

Re-evaluation of non-surgical therapy
Periodontal Maintenance
Rationale for surgery

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Learning Objectives

- Discuss re-evaluation of a periodontal patient after initial therapy
- Discuss the factors considered in selection of non-surgical versus surgical periodontal therapy and criteria for selection of appropriate surgical therapy
- List the components and goals of a periodontal maintenance appointment
- Describe the evidence and rationale for periodontal maintenance
- Discuss the goals of surgical periodontal therapy

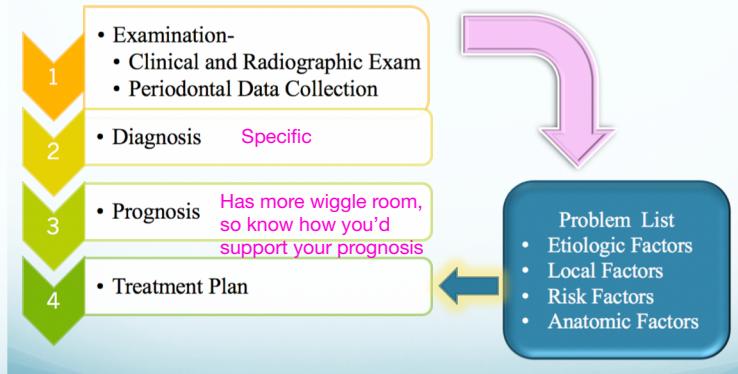
Discuss re-evaluation, we first start with nonsurgical therapy and then evaluate response and that is critical because making critical decision at this time and then you discuss whether to continue with non surgical therapy or move on to surgical and there are very spseifici conditions and criteria or what works and stuff
Very critical

When you walk into periodontal surgery

Talk about all possible surgeries and then get in depth informationn

We will talk about the goals are this is overview of perio surgical therapy you will get more details later

Treatment of Periodontal Diseases



Re-evaluation after initial treatment

- Evaluation of response to non-surgical periodontal therapy
- Usually 4-6 weeks after completion of therapy 4-8 weeks is acceptable;
12 weeks too late (plaque buildup, etc)
- Periodontal assessment –
 - Pocket Depths and CAL
 - Gingival Inflammation
 - Oral Hygiene (Plaque and Calculus)
 - Caries Control, Defective restorations



1:

Come up with treatment plan, after examination, diagnosis, prognosis, you talked about prognosis last week, again with that we also develop a list of local factor risk factors etiological factors, anatomic factors and we will address in the treatment plan, in treatment plan we talked about the rationale of non surgical therapy so we assume that has been done and patient comes back for re-evaluation

2:

He briefly touched on that but we discuss today in more detail

So this is the pre op image for same patient from last week and this is how he presented at time of re-evaluation, again its evaluation of the response to non surgical therapy, he would emphasize that understand that this is a very critical appointment this happens in real life, in private practice, so many times he sees that presented to the patient as if that is optional, the patients do not understand the importance of this appointment and its sometimes perceived that just because academic setting, teaching setting that is why patient is coming back so don't present it like that, present it as we will see how this therapy worked, see what needs to be done moving forward, what additional treatment might be required, so that's what the gist of this appointment is

Many times the patients don't show up when re-evaluate what timely care you are providing which is a graduation requirement, are you seeing patients back for re-eval many times it doesn't happen and we hear that patient did not show up so make sure that you present it right, usually don't 4-6 weeks after completion of initial therapy so one question can be when exactly you might be doing quadrant of SRP at a time or 2 at a time so from the last SRP quadrant that you do we can look at the timeframe from that time, this is a question usually gets asked on the floor, so last week he also said this appointment can happen anytime from 1-3 months to 4 weeks to 12 weeks so less than 4 weeks we do not want to probe the patient back, the tissues have no healed at that time yet and so a dn we don't want to go over 12 weeks and we will see the reasons today so anytime between that but typically 4-6 weeks after initial therapy is completed, what are we doing in that appointment, essentially full perio charting, pocket depth, CAL, gingival inflammation, oral hygiene, caries control, effective restoration, so if you had overhang restoration those have been addressed for the most part so we evaluate response and do same thing you did during examination essentially

**Re-evaluation after initial periodontal therapy is
usually done _____ after initial therapy
(SRP).**

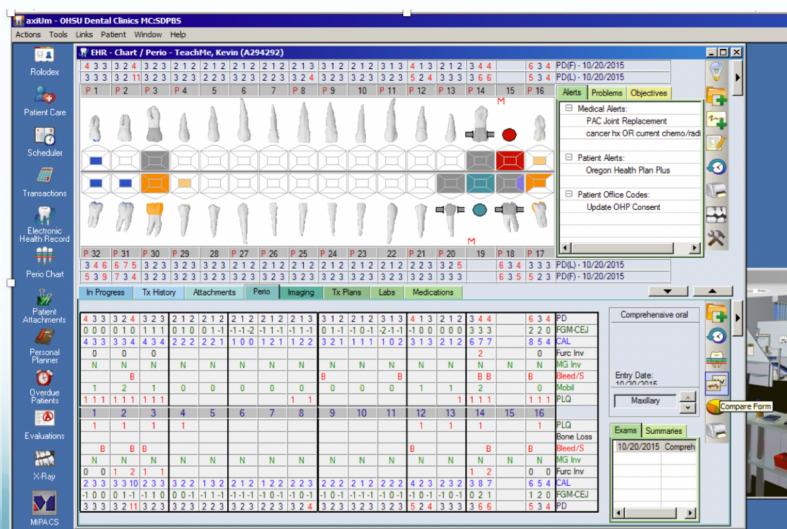


You see similar questions in final exam

Re-evaluation after initial treatment

- Assess changes in periodontal parameters – Expected changes
 - Elimination of some lesions entirely
 - Reduction of inflammation and firm gingival tissue
 - Reduction of Probing depths by 1-2mm (on average)
- Gives time for patient education

Tailored instructions for each pt
on what you expect them to do
better



Find a “teach me” patient
“Compare form”

1.

So we assess changes in perio pattern, not only doing same thing as examination but also have second data set to say the least, you might have patient might have previous examination, previous data, remember everything is relevant, you should get excited when you have a patient who has been coming here 5 years, you have all that additional information, it might seem burdensome but its really quick to review that and we will look at ways to do it quickly so

What do we expect to see?

We expect some of the lesions by that lets say you have deeper pockets depth, we expect those to be completely eliminated by initial therapy alone, in general we expect reduction of probing depths by 1-2mm and that is on average, teh deeper the sites, you may expect more reduction of pocket depth and don't be surprised if we see 3-4 mm reduction especially when you have a deeper pocket starting 7-8mm things like that

Reduction of inflammation in general, more firm tissues, and these are some images we looked at last week so those are some of our goals and then again every single time we see the patient that's your opportunity for patient education, oral hygiene instructions should happen every single time, our recommendation is at this time you disclose the patient, evaluate the plaque contral, home care, and give them tailored instructions on which exact sties they need to focus on and things like that

2.

So this is a teach me patient from axiom, so he suggests go in, pull up one fo these patients and do what he will show now

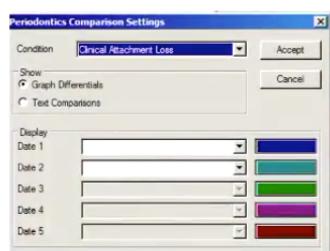
This is Kevin? Teach me patient

At the time of re-evaluation lets say you got the data, again we looked at any single quadrant or arch, we have the probing depths, FGM CEJ, CAL is calculated, furcation involvement, mucogingival invasion, bleeding, suppuration, mobility, plaque and all those

Then what we do is on the right side here you have compare forms where you see the bar graphs

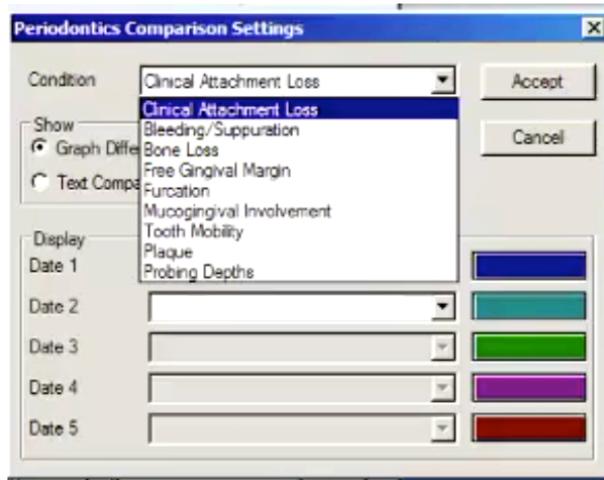
So we click on that and when you do that this screen comes up

"Compare form"



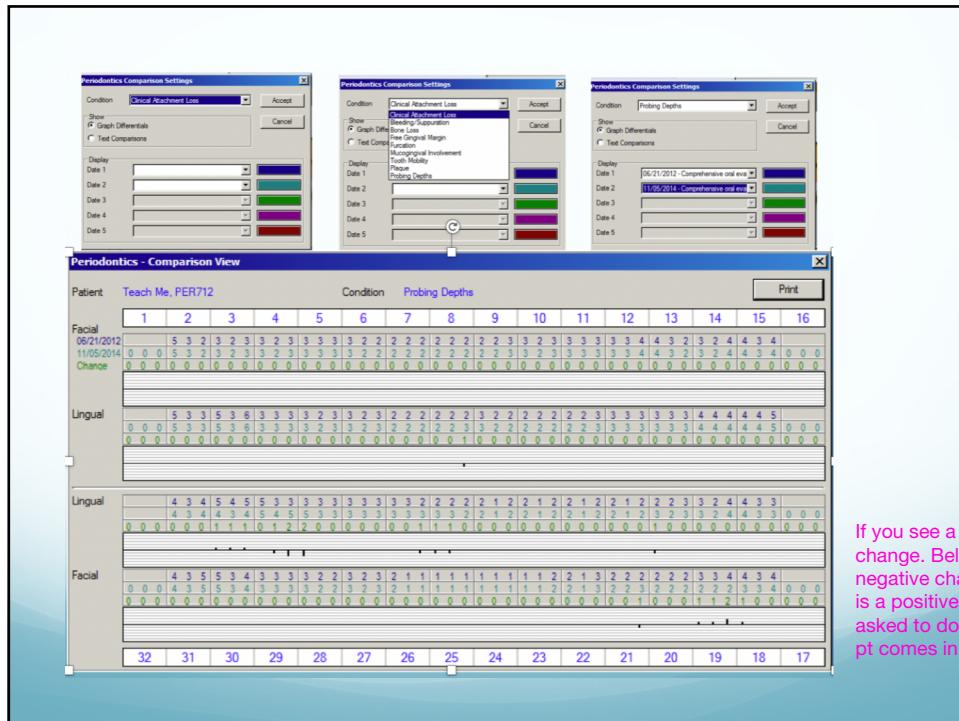
And its going to say periodontitis and perio setting and condition

Condition is in this case clinical attachment loss, when you click on the arrow it gives you a dropdown menu and it has you can compare all any of these factors that you see



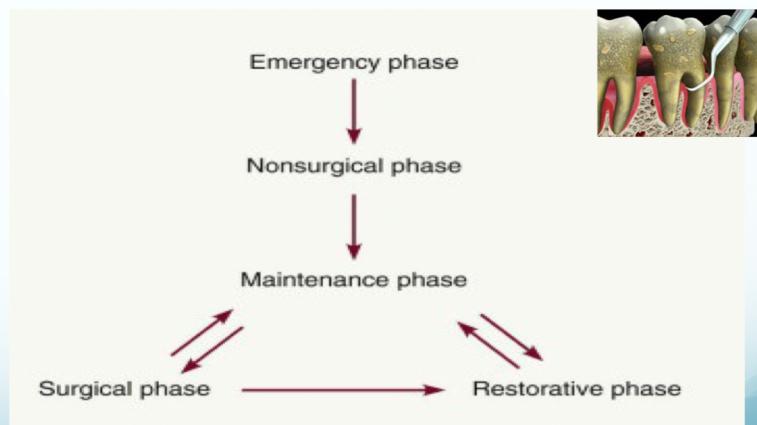
The most critical one that he wants us to do is probing depths so we choose probing depths and we choose the dates, 1 and 2 and at this time interestingly it lets you only do 2 dates but we work on and see if we can add more dates

You can do whichever you want it, his philosophy is to do before and after because then you know exactly how to read the chart, if you do it after and before the graph is going to just reverse



If you see a dark link there is a change. Below the line is a negative change, above the line is a positive change. Will be asked to do this for Dr. Seghal if pt comes in

Sequence of Periodontal Therapy



1.

So if you say okay accept that it gives you something like this, the before data and after data and the change and you can look at this line here and the bars top or bottom, anything underneath that line is a positive change and above that line is a negative change so for example, oops opposite, anything above is positive change, below line is negative change so for example we have a 5mm pocket that became a 4, you see 1mm and each of these horizontal lines is a mm so that also gives you how much change has happened so you can really quickly see how many changes, remember if you don't see a bar that means no change, if you had 8mm and it stayed 8 that means no change, not necessarily good or bad

Obviously if you see a lot of lower graphs of bars that means that is a negative change, we had 3mm pockets and they are 5mm now, so what do you anybody can guess what might have been the reason for that?

3mm and now 5? After evaluation

Didn't follow home care could play a role but isn't the main one probably

Plaque control is good and you did a good job of non surgical therapy

What local factors can you think about?

Calculus so lets say when you did the initial examination we have subgingival calculus which is true a lot of times so your probe was resting right on the calculus, and your initial data was not accurate because we were resting on the calculus, you got data initial therapy you cleaned the calculus now you getting a deeper measurement, and that is not an infrequent finding so you have to see if you did a good job in your initial therapy then you removed all the calculus and sometimes might see deeper pockets, it becomes significant if this is generalized, the whole mouth sometimes patients have subgingival calculus deposits throughout and sometime we question is your data even accurate so many times what he recommend is at the time of when doing initial therapy anesthetize that quadrant, do your SRP and then get your data just for that one quadrant, not adding too much work and then do that as you finish SRP that will be your true accurate baseline data

So otherwise just put a note in your chart when you do initial exam say data might not be accurate due to consistent or multiple sites of subgingival calculus

Q: at what point do you do full mouth debridement instead of SRP

Full mouth debridement is code D4255? Besides SRP so that is indicated if we have full mouth deposits supra gingival deposits that we cannot complete an examination even because before we jump into treatment you will finish periodontal examination, restorative evaluation, extra oral and intramural examinations and many times or sometimes you will see patients who have so much plaque calculus deposits you just cannot finish your examination even not done very commonly but recently had some cases a lot of students having

In those cases we will do full mouth debridement and that is nothing to do with sub gingival deposits, just cleaning up tooth surface teeth surfaces and completing your examination that time and then proceeding with whatever therapy is indicated

So we get that idea and that will get you a pretty decent overview he highly recommends everyone do this at time of re-eval and see for yourself what changes have been there, but also pay attention for example he had a 5 and that stayed a 5 so don't go only by the bars but also look at more closely what sites have not changed

During the periodontal re-evaluation

appointment, only the sites with initially deeper probing depths should be probed.

True **A**

False **B**

False

So when we do re-eval appointment do we probe whole mouth all sites or if SRP was only done one quadrant do we probe that one quadrant only?

Why would we probe the whole mouth? Lets say the SRP was only for 2 quadrants, do full mouth data and also continue discussions of one more factor, one more reason for that we will talk about it so we are all right about this

2. Again so as we are at the non surgical space and somewhere here is the periodontal re-evaluation which is considered part of the non surgical phase evaluation of therapy so now we are going to move on to which direction we go, do we do maintenance, do we do restorative phase, are we good with surgical do we need to go to surgical phase, we make that decision

Periodontal Maintenance Supportive Periodontal Therapy (SPT)

Periodontal patients must be placed on a schedule of periodic recall visits, after Phase I therapy is completed, for maintenance care to prevent recurrence of the disease

Once a perio pt; always a perio pt
Commonly 3mo intervals @ OHSU

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What does a periodontal maintenance visit entail?

Box 69-1 Maintenance Recall Procedures

Part I: Examination

(Approximate time: 14 minutes)

- Patient greeting
- Medical history changes
- Oral pathologic examination
- Oral hygiene status
- Gingival changes
- Pocket depth changes
- Mobility changes
- Occlusal changes
- Dental caries
- Restorative, prosthetic, and implant status

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At school, every pt needs to be fully charted 1/yr
If perio maintenance, you could just chart for
localized deeper pockets (PD); ask staff. Is it
becoming stable or worse?

1.

Periodontal maintenance by definition is the patients must be placed on a schedule or periodontal periodic recall visits for phase 1 therapy is completely for maintenance care to prevent recurrence of disease

So every single perio patient you see, we do initial therapy SRP we put patient on periodontal maintenance, whether the patient is ready to be put on maintenance or additional therapy is required, surgical is required, that is a decision we have to make but everybody will be on periodontal maintenance for forever

Regular periodontal maintenance is rarely required after completion of non-surgical and surgical periodontal therapy.

True **A**

False **B**

False it is always required

2.

So what happens in recall , maintenance appointments

This is boxes from Caranza because it lists the changes the factors pretty decently so examination is about 14 minutes, again obviously in pre doc clinics you have good 3 hours to do but in real life its about 1 hour appointment give or take 40-45 minutes

So read the patient medical history, oral path exam, oral hygiene, gingival change, pocket depth, mobility, caries, restorative factors like we talked about

What does a periodontal maintenance visit entail?

Box 69-1 Maintenance Recall Procedures

Part II: Treatment

(Approximate time: 36 minutes)

- Oral hygiene reinforcement
- Scaling **Localized SRP as needed**
- Polishing
- Chemical irrigation or site-specific antimicrobial placement

Part III: Report, Cleanup, and Scheduling

(Approximate time: 10 minutes)

- Write report in chart.
- Discuss report with patient.
- Clean and disinfect operatory.
- Schedule next recall visit.
- Schedule further periodontal treatment.
- Schedule or refer for restorative or prosthetic treatment.

Plaque control must be reviewed and corrected until the patient demonstrates the necessary efficiency, even if additional instruction sessions are required.

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Perio maintenance vs prophy:

- localized SRP on deeper sites; get the root surfaces

Perio re-eval vs perio maintenance discussed above

Management of Patients with Generalized Severe Periodontitis (*Generalized Stage 3-4 Grade B-C Periodontitis with the current disease classification*) with Periodontal Therapy and Regular Periodontal Maintenance

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1.

And then the treatment aspect is about 36 minutes, the reason he is kind of talking on minutes as well because end of the day everything is going to translate to how much time is needed so we don't bill by time but its indirectly related to time, if you need more time, say you have a patient or maintenance and patient has plaque all over, deposited all over tats the time you decide I will redo the initial therapy, and that means very significantly for the patient cost is going to be couple times, cost of maintenance but again it is driven by the need

So you do OHI scaling and localize therapy because after SRP initial therapy you might have some sites that are localized deep pockets, 4mm, maybe some 5mm as part of periodontal maintenance we do localize SRP if we need to anesthetize that is okay, so we not redoing therapy SRP as a general rule for the most part the only exception is when you decide to do unless the therapy did not work even if the patient did not have great plaque control we still put patient on maintenance and work on their home care we will not redo initial therapy that has more implications lets say from insurance standpoint they will cover once in 2 years or 3 years maybe, so if you charge patient over \$1,000 treatment and ti didn't work and you redo it eventually you will have a problem so its critical that we have decisions that are supported by evidence and those are just decisions

Polish if needed and we talked about irrigation or antimicrobial placement again that is all part of maintenance and then again finish things up rite your report and things like that

**Periodontal maintenance visit frequently requires
surgical management.**

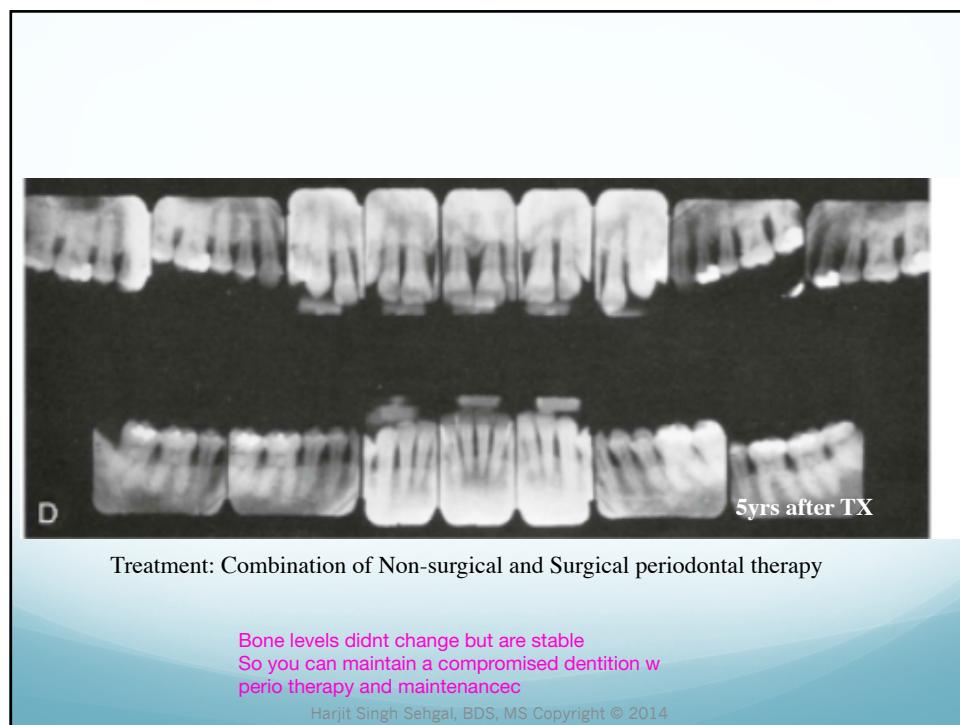
True **A**

false, the patients may need surgery but that is not going to happen during the maintenance appointment that's a very specific and the boxes kind of show you why that would be the case, again during maintenance we are going maintenance not doing surgical therapy

False **B**

2.

Now going to look at couple clinical cases and how those were managed so this case is generalized severe periodontitis patient with periodontal therapy, regular periodontal mainenance



1.

Images are from the textbook

Not great images but its good data

Longitudinal follow up of the patients

We can appreciate that this is how patient presented with a lot of local factors similar to other case we looked at, a lot of gingival recession, local factors, extreme amount of inflammation, again that is also translated to the patients radiographic bone loss we have seen quite severe bone loss if you saw patient like that we can expect to see good amount of mobility on the teeth, what would you be thinking?

Most providers would say we need dentures

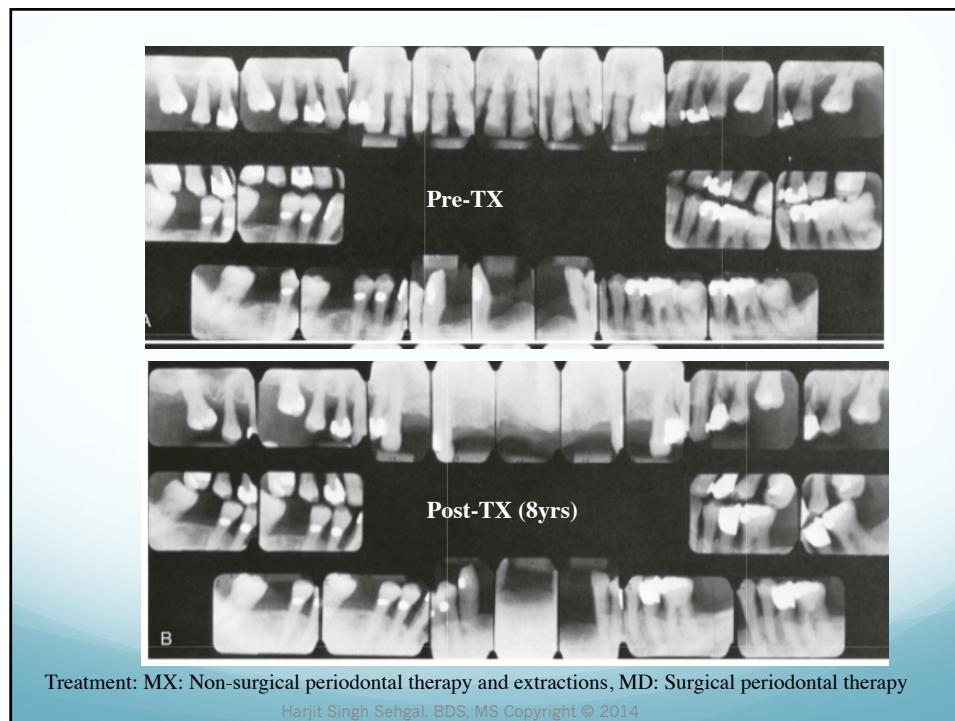
Now he wants us to pause and appreciate what you can achieve with periodontal therapy, with implants and what not, he thinks there's a lot of aggression about yanking things out but if there are indications we can do a lot over a long time so these are very strong images very well don't cases, before implants this was the routine, periodontist was actually being a periodontist sand saving teeth

2.

So the treatment was combination of non surgical and surgical periodontal therapy

This was 5 years after treatment

Look at images and appreciate where bone levels are, its amazing that all those teeth are still there even with the similar bone levels you can appreciate the dense bone density the radiopacity has increased so the inflammation reduces and over time you can see that bone again you can regenerate that



1.

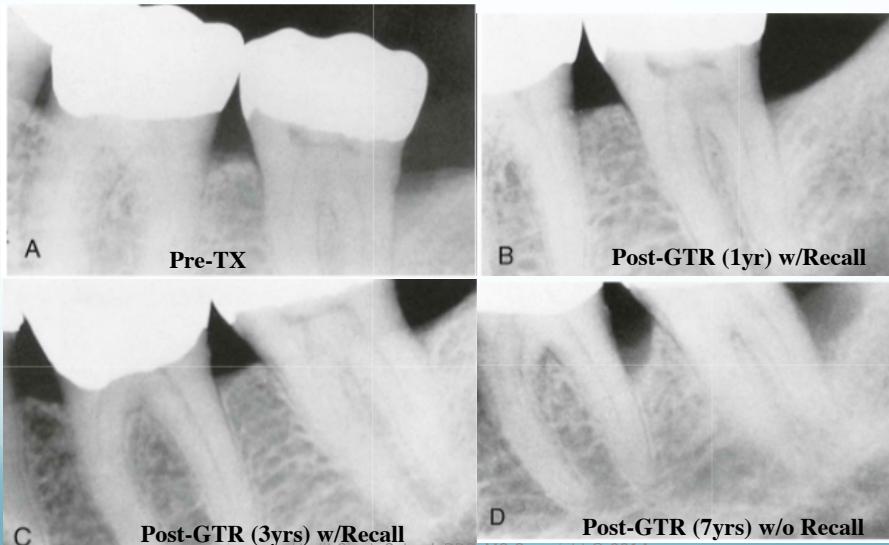
And this is 10 years after treatment, the second molar is gone, rest everything is maintained, this is really something that you should pause and appreciate just for nonsurgical and surgical therapy this is pre treatment this is 10 years post treatment patient has that dentition there is still some inflammation pretty minimal though but again you can retain that dentition quite dramatically and that quite significant only thing done is non surgical and surgical we will talk what that might have entailed

2.

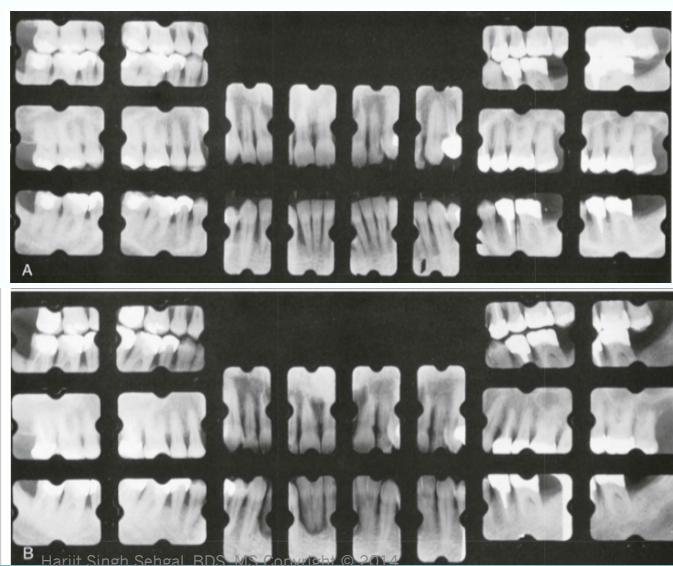
This is another case and again you can appreciate how many local factors, a lot of sub gingival calculus deposits, again these front teeth are missing already and 8 years out patient has lost maxillary anteriors so the maxilla the treatment is non surgical therapy and extractions only, mandible the patient had surgical therapy and that's about it 8 years out

So don't forget these cases in your practices when you see these patients, the quality of therapy he can not emphasize enough that is the bottom line, its critical but you will see responses, he can almost guarantee that he does guarantee that in his practice

Treatment Outcomes with and without Periodontal Maintenance



Disease Progression without Recommended Therapy and Periodontal Maintenance



1.

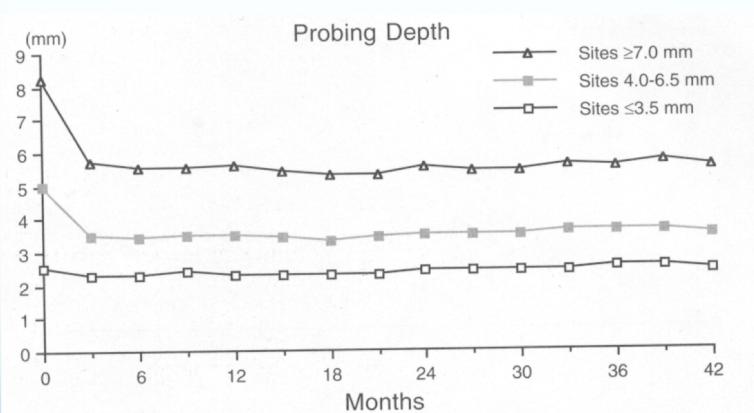
So lets take a look at with and without periodontal maintenance, lets say you did initial therapy and this patient we have a large defect that you can appreciate here, there is radiolucency here without clinical data you can assume there is definitely something going on radiographically at least

Guided tissue regeneration one year with recall again can see how well that is filled and that radiolucency is looking pretty back to normal so that's pretty good outcome, three years with recall and then inevitable happens, patient lost tract and patient lost recall again you are seeing new defects coming in and you are seeing the loss of the grafted bone so that's why periodontal maintenance is absolutely critical after a periodontitis patient needs to be maintained, we can maintain pretty well but if you don't then we can expect to have the disease re emerge

2.

So another case, disease progression without recommended therapy and periodontal maintenance and this case its a bit difficult but he would suggest take a peak at any one quadrant and then compare across these two images So for example lets say the lower anterior look at how the bone levels are and look at here, so the bone loss has progressed and similar changes you can see he doesn't remember exactly how many years apart these radiographs are, these are also from textbook, so take a look at any given quadrant and see how the bone loss has progressed, he has looked at it closely it has progressed every single quadrant so if a patient is not maintained or we do not do initial therapy the disease will progress

Disease control with SRP & effective SPT

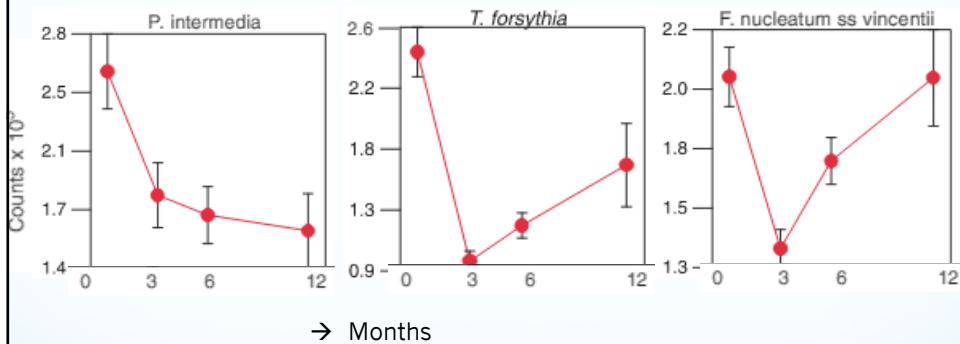


Egelberg and Claffey, 1994

Able to maintain health w/ non-surgical therapy for 42 months

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Need for regular SPT interval



Haffajee et al, Perio 2000, 2006

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1.

So now this image has extreme amount of information, bottom line messages for us so look at it and listen closely Disease control, this is a study done by these people in 1994, disease control with SRP and effective SPT, supportive periodontal therapy another word used for, its periodontal recall, periodontal maintenance just a different terminology

So the pockets this is on average, looking at months here the depths of the pockets so the pocket started with 2.5 and 3mm, they were maintained over 42 months, 3.5 years that is the strength of the study, so the obviously the shallow pockets can be maintained, the periodontal recall is happening every three months so each of these individual lines is 3 months, the pockets were 5mm to begin with got down to about 3.5 and they were maintained all the way along, this is significant, now look at that, the pockets that were 8.5mm to begin with reduced down to about 5.5 or 6 and they were maintained all the way along

So remember we say that for pockets that are this is just along with non surgical therapy, scaling and root planing no surgery done

With surgery we can get obviously results much more quickly, maintain those but again just with non surgical therapy alone we can maintain over a long period of time even with deeper pockets so what that means to us is when we see a patient who has deeper pockets you do initial therapy and see them back for re eval, non surgical therapy, periodontal maintenance will be an option when you present options informed consent you will talk about this as an option based on this data

Q: is the periodontal recall interval 3 months always or do we change it, it absolutely can be changed, in general you can stop at 3 months some patients may have very localized disease and say 4 months is appropriate, say you have a site with 4mm a couple sites with 4mm maybe one site with 5mm and there respond well and the patient has good plaque control, home care then yes 4 month even sometimes to begin with but in general what we see normally is 3 months and to keep up with that

Q; for the recall periodontal maintenance do we do prophylaxis or SRP?

How is periodontal maintenance different, he wants us to think about a different periodontal therapies, prophylaxis, periodontal maintenance, cross debridement, think about all those and how they are different and also scaling in the presence of inflammation

Those are very specific therapies , prophylaxis if preventive therapy when you don't have disease, scaling and root planing is active therapy

Periodontal maintenance is somewhere in between, we do prophylaxis yes but we also address we do localized SRP

If you go back a few slides, box 69-1, we do scaling but we do localized root planing as well for sites remember he said if you might have some sites with 4 or 5mm pockets and looking at the most recent data we were looking at, here so these sites may need localized root planing during periodontal maintenance so that's how root planing that's how periodontal maintenance is different than prophylaxis, so can we go back to prophylaxis? In very rare circumstances, sometimes insurance will say if you are a patient you can? do maintenance but again but again we have evidence supporting our decisions don't get carried away by insurance says we just have to give them justification and eventually they will agree

So if you have a general dentist reviewing the insurance cases sometimes you just need to give them the evidence and say this is what we doing and they are usually receptive

2.

Q; if we have what is the upper limit if you have for example in last slide we have 8,9mm pockets that is difficult question because its not only pocket depth, you have to visualize this is 3D what's happening at that given particular site, do we have a vertical bone loss at that vertical bone defect at that given case? In that case we talk about shortly that the appropriate therapy for that patient is regenerative therapy

We will see how that responds, now remember most of the deeper pockets many times you will see round multicoated teeth with furcation involvement those are the sites where you cannot expect the non surgical therapy along to work even surgical therapy is dicey so in that case we do get definitive outcomes with surgical therapy but you will learn about that. A lot in this course but it depends but he can say as rule of thumb we will start with non surgical therapy no matter what pocket we are starting with

Q: so we do root planing on sites that are 8,9mm pockets?

This you will be tested on, this very specific question, it will be on the final exam

So what is the answer?

Do we root plane 9mm pockets?

Yes so your evidence is right here(previous slide) so not matter when we say the SRP is not effective after 6mm that means that it might will likely not resolve that deep pocket but its still reduces inflammation, still reduces local factors so still going to be initial therapy to begin with, whatever pockets we are starting with and then re eval and determine what next steps are going to be

Q: we do re eval then start the 3 months?

The 3 months in reality should start from the last SRP appointment, so you will in terms of logistically you see them for evaluation 6 week you are seeing them for periodontal maintenance,

Where do we start clock from? From re eval or SRP? It should be from the SRP appointment, in any case its give or take 2 or 3 weeks here and there but ideally

2.

So this slide does not have a lot of detail but see here, so we are looking at some of the periodontal bacteria, some pathogens, so what happens is these are counts in thousands, what we are seeing is any given site, pre intermedia is 2.5 thousand and you do SRP and you see the patient for 3 month appointment, the levels decrease significantly and they along the time of your SPT, maintenance, the levels continue to decrease, but *forsythia* actually decreases and then the levels start to increase over time

Same thing for *F nucleatum*, that being the bridge bacteria its significant we know periodontal pathogens numbers start increasing at 3 months time, that's why this is one of the rationales why 3 months why not 4 months and things like that, its a difficult question it may vary from patient to patient and depends on the amount of disease we have, sites we have and complexity in general

But this is the evidence from microbiological standpoint of view that the bacterial population specially the pathogens are going to start increasing

We know the at the time you finish your prophylaxis or SRP you are going to see slowly the bacteria will start building up back again the plaque biofilm you learned a lot about that so it starts with pellicle and starts building up the pathogens come in the picture at about 3 months so that's why its critical we kind of knock them off at that time and maintain health

Periodontal Maintenance

- Successful treatment outcomes can be achieved with SRP, Osseous Surgery and Modified Widman Flap Surgery and can be maintained with regular periodontal maintenance over 5years. Becker et. al, 2001
- Complete compliance to periodontal maintenance reduces tooth loss among molars and minimizes bone loss among non-molar teeth over 20years.
Miyamoto et.al., 2010

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Sequence of Periodontal Therapy



1.

So the successful treatment outcomes can be achieved with SRP afosseouster surgery, modified Widman flap surgery and can be painted over period of 5 years and we looked at also that SRP and periodontal maintenance that can be maintained for at least 3.5 years we looked at that before

Completely compliance of periodontal maintenance reduces tooth loss among molars and minimizes bone loss among non molar teeth for 20 years so again we have looked at some cases where 10 or 8 years out those cases were maintained really well with just non surgical therapy and or surgical therapy

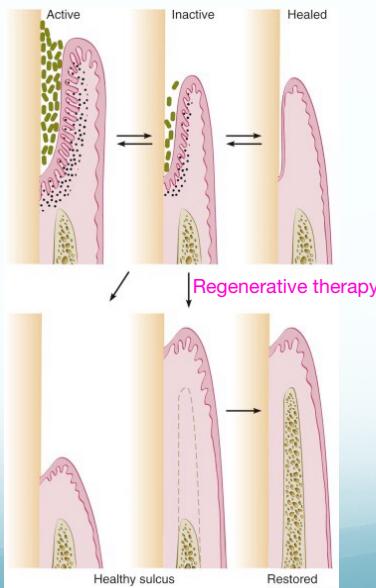
So compliance is a very specific term for periodontics, we will discuss that right after the midterm what that means and how do we look at compliance what are the predictors but for today as long as the patient is attending, coming for the maintenance appointments those teeth can be maintained

It is a flap surgery, lets say for now its one of the surgical therapies that dr Califano will talk about next week but will also look at , its a flap procedure as we talk bout surgical periodontal therapy we do differet kind of flaps and this is one of the flap surgeries

2.

So now we. Moving on to lets start with

Results of Pocket Therapy



Non-surgical vs. Surgical Therapy

- Individual probing depths are not good predictors of future clinical attachment loss.
- The absence of deep pockets, however, is an excellent predictor of a stable periodontium.

Greensteifl, G, 1997.

1.

This image first as far as different treatment modalities

So in this cartoon we have a deeper pocket and there are bacteria there is inflammatory response, there is bone loss, and we do initial therapy, the bacteria reduce, inflammation reduce and healing happens by long junctional epithelium, we discussed that last time so this is your non surgical therapy and surgical therapy we can do respective therapy, get the pocket down to the base of the pocket and that's what we get, or we could do regenerative therapy and regenerate the bone, regenerate the PDL, cementum, and we have restored periodontium which is going to happen only with your periodontal regenerative surgery

2.

So now let's talk about what are the different indications for non surgical vs surgical therapy

So individual probing depths are not good indicators or predictors of future clinical attachment loss however if you don't have deeper pockets that is an excellent predictor of stable periodontium

Non-surgical vs. Surgical Therapy

Critical Probing Depths

- Sites probing \leq 2.9 mm lose attachment with root planing
No root planing for 3mm pocket
- Site probing \leq 4.2 mm lose attachment with surgery
5mm pocket - maybe surgery

Lindhe, J et.al. 1982

Non-surgical vs. Surgical Therapy

- Greater than 4.2 mm consider surgery
- S/RP not very effective after 6.2 mm

6.2mm pocket does not mean you need surgery
Therapy not as effective — can't get into bottom of pocket, in the furcation, etc

Stambaugh, 1981

1.

So critical probing depths is a criteria for terminology developed by Lindhe in 1982 what that tells us is that you have sites probing less than 3mm and we do scaling root planing we lose attachment if we have sites shallow that 4.2mm and do surgery we will lose attachment so those are bottom line when not to do SRP, when not to do surgery

Based on the concept of 'critical probing depths',
root planing at a site probing < 2.9mm will result
in ----- clinical attachment.



If we have site with less than 2.9mm pockets and did root planing will lose attachment, so B

2.

So greater than 4.2mm surgery can be considered however clinically terms at least 5mm deeper pocket, 4mm not doing surgery

SRP is not effective after 6.2 mm we talked about it but we still do initial therapy for those sites

Sensitivity

- Sensitivity (positive in disease)**

E.g. Hba1c = 7 = diabetes

Sensitivity is the ability of a test to correctly classify an individual as 'diseased'

Ranges from 0-1

- \bullet Sensitivity = $a / a+c$

= a (true positive) / $a+c$ (true positive + false negative)

= Probability of the test being positive when disease present.

	Disease present	Disease absent
Test positive	a (TP)	b (FP)
Test negative	c (FN)	d (TN)
	Sensitivity: $a / (a+c)$	Specificity: $d / (b+d)$
TP: True positive, FP: False positive, FN: False negative, TN: True negative		

Close to 1 = sensitive, but still may have

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2636062/>

Specificity

- Specificity (negative in health)**

The ability of a test to correctly classify an individual as *disease-free* is called the test's specificity.

Ranges from 0-1

Close to 1 = specific = very likely doesn't have disease

- \bullet Specificity = $d / b+d$

= d (true negative) / $b+d$ (true negative + false positive)

= Probability of the test being negative when disease absent

New test	Gold standard	
	Positive	Negative
Test +ve	75	15
Test -ve	25	85
Total	100	100
	Sensitivity: 75/100	Specificity: 85/100

<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2636062/>

1.

The concept of sensitivity and specificity, these are the more global terms used for how a test is going to be, how a test can detect individuals those who have disease that is the job of sensitivity if test is sensitive, he usually gives example of medical test, HB7C? So we say if you have 7C or more than 5.7 then you are diabetic or more than 6 you are diabetic and things like that so if a test sensitive and you have HP7C of over 6 and the patient is in fact diabetic that means the test is sensitive

2.

Specific is lets say HB7C is 5, and the patient is not diabetic for sure in fact and that the test is negative patient does not have disease, and the test will be highly specific

With what percentage we can do that in fact and you have these formulas just for understanding

New test, gold standard, if you have positive, test positive and the patient has disease and then again the sensitive would be 75% or 0.75 as we will call and again if 15 people have test positive but disease was absent in that case the test would be 85% specific

So look at that

Non-surgical vs. Surgical Therapy

Predictors for Attachment Loss		
We don't have sensitive tests		
Parameters	Sensitivity	Specificity
Plaque	0.4	0.6
Redness	0.3	0.7
BOP	0.2	0.8
Suppuration	0.1	0.9
PD>6mm	0.1	0.9
AL>6mm	0.1	0.9

Haffajee, Socransky, Goodson, 1983

Criteria for method selection

- Systemic considerations
- Overall diagnosis of the case
- Pocket characteristics
- Access
- Mucogingival problems
- Esthetic considerations
- Patient cooperation
- Response to Phase I therapy (SRP)
- Previous periodontal treatment

1.

The bottom line is we don't have any sensitive tests, everything is the closer we are to 1, the highly sensitive or specific we are so if any of these factors are missing, pocket depths deeper than 6mm, attachment loss more than 6mm, we don't disease but if this is present that definitely cannot necessarily predict future loss of attachment so look at that, bottom line is we don't have any sensitive tests, we do have many specific tests and again 0.9 more specific than 0.6

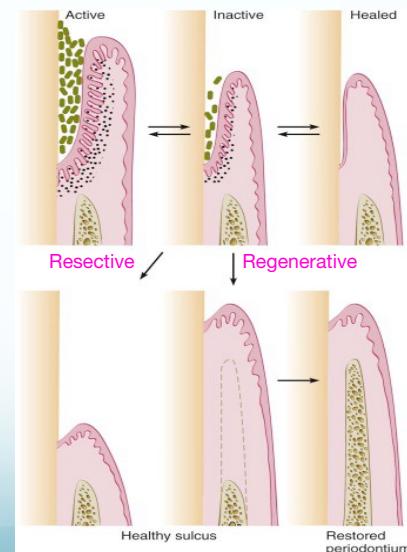
2.

So criterai for method selection are many

Again systemic considerations, patients systemic health is critical, overall diagnosis of the case, pocket characteristics, how deep the pockets are furcations involve or not, access if very critical for example if talking about furcation we don't have much access non surgically, mucogingival problems, esthetic considerations, patient cooperation, for example if patient has poor plaque control we are not taking that patient to surgery, response to phase 1 therapy and previous surgical treatment of periodontal teramtne tin general

Resective vs. Regenerative Therapy

- Resective Therapy reduces PD but may not improve CAL
- Regenerative therapy-reduces PD and improves CAL



Resective vs. Regenerative Therapy

Anterior vs Posterior

- Esthetics
- Conservative approach
 - Single rooted
 - Patient compliance
- Surgical approach
 - Papillae preservation
 - Sulcular flap
 - Modified Widman flap



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1.

Respective therapy will reduce pocket depth very predictively but it will not improve attachment levels, regenerative therapy is the only therapy that will improve CAL as well and we talked about this cartoon in a second

2.

So respective vs regenerative therapy we will also look at which site are we talking about, which quadrant we are talking about, for example anterior teeth lets say you have deeper pocket and we did respective therapy and you might say look we have 3mm pockets now and its a success but that will actually in fact not be success if that esthetic nightmare for the patient in that case we are to be careful about what we do the site is critical esthetics considerations are critical so more conservative approach for single rooted teeth, patient compliance if patient compliance is good then we can look at this study and maintain patient with non surgical therapy alone

Surgical approach for esthetic reasons, regions can be considered, papilla presentation, sulcular flap, modified Widman flap will learn in more detail

Surgical Periodontal Therapy *Objectives*

- Reduction of periodontal pockets and furcation involvement, by resective, regenerative or combination methods
- Correction of related morphologic problems, e.g. mucogingival defects.
- Improve prognosis of teeth and their replacements
- Reshape soft and hard tissues to more physiologic contours and Improve esthetics



Surgical Periodontal Therapy *Objectives*

- Benefits of Surgical Therapy:
 - increase accessibility to the root surface, making it possible to remove all irritants **Most critical benefit**
 - reduce or eliminate pocket depth, making it possible for the patient to maintain the root surfaces free of plaque; and
 - reshape soft and hard tissues to attain a harmonious topography.

1.

So now he's going to show what the objectives of surgical therapy are, obviously reduction of pocket depths, furcation involvement by respective, regenerative or combination methods, if we have mucogingival defects we will talk about periodontal plastic surgery, will look at some examples, improve prognosis of teeth goes without saying that has to be the first criteria

Reshape soft and hard tissue to improve esthetic s

2.

The benefits of surgical therapy, the primary criteria with surgical therapy is access, and that is absolutely critiacal that access is the first thing that we need, and then obviously we can reduce the pocket depth make it possible to maintain, reshape the soft and hard tissue, get a more harmonious and anatomy

Box 53-1
Periodontal Surgery

Pocket Reduction Surgery

Resective (gingivectomy, apically displaced flap, and undisplaced flap with or without osseous resection)

Regenerative (flaps with grafts, membranes, etc.)

Correction of Anatomic/Morphologic Defects

Plastic surgery techniques to widen attached gingiva (free gingival grafts, other techniques, etc.)

Esthetic surgery (root coverage, recreation of gingival papillae)

Preprosthetic techniques (crown lengthening, ridge augmentation, and vestibular deepening)

Placement of dental implants, including techniques for site development for implants (guided bone regeneration, sinus grafts)

Periodontal Surgery - Overview



Gingivectomy

Recession of gingival soft tissue

1.

Boxes from text again

He is Just overview of how different what surgical therapies might resolve them and we will learn in depth in coming weeks

2.

So soft tissue respective therapy again gingivectomy has been done here, the patient had gingival enlargement and again that gingival tissue has been resected and this is gingivectomy and dr Califano will talk about more when indications are, when we will not do gingivectomy alone

Periodontal Surgery - Overview

See more of the root



Osseous Surgery with Apically Positioned Flap

Periodontal Surgery - Overview

Intrabony defect;
Place bone graft to
regenerate
Close it



Guided Tissue Regeneration

1.

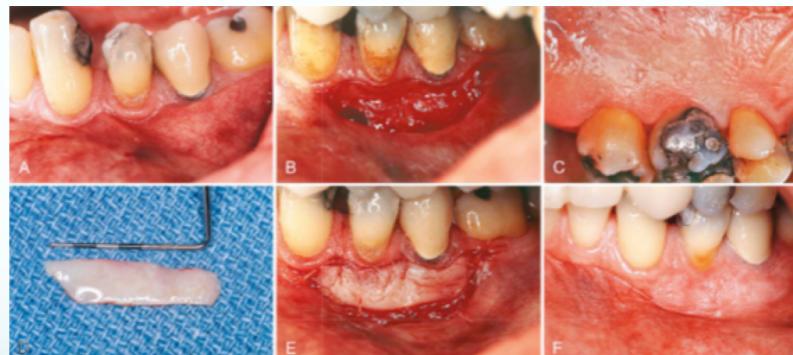
Deeper pockets again in this case surgery has been done with apically positioned flap so this is what apically positioned flap so you can see the tissue is more apically displaced, now you are seeing some of the root structure exposed and after surgery is done you learn about this next week

Regenerative therapy again we use different kind of grafts and membranes

We talked about 2.

Case with guided tissue regenerative tissue so in this case you can appreciate that there is radiolucency and most likely clinical deeper pockets, if the flap was reflected this is what was seen in this case, pretty extensive severe amount of bone loss, again all that is cleaned, grafted with bone and a membrane is what you see here, and closed like that and healed like that so we cannot say we have new attachment, we have radiographic bone fill but again this are relatively quite predictable procedures if done the right way

Periodontal Surgery - Overview



Free Gingival Grafting

Periodontal Surgery - Overview



Soft tissue graft
Plastic surgery

Root Coverage Procedure

1.

Plastic surgery procedures again we use different kind of grafts, typically take it from the palate and again graft at the site of where we don't have attached tissue and again this is pre gingival graft procedure this you will learn after midterms

At this time terminology plastic surgery procedure free gingival graft

2.

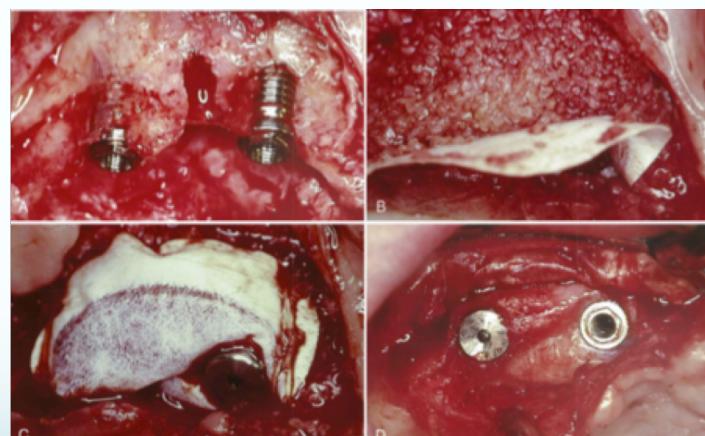
Esthetic surgery, we have gingival recession defects can be quite well regenerated, root covered procedures

Periodontal Surgery - Overview



Crown Lengthening Surgery

Periodontal Surgery - Overview



1.

Pre prosthetic surgery crown lengthening for example you are going crown preparation but lets say there is tissue and or you have the decay underneath the gum tissue, then we can increase that by crown lengthening procedures again those are that is something you can also do in your pre doctoral curriculum as a senior, we can talk about that

2.

Implants obviously implants you will learn a lot about those, I guess you are already learning about So impalts ar epalced and some bone grafting and reaugmentation procedures and things like that

The surgical procedures we talked about very briefly were just for overview, you will learn more about them



•Questions?