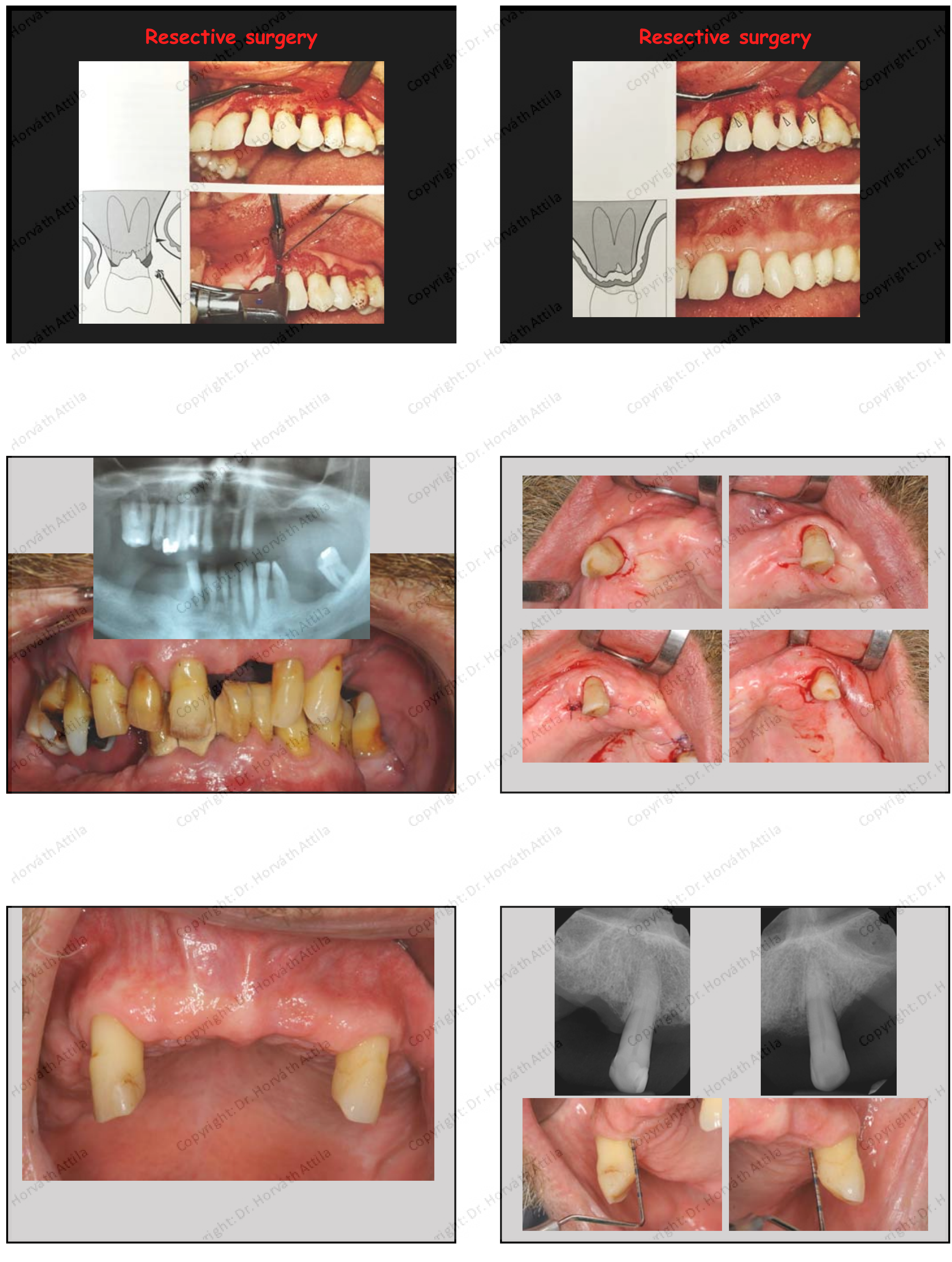

Resective surgery
Rateitschak, Wolf, Hassell: Color Atlas of Periodontology


Resective surgery (combined)
AR
Rateitschak, Wolf, Hassell: Color Atlas of Periodontology

External horizontal mattress suture


Resective surgery
Rateitschak, Wolf, Hassell: Color Atlas of Periodontology

Resective surgery
Without vertical releasing incision



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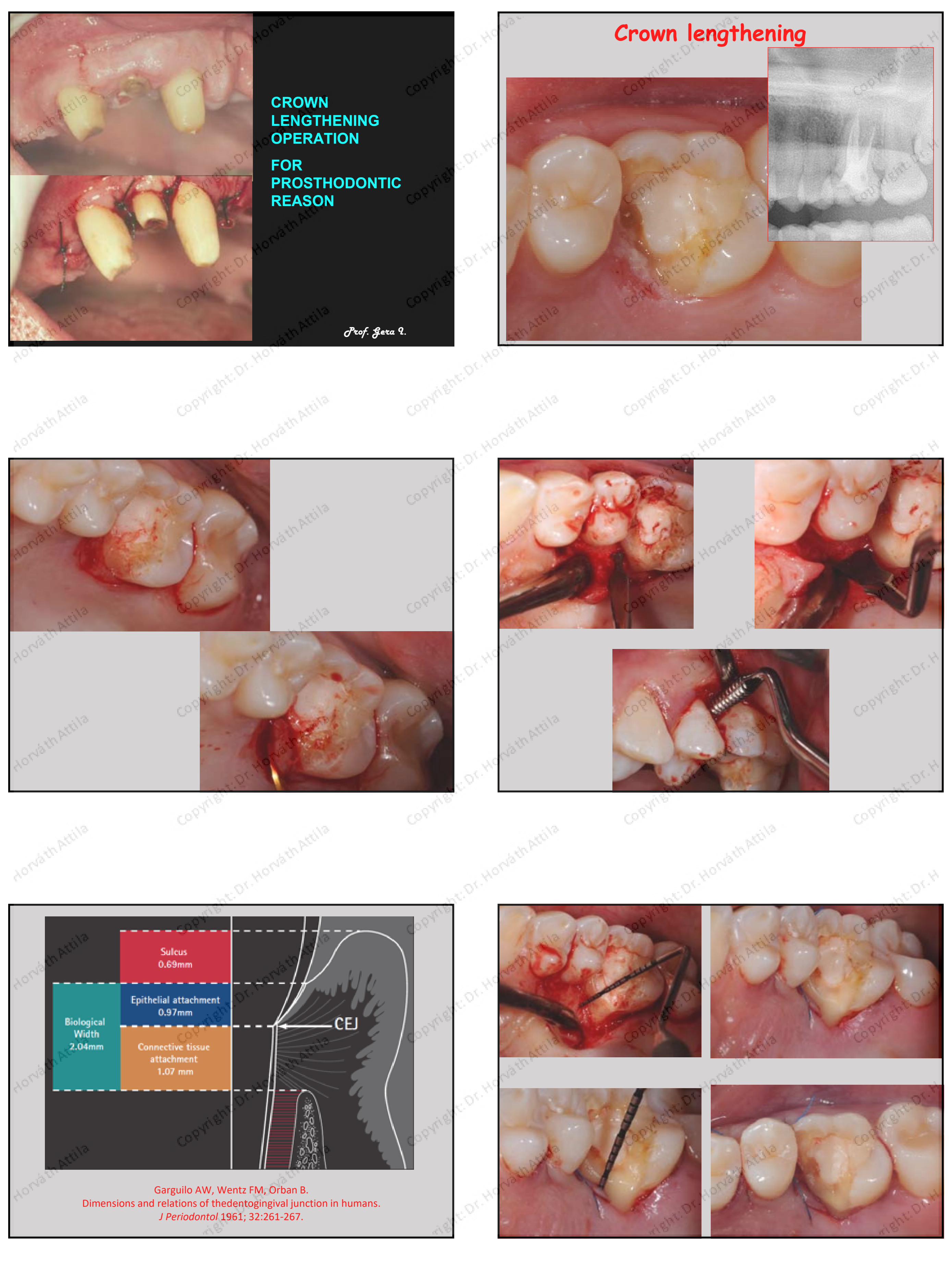

Garguilo AW, Wentz FM, Orban B.
Dimensions and relations of thedentogingival junction in humans.
J Periodontol 1961; 32:261-267.

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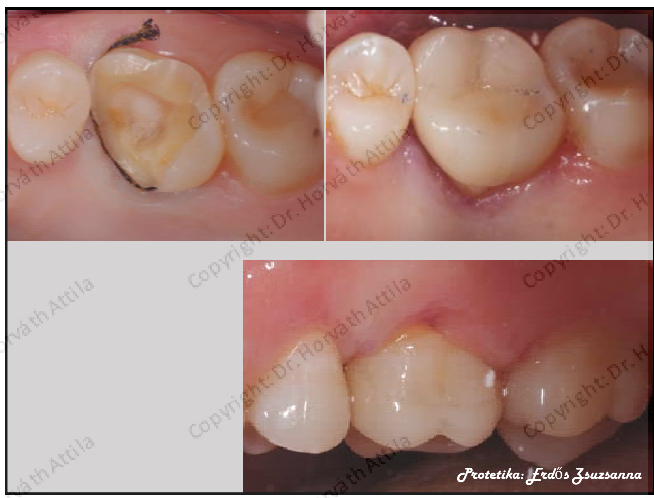

Summary

- Periodontal reconstructive surgery must be preceeded by non-surg Tx (RSD)
- Pt's OH and compliance must be satisfactory
- Patient must be informed on the available Tx modalities their side effects and the consequences of No Tx.
- Limits of regenerative Tx must be discussed as well as the potential need of a corrective resective surgery, if regeneration fails.
- In abscence of supportive defect morphology resective surgical approach shall be used.
- Soft and hard tissue correction may be necessary in order to facilitate self-performed OH.
- In case of narrow attached gingiva, thin biotype apical positioning of the MGJ shall be taken into account.
- Importance of the supportive care must always be highlighted