

Chapter 6—Periodontics

Overview

Introduction

With the decline of school-based incremental care for children in the IHS Dental Program, there has been a concurrent increase in the amount of adult care being provided. Periodontal diseases, once wholly ignored by the IHS, are now becoming increasingly important as adult- and family-oriented care is being emphasized. Recent oral health surveys conducted by the IHS have indicated a high prevalence of periodontal diseases throughout American Indian and Alaskan Native populations. Much of the tooth and alveolar bone loss that occurs in Native American groups can be attributed to the high rates of another chronic disease, Type 2 diabetes mellitus. The backlog of periodontal prevention and treatment needs that has resulted from years of providing no adult care, combined with the existing high periodontal disease rates, now poses a significant challenge to the IHS Dental Program.

This chapter discusses some strategies and techniques for addressing this backlog of care and preventing future tooth loss among our treatment populations. This chapter is only a brief outline of common prevention and treatment approaches which should be considered in IHS programs.

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Section A--Diagnosis of Periodontal Disease

This section discusses the diagnosis of periodontal disease. Diagnosis consists of--

- population-based high risk diagnosis and screening
- individual-based periodontal disease diagnosis

Population-Based High Risk Diagnosis and Screening

Introduction

The establishment of an individual's risk for periodontal disease is not yet a perfect science. A body of evidence is building which supports the identification of high periodontal risk. This supportive information comes primarily from the few longitudinal studies on the natural history of periodontal disease. Determining individuals with moderate or low periodontal risk is also of significant interest. However, the slow progression of periodontal disease in moderate or low-risk individuals makes early detection of these categories nearly impossible.

Targeting Patients for Care

In public programs, determining whom to treat is as important as how to treat. Studies of the natural history of periodontal disease indicate that a range of susceptibility exists for individuals within a population. In general, individuals can be grouped into three risk categories for periodontal disease--

- **High-risk group.** The high-risk group is a relatively small number of individuals who demonstrate early and rapid periodontal breakdown and subsequent tooth loss.
- **Moderate-risk group.** The moderate-risk group represents the majority of the population which experiences slow periodontal breakdown over a life span with some tooth loss.
- **Low-risk group.** The low-risk group is also a small group of individuals who are relatively resistant to periodontal breakdown and require very little periodontal treatment.

Given the inability of the IHS Dental Program to provide continuous periodontal services to all eligible American Indians and Alaskan Natives, prioritizing who receives care is essential. By targeting treatment to those who need care the most, and before severe periodontal destruction occurs, treatment resources can be used most effectively.

Attachment or Alveolar Bone Loss

Since past attachment loss or alveolar bone loss is a good predictor of future loss, early bone losers (14 to 35 years of age) may indicate lifelong high risk for periodontal disease.

The IHS Dental Program uses several routine diagnostic tools, which can be helpful in determining early alveolar bone or attachment loss. These include--

- bite-wing X-rays
- panoramic X-rays
- Community Periodontal Index of Treatment Needs (CPITN)/ Periodontal Screening and Recording (PSR) System

Early alveolar bone loss can be determined in adolescent and young adult age groups (14 to 20 years) by assessing bite-wing radiographs. Although this technique requires a certain degree of precision, most diagnostic bite-wings will allow measurements to determine bone loss. Any single site on a posterior interproximal radiograph which measures greater than 2 mm between the cemento-enamel junction (CEJ) and the crest of the alveolar bone can be considered to be early bone loss.

Individuals 20 to 35 Years of Age

For individuals in the 20- to 25-year age range, CPITN may be helpful in determining high periodontal risk. Since even an inflamed sulcus (no periodontal attachment loss) can measure 4 to 5 mm, actual attachment or bone loss may not be present until a probing pocket depth reaches 6 mm (CPITN 4). Therefore, in this age group, a single site of CPITN 4 would indicate early bone loss and high periodontal risk. High-risk individuals in this age group would be characterized by a mean attachment loss of 2 to 4 mm. An annual attachment loss rate of approximately 0.5 mm could be expected for high-risk individuals 20 to 25 years of age.

Note Remember that any isolated site of bone or attachment loss should be carefully examined to eliminate the possibility of local plaque retentive factors (e.g., calculus, open contacts, restorative overhangs, etc.) providing the etiology. Single, isolated lesions which are caused by plaque retentive features should not be considered a basis for establishing a high risk diagnosis.

For individuals 20 to 35 years of age, CPITN can also be used. High-risk individuals at this age would be expected to show at least one site of CPITN score of 4. In most high-risk individuals, multiple sites of CPITN 4 would be observed. The mean attachment loss expected in this age group would be 4 to 6 mm, with an average attachment loss of 1 mm/year.

Individual-Based Periodontal Disease Diagnosis

Introduction

Early detection and treatment of patients who demonstrate signs and symptoms of periodontal disease are essential to establishing and maintaining periodontal health. An accurate clinical periodontal diagnosis is critical to providing appropriate treatment and maintenance care.

Community Periodontal Index of Treatment Needs (CPITN)

The IHS has adopted the use of the CPITN as an initial screening examination for all patients presented for care. Periodontal screening and recording (PSR) is being promoted by the American Dental Association (ADA). The PSR and CPITN are essentially the same index. Additionally, all patients with identified periodontal pathology should have a written diagnosis.

- **Limitations.** Although CPITN can be useful in clinical programs as a triage tool in determining how the patient is going to be scheduled and who will treat, etc., it is not specific enough to be considered the diagnosis.
- **Indications.** The CPITN protocol should be used in all facilities.

ADA/AAP Classification

Classification	Description
Periodontal health	
Gingivitis	no pockets, bleeding on probing
Mild chronic periodontitis	3- to 4-mm pockets, up to 30 % horizontal bone loss
Moderate chronic periodontitis	4- to 7-mm pockets, 30 to 50 % bone loss
Severe chronic periodontitis	>7-mm pockets, >50% bone loss

In any of these categories the condition is additionally classified as *localized* if it involves less than 30% of the dentition, and *generalized* if it involves greater than 30% of the dentition (i.e. generalized moderate chronic periodontitis, localized severe chronic periodontitis).

The written diagnosis should also recognize the presence of other less frequent periodontal diseases, such as localized and generalized aggressive periodontitis (see following section) and necrotizing periodontal diseases. For a complete description of the new Classification System see Armitage, G. Development of a Classification System for Periodontal Diseases and Conditions. Annals Periodontol. Vol 4 (1). P. 1-6.

Diagnosis Requirements

To accomplish an accurate diagnosis using the above classifications and indices, the clinician must be able to identify and record when indicated--

- abnormal visual gingival findings
- probing depth
- mobility
- furcation involvements

These can be identified with a standard examination setup, which includes a periodontal probe and radiographs. Minimally, bite-wing and panoramic film should be available. In adults with periodontitis, vertical bite-wings are the most diagnostic.

Other factors

Other known factors can be used to determine the diagnosis for high-risk periodontal disease or need for special periodontal therapy. These include--

- age
- existing systemic diseases
- other conditions
- medications predisposing to gingival hyperplasia

Each of these factors is described in the following blocks.

Age

The following age factors contribute to the onset of periodontal disease

- Onset of periodontal disease in children and young adults (5 to 35 years)
 - periodontitis associated with genetic factors (very rare), i.e. Papillon-Lefevre syndrome, cyclic neutropenia, Down's syndrome, etc.
 - localized/generalized aggressive periodontitis in children and siblings of those with aggressive periodontitis (See following section on Localized Aggressive Periodontitis)
 - adolescents with early alveolar bone loss
- individuals who are over 50 years of age

Existing Systemic Diseases

The following existing systemic diseases contribute to the onset of periodontal disease

- diabetes mellitus (DM)
 - uncontrolled diabetes
 - longstanding diabetes (greater duration increases risk)
 - glucose intolerance disorders (prediabetics) (FPG \geq 126 mg/dl)
controlled diabetes
 - close genetic relatives of diabetics (immediate family)

- immunocompromised
 - HIV, or AIDS
 - organ transplant recipients
 - neutropenia
 - leukemia
 - autoimmune diseases (usually taking immunosuppressive drugs)

Other Conditions

Other conditions may also contribute to the onset of periodontal disease. They include--

- tobacco use (most significant is smoked tobacco)
- stress
- altered salivary flow (usually drug side effect, diabetes, or radiation therapy)
- physically or mentally handicapped (inability to perform oral hygiene procedures)

Medications Predisposing to Gingival Hyperplasia

Medications predisposing to gingival hyperplasia also contribute to the onset of periodontal disease. They include--

- sodium dilantin (antiseizure drug)
- nifedipine and some other calcium channel blockers
- cyclosporin (antirejection drug)

Using the Periodontal Examination Record

Introduction

An adequate record of the patient's periodontal status over time is essential for effective care. Therefore, the IHS Periodontal Examination Record (IHS Form 514 (1993)) should be used for initial periodontal workups and recall or maintenance therapy for all high-risk individuals and patients who will receive definitive periodontal treatment. (See Appendix A for a copy of the form that you may reproduce.) ***The form should be used only if periodontal therapy will be provided.*** Generally, the WHO periodontal probe is not used to fill out this form. The North

Carolina probe (UNC 15) with millimeter markings is preferred, but the Williams and Marquis (3-6-9-12) are also acceptable.

Form Design

IHS Form 514 (1993), Periodontal Examination Record is primarily designed to provide a record of probing pocket depths, furcation involvement, and tooth mobility scores. Three lines of boxes are provided for three separate dates of pocket depth measurements. Each box should contain three pocket depth measurements (mesial, mid-buccal/mid-lingual, and distal) for each tooth included in the periodontal exam. Although the form contains spaces for all possible teeth in both arches, many times the form can be utilized for recording pocket depths associated with only limited numbers of teeth, as in cases of localized disease.

Localized Aggressive Periodontitis

Introduction

An early onset form of periodontal disease, localized juvenile periodontitis (LJP) was first described accurately in literature in 1971. LJP was then termed *periodontosis*. Over the years, a great deal has been learned about LJP. The current literature supports the hypothesis that LJP has a strong genetic component and this may account for the high prevalence among certain Native American populations, particularly in the Southwest. In 1999 the terminology for this condition was changed to Localized Aggressive Periodontitis

Characteristics

The disease is characterized by rapid loss of periodontal attachment and alveolar bone around first molars and/or incisors. The condition has its onset during or shortly after puberty and progresses rapidly, often leading to tooth loss.

Possible Cause

Localized aggressive periodontitis in children is strongly associated with the microorganism *Actinobacillus actinomycetemcomitans* (A.a.). The presence of this organism seems to be necessary for the disease to occur. A.a. is a facultative anaerobic rod which has significant virulence factors associated with periodontal breakdown and is capable of invading tissues. This may account for past difficulty in treating infected individuals.

Diagnosis

A diagnosis of localized aggressive periodontitis can be made if a teenage individual (usually 13 to 16 years) presents with one or more first molar or incisor teeth demonstrating more than 2 millimeters of attachment loss. These patients should be presumed to be infected with the A.a. organism, and a treatment program should be initiated to eliminate this organism.

Treatment

Treatment should be initiated as early as possible; therefore, teenagers should be routinely screened for the presence of periodontitis. CPITN screening, along with an evaluation of radiographs, will usually identify affected individuals.

Treatment should include the following

- patient education (understanding the significance of the problem)
- home care instruction (often using an interproximal brush in infected sites)
- root planing with anesthesia to smooth the root and to debride infected soft tissues

Because of the invasive nature of the A.a. organism, root planing alone is usually not completely effective in treating these patients. The pocket often rapidly recolonizes and infection continues to progress.

The use of antibiotics, in addition to the mechanical procedures discussed, offers a better chance of arresting the disease process. Clinical studies have focused on the use of tetracyclines, and these currently are the drugs of choice. One gram of tetracycline daily for up to 21 days is the most common protocol (250 mg q.i.d.). Some authors have reported better compliance with doxycycline (100 mg per day) also for 21 days. Other drugs have demonstrated promising results, including metronidazole and amoxicillin, both at 250mg t.i.d. for 10 days.

Other considerations

The ability of the clinician to debride defects deeper than 6 mm needs to be considered. In patients with deep defects, it is generally more effective to treat via an open flap procedure (open flap curettage) and again, the result can be further enhanced with the addition of antibiotic therapy. These patients should also be placed on a chlorhexidine containing mouthrinse for at least 1 week post-treatment. When desired, questions regarding the treatment of individual patients may, and probably should, be discussed with one of the IHS periodontal consultants.

Section B--Nonsurgical Periodontal Treatment

Overview

Introduction

Nonsurgical periodontal therapy generally consists of a combination of supragingival and subgingival plaque and calculus control measures utilizing hand instruments, sonic and ultrasonic scalers, and antibiotic and anti-infective agents. Surgical treatment is usually reserved for advanced cases (those with deep pocketing). Longitudinal studies have demonstrated similar pocket reductions after 3 to 5 years of follow-up when comparing surgical and nonsurgical therapy. The IHS will necessarily utilize nonsurgical treatment when definitive periodontal care is provided. Treatment includes--

- clinical care
- maintenance care

Caring for High Risk Individuals

Individuals who are identified as at high risk for periodontal disease should be placed into a high-intensity therapy program consisting of--

- clinical care
- maintenance care

Clinical Care

A clinical care program for a high-risk patient should include the following

- full-mouth periodontal pocket-depth probing
- intensive oral hygiene instructions (OHI)
- nonsurgical approaches (e.g., scaling and root planing)
- antibiotics

Full-Mouth Periodontal Pocket Depth Probing

The establishment of full-mouth charting will provide a baseline for annual repeat full-mouth measurements. Probing records are essential for determining periodontal disease treatment

effectiveness. (However, remember full mouth probing and recording should only be conducted on patients who will or potentially will receive planned treatment and periodontal recall.)

OHI

OHI are also essential at the initial treatment visit and at each subsequent patient visit. Perhaps a microscope-oriented OHI method could be utilized for these high-risk patients. Patient education should be individualized with emphasis placed on plaque and bleeding self-assessment, use of cleaning devices (especially the interproximal brush where indicated), and (in specific cases) the home use of chemotherapeutics and irrigators.

Nonsurgical approach

In community-oriented programs (e.g., IHS), clinical treatment should be based on a nonsurgical approach. Frequent root surface cleaning should be performed utilizing an ultrasonic cleaning instrument (See Scaling and Root Planing).

- Local anesthetics will be required frequently for adequate cleaning of deep pockets (CPITN 4) with either hand or ultrasonic instruments. The use of local anesthetics may not be required for subsequent recall cleaning visits if root surfaces are relatively free of deposits.
 - Chemotherapeutic agents should be used extensively. These agents can be employed in conjunction with the coolant spray of certain ultrasonic instruments or as a separate subgingival irrigation procedure following ultrasonic cleaning. The chemotherapeutic agents currently recommended include--
 - 0.12 percent chlorhexidene (Peridex, Perioguard, or generic)
 - a combination of 10 percent povidone I₂ + 3 percent H₂O₂
 - 10 percent povidone I₂ (Betadine)
- Note** Betadine is less expensive, but less convenient to use because of the potential for staining and its poor taste.
- Chlorhexidine is the agent recommended for routine use.

Antibiotics

Antibiotics should be considered for use on high-risk periodontal patients during their initial cleaning visits. The purpose of systemic antibiotic usage is to optimize healing by eliminating periodontal pathogens which have penetrated periodontal tissues. Antibiotics should be used only in conjunction with the initial full-mouth cleaning. Antibiotic use without full-mouth root debridement is of very little benefit. Systemic antibiotic use should be considered during the

initial cleaning visits on any high-risk individual 14 to 35 years of age who has two or more sextants of CPITN 4 scores.

If there are no health related contraindications, antibiotics should be prescribed to high-risk individuals for a period of 14 to 21 days. During this period, the entire mouth should be thoroughly cleaned (usually two appointments). The antibiotic recommended for routine use is Doxycycline. If Doxycycline cannot be given, or if a refractory disease condition exists, Augmentin 500 mg can be substituted. Other systemic antibiotics such as clindamycin 150 mg QID or combinations of amoxicillin 250 mg TID plus metronidazole 250 mg TID or Ciprofloxacin 500 mg BID plus metronidazole 250 mg TID can also be used effectively for aggressive periodontal diseases. It is best to contact a IHS periodontal specialist for a consult prior to using these drugs. Systemic antibiotics can be helpful in achieving maximum results from the initial patient prophylaxis. However, the benefits of systemic antibiotics in this usage scheme must be weighed against the associated problems. Frequent antibiotic use can promote resistant bacterial strains. Antibiotics often cause significant side effects (e.g., nausea, diarrhea, upset stomach, fungal overgrowths, etc.) It is therefore recommended that systemic antibiotics be administered to high-risk individuals only during the initial debridement process. Antibiotics do not need to be prescribed again during recall dental cleanings unless a refractory condition exists. For patients who find it difficult to maintain a regular recall interval, systemic antibiotics should probably not be used more often than once 2 years.

Doxycycline

Doxycycline is a long-acting tetracycline-class antibiotic, which is effective against most periodontal pathogens (gram negative facultative and anaerobic rods). Doxycycline, because of its long-term action, requires the patient to take only one capsule each day, thus enhancing patient compliance. Doxycycline is also relatively inexpensive since it has become a generic drug. Doxycycline should be prescribed as follows

RX Doxycycline 100 mg
Disp. 42 capsules
Sig. 1 capsule q 12 until all are taken

Augmentin

If Doxycycline cannot be given, or if a refractory disease condition exists, Augmentin 500 mg can be substituted. Augmentin should only be given on a three times-per-day basis. The prescription should be

RX Augmentin 500 mg
Disp 30 capsules
Sig 1 capsule q 8 hours until all are taken

Enzyme suppression

Another adjunct in treating periodontitis in high risk patients is prescribing Periostat®, a low dose doxycycline (20mg). Periostat suppresses enzymes of periodontal destruction such as collagenase without the antimicrobial property, which reduces or eliminates the risk of bacterial resistance and super-infection. It is effective in patients with generalized severe periodontitis, and can be started immediately after the 100mg doxycycline prescription is completed, or at the first recall in patients that did not respond well to initial periodontal therapy.

RX	Periostat
Disp	180 capsules
Sig	1 capsule q 12 hours for 3 months

Use of local delivery antimicrobials

Local delivery of antibiotics will achieve very high levels of the antimicrobial compound directly to the affected site. They are most useful in patients with a few sites that do not respond to the standard therapy. There are currently three forms available. The first is Atridox ® which is a doxycycline gel which is injected into the pocket where it polymerizes. Each syringe can treat several sites in the same patient. Arestin ® is a minocycline delivery system that consists of microspheres delivered into the pocket using a special syringe supplied with the material. Each syringe tip carries 1 mg of material for a single site. The third type is the Periochip®, which is a chlorhexidine chip that is placed into the pocket with cotton pliers. In all cases the patient is advised to avoid vigorous cleaning of the site for about two weeks following therapy.

Maintenance Care

High-risk periodontal patients will require frequent individualized recall throughout their lives. Recall appointments should be between 1 and 6 months depending on the patient's individual needs. Maintenance appointments should emphasize OHI, subgingival cleaning, use of chemotherapeutic agents, follow-up pocket depth measurements, and appropriate encouragement of home care, including the home use of cleaning devices and irrigators. Additionally, high-risk individuals may also be targeted for informational mailings regarding their risk for periodontal disease and the need for frequent dental visits.

Caring for Non-high-Risk Individuals

Introduction

Individuals who do not fit into the high periodontal disease risk category may not require continuous care. It is currently unclear what levels and intensity of therapy are required to maintain individuals in the moderate risk category. Even if this information were known, it is doubtful that programmatic resources would support such an effort. Therefore, clinical care for moderate- to low-risk individuals should be provided on an as needed basis.

Treatment

Examination appointments should provide the following

- OHI
- CPITN
- assessment of the need to professionally remove plaque retentive factors (e.g., calculus and overhangs)

No intensive follow-up therapy should be pursued on nonhigh-risk patients. Recall intervals cannot be established easily for individuals who are nonhigh-risk. However, it is safe to assume that maintenance care can be provided much less frequently than for high-risk patients.

Scaling and root planing

Introduction

Scaling and root planing are general terms defining cleaning of the crowns (scaling) and the root surfaces (root planing) of the teeth. The goals of scaling and root planing are to achieve clean, hard tooth surfaces, which are biologically compatible with periodontal health.

Methods

There are several common methods of cleaning these tooth surfaces

- hand instruments (e.g., scalers, curettes, etc.)
- sonic and ultrasonic scalers

Comparisons between hand instrumentation and the use of powered cleaning devices have indicated that both techniques are effective in producing clean tooth surfaces. Root smoothness was once thought to be a critical end product of the root planing process and was used to judge effectiveness of hand and ultrasonic instruments. However, root smoothness is considered now to be a less important part in the health of the periodontium when compared to other factors such as complete plaque and calculus removal.

Hand instruments

Hand instruments have been in use for over 100 years to accomplish scaling and root planing tasks. The use of hand instruments requires sharp instruments and the technical expertise to use these tools on the various crown and root surfaces.

Powered Equipment

The following is a list of advantages supporting the routine use of ultrasonic cleaners in our programs

- Less technical skill is required. (Dental auxiliaries can be easily trained in the use of these instruments.)
- Less time is required. (For the ultrasonic instrument to be effective, the tooth surfaces need only to be touched by the instrument.)
- Wound healing is same as for hand instrumentation.
- This equipment is often more effective in furcation areas.
- Sharpening is **not** required.

IHS Preferred Method

In reality, scaling and root planing will generally include the use of both hand and ultrasonic instruments. However, for IHS practices, the use of the ultrasonic instrument should be encouraged.

Basic and Supplemental Equipment and Supplies

Introduction

The following equipment and supplies are recommended for each service unit dental program. Other manufacturers and sources are available that may better suit your facility's needs. Many of these supplies could be stocked as central warehouse items to simplify procurement.

Suppliers

Item	Comments	Order #	Manufacturer/ Resource
Equipment			
Cavitron SPS	Excellent at calculus removal. Plenty of power. Disadvantage 25K insert not compatible with this 30K unit.	78399	Dentsply/Equip. Division PO Box 872 York, PA 17405 1-800-877-0020 X471
EMS Piezon Master 403	Piezoelectric Ultrasonic Scaler which can deliver antimicrobials. Highly mobile. Plenty of power.		EMS Corporation USA 12092 Forestgate Dallas, TX 75243 1-800-367-0367
Supplies			

Cavitron Slimline Inserts;	for subgingival instrumentation. (10S, 10R, 10L)	6374106 6374102 79611	Dentsply/Equip. Division PO Box 872 York, PA 17405 1-800-877-0020
	TFI-10 Universal TFI-3 Beavertail	6121708 6121702	X471 GSA #V797P3559J
Curettes and Scalers			
Columbia 13/14	Universal curette, double ended	SC 13/14	Hu-Friedy 3232 Rockwell St. Chicago, IL 60618 1-312-975-6100
Columbia 13/14C	Universal with greater blade length, posterior scaler, double ended	SC 13/14C	
H6/H7	Anterior scaler, double ended	SH 6/7	
Gracey 1/2	Anterior scaler, double ended	SG 1/2	
Probes			
	WHO Clinical Probes	PCP 11.5B	Hu-Friedy 3232 Rockwell St. Chicago, IL 60618 1-312-975-6100
	North Carolina Probes	UNC-15	
Prophy Angles			
Right Angle	Prophy sheath, for Midwest Rhino	710078	Midwest/Sybron Corp. 901 W. Oakton St. Des Plaines, IL 60018 1-312-640-4956 GSA #V797P-3285h
Prophy Stem	Shortys, snap-on head	720419	
Disposable Prophy Angle	Recommended--it's effective, inexpensive, and has better infection control. Replaces conventional prophy angles		Check local sources
Digital Explorers Nabors #2	For calculus detection furca detection overhangs, etc	KM0925 3CH DE	Hu-Friedy 3232 Rockwell St. Chicago, IL 60618 1-312-975-6100
Pigtail Explorer 3CH DE	For calculus detection furca detection overhangs, etc.	EXD3CH	
Sharpening Stones			

HB 14 Arkansas	For sharpening curettes and scalers, etc. Hard, Fine	U5190	Hu-Friedy 3232 Rockwell St. Chicago, IL 60618 1-312-975-6100
6 India Stone course, red	For sharpening curettes and scalers, etc. Hard, Fine	SS6	
6A Arkansas Stone (fine white)	For sharpening curettes and scalers, etc. Hard, Fine	SS6A	
Perio Aides			
Proxabrush	Interproximal cleaning brush Extra-fine, taper line shape	605	John O. Butler 4635 W. Foster Ave. Chicago, IL 60630 1-312-777-4000
Inserts	Extra-fine, cylinder shape/taper shape	612P/614P	
Threader	EZZ-Tru Floss threaders, 5/envelope	840	
Disclosing Agent	Red-Cote Tablets, red dye 28, Bulk (1000)	800C	
	Red-Cote Liquid, 8 oz	808	
Toothpaste	Over-the-counter, should be ADA approved with fluoride		
Tooth brushes	Adult, 4-row, soft	M-41	Anchor Brush 1307 Davis Ave. Morris Town, TN 37814 1-615-581-6014
	Junior, 3-row, soft	M-27	
	Adult, 4-row, small head soft, rubber tip	407	John O. Butler 4635 W. Foster Ave. Chicago, IL 60630 1-312-777-4000

Prophy Paste	Nu Pro prophylaxis paste, 200/box with fluoride, coarse--mint, medium-- tropical fruit, fine--tropical fruit, fine--cherry flavor	801212 801251 801261 801291	Johnson & Johnson ESDP Distribution Center Route #1 North Brunswick, NJ 08902 1-800-257-9508 GSA #797P3273h
Hand Mirror	Patient hand mirror, Lucite, one side plain, one side magnified, 5 1/4" dia	3176401	Henry Schein 51 Harbor Park Drive Port Washington, NY 11050 1-800-372-4346
Chlorhexidine	Peridex Mouth rinse CHX 0.12 %, 16 oz. bottles		Omnii Dental Products 1-800-445-3386
	Periogard CHX 0.12%, 16 oz bottles		1 Colgate Way Canton, WA 02021 1-800-225-3756
Local Delivery Antibiotics			
Arestin	minocycline		OraPharma, Inc. 732 Louis Drive Warminster, PA 18974 (215) 956-2200 http://www.orapharma.com/
Atridox	doxycycline		Block Dental 1 (800) 652-5625 http://www.blockdrug.com/
Desensitizing Agents			
Gel-Kam	Stannous fluoride gel, 0.4\$, 4.3 oz. for home treatment, cinnamon flavor	2349	Colgate/Hoyt 1 Colgate Way Canton, MA 02021 1-800-225-3756
Dentin Bloc	Stannous fluoride, 0.717 %, 30 ml	2382	
Protect	Monohydrogen monopotassium oxalate solution, in office	1250	John O. Butler 4635 W. Foster Ave. Chicago, IL 60630 1-312-777-4000
Pain Free	Dentin desensitizer using resin impregnation		Parkell; Henry Schein

Desensitizing Paste	NaFl, 33 1/3 % in office, 1 oz	100-7055	Henry Schein 51 Harbor Pk. Dr. Port Washington, NY 11050 1-800-372-4346
Prevident	NaFl, 1.1 %, brush on gel, by Rx		Colgate/Hoyt
Toothpaste	Densensitizing Toothpaste (Potassium Nitrate)	3176401	Over-the-Counter
Other Home Products	Floss, toothpicks, stimulents		Over-the-Counter
Cavity Shield Fluoride Varnish	5% Sodium Fluoride varnish		Omnii Dental Products 1-800-445-3386
Instructional Aids for Patients			
Patient Education Procedures	Should be geared to your population and patient educational level. See the Oral Health Educational Materials Catalog. Some optional examples follow.		
Periodontal Disease- Don't Wait Till It Hurts	12 pages on causes, prevention, treatment	W121	American Dental Association Order Processing 211 E. Chicago Ave. Chicago, IL 60611 1-800-947-4746
Basic Brushing	color photos, modified Bass technique	W112	
Gum Disease-- Fight Silent Signs	Signs of gum disease, causes, and prev.	W105	
Detection & Treatment of Periodontal Disease on Diabetics	High-level reading material	NIDCR	PO Box 54793 Washington, DC 20032
Dental Tips for Diabetics	Card insert, short and to the point	28A	
Gum Disease-- Fight Silent Signs	Signs of gum disease, causes, and prevention	W105	
Instructional Aids for Groups			
The Chairside Instructor	130 color photos and drawings	W013	American Dental Assoc. Ordering Processing 211 E. Chicago Ave. Chicago, ILL 60611 1-800-621-8099

From Gingivitis to Periodontitis-- A Step-by-Step Review	Flipchart with excellent color drawings of plaque and early through severe periodontitis.		Warner Lambert Co. Consumer Affairs Dept. 201 Tabor Rd. Morris Plains, NJ 07950 1-201-540-2458
Progress of Periodontal Disease	Wall plaque, 17 5/8" x 11 1/8" Laminated	W372	American Dental Assoc. Ordering Processing 211 E. Chicago Ave. Chicago, IL 60611 1-800-621-8099
Dental Hygiene Dentoform Model	Dentoform demonstrating calculus, bone loss, etc	KM-110	Columbia Dentoform Corp. 2219 41st Ave. Long Island City, NY 11101 1-718-482-1569

Section C--Surgical Periodontal Treatment

Overview

Nonsurgical techniques are not always effective in treating periodontal disease. When nonsurgical treatment has failed and patients demonstrate acceptable levels of plaque control, surgical therapy may be considered.

Some of the more common surgical procedures used in treating periodontal diseases include--

- surgical access
- osseous correction
- mucogingival surgery/gingival augmentation and free gingival graft
- frenectomy
- gingivectomy

Performing Surgical Access

Introduction

Surgical access is performed to gain access to otherwise unvisualized root surface areas for debridement, detoxification, grafting, osseous recontouring, regeneration procedures, and so on.

Incision Design

Classification is based on the final position of the flaps (or at least the desired final position) after suturing (Figure 6-1). The surgical procedures are very similar, have the same objectives, and may be considered as one procedure. These classifications include--

- apically-positioned flap-tooth (APF-T)
- apically-positioned flap-crest (APF-C)
- apically-positioned flap-subcrest (APF-SC)

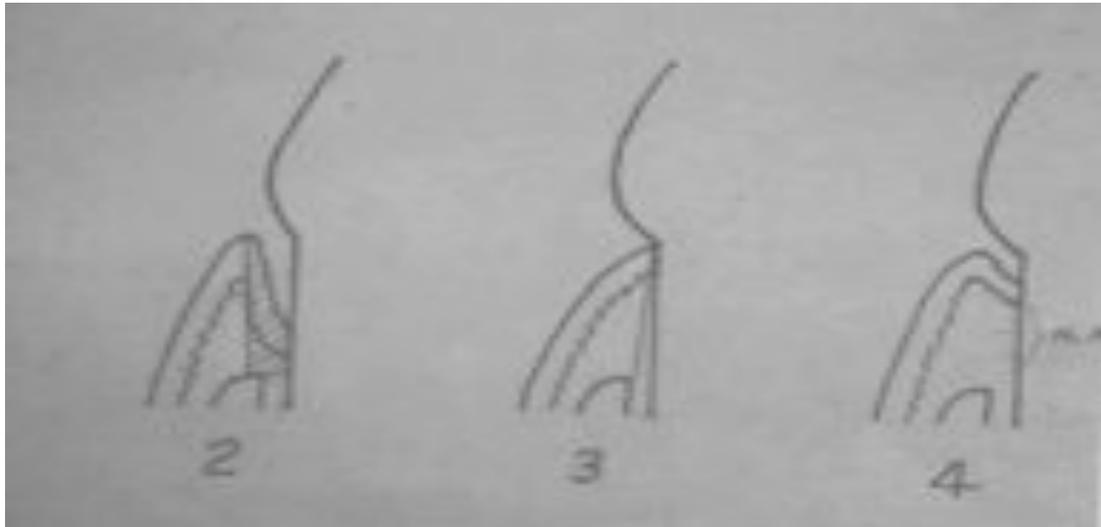


Figure 6-1

Apically-Positioned Flap-Tooth (APF-T)

Apically-positioned flap-tooth (APF-T) is also known as the Modified Widman Flap or the miniflap. A conservative scalloped incision is made, removing a thin (1 mm) collar of tissue. Flap reflection apical to the mucogingival junction is avoided wherever possible. Flaps are sutured 2 mm above the alveolar crest. These flaps are utilized in the anterior part of the mouth in areas of supracrestal pocketing where there is an adequate zone of attached gingiva to dissipate frenum pull, and when no appreciable osseous contouring is required.

Members of this classification include the following

- replaced flap procedure
- excisional new attachment procedure (ENAP)

Replaced Flap Procedure

The replaced flap, sometimes known as the replaced graft, is a member of this category, and differs from the others by its more generous reflection of flap tissue (past the mucogingival junction). This category of flap manipulation is the most frequently used by many practitioners during periodontal surgery. It is an all-purpose flap procedure that may be modified as needed, and should be considered a surgical starting point. Use this approach unless there are definite reasons for using other types of flaps.

Excisional New Attachment Procedure (ENAP)

The excisional new attachment procedure (ENAP) is a very conservative version of this procedure and is described as gingival curettage with a knife. This procedure is misnamed because it results in a long epithelial attachment, and not true new attachment. Minimal papilla reflection is attempted.

Note This is a technique-sensitive procedure, and should be attempted only by practitioners trained in its use.

Apically-Positioned Flap-Crest (APF-C)

Apically-positioned flap-crest (APF-C) is used to guarantee minimal postsurgical probing pocket depth. It is not as esthetic as the APF-T, showing more clinical crown above the gingival margin. This procedure differs from the APF-T by the final position of flap margins at the alveolar crest. It is used when keratinized tissue is at a premium and radicular bone is thin, but not in situations where inadequate zones of attached gingiva may be encountered

Apically-Positioned Flap-Subcrest (APF-SC)

Apically-positioned flap-subcrest (APF-SC) procedure combines open-root curettage with increasing the zone of attached gingiva. Flaps are sutured apical to the alveolar crest. The postoperative course can be rather rough depending on the patient's temperament and the amount of alveolar bone exposed. Thickness of radicular bone should be evaluated prior to using this procedure to avoid gingival dehiscence. There is a definite esthetic compromise to be considered with this procedure. Periodontal prosthetic considerations should be thoroughly evaluated. The patient **must** be advised in all cases that an increase in tooth surface will show above the gingival margin when healing is complete.

Procedures for Performing Surgical Access

The following are procedures for performing surgical access

Step	Action
1	<p>Make the initial incision in the gingiva to the alveolar crest approximately 1 mm from the tooth surface (Figure 6-2).</p> <p>Note The scalpel blade should be held parallel to the long axis of the tooth and carried as far interproximally as possible. A recent investigation has demonstrated that intrasulcular incisions are equally effective. Consider this approach when keratinized tissue is limited</p>
2	<p>Reflect flaps enough to gain visual access to the osseous crest, but not beyond the mucogingival junction (unless necessary for access or to keep from tearing the flap).</p> <p>Note Since there is no mucogingival junction on the palate, a more generous reflection is possible.</p>

3	Reflect the tissue collar just before or just after flap reflection at the operator's discretion (Figure 6-3).
4	Remove all granulation tissue.
5	Plane the root surfaces meticulously to a hard, smooth surface using a combination of hand and ultrasonic instruments to obtain the best results. Note Care must be taken to avoid pinching or perforating tissue flaps.
6	Recontour the restorations and smooth their margins to remove overhangs and roughness
7	Irrigate the surgical site with water or saline. Note No advantage has been demonstrated with the use of saline.
8	Reexamine the site for tissue tags, overlooked calculus, and marginal irregularities.
9	Perform final debridement, margin smoothing, and root planing.
10	Trim granulation tissue from the inside of all flaps.
11	Perform osteoplasty at this time (if it is to be performed for better flap adaptation).
12	Position flaps in their appropriate positions.
13	Suture flaps with 3-0 or 4-0 sutures (Figure 6-4). Note Silk and gut are two of many acceptable materials. Some practitioners prefer resorbable materials. Some prefer monofilament forms like gut or nylon; others prefer a vertical mattress suture to keep sutures out of the flap margin area; while still others prefer a figure eight-suture technique. These are mostly operator preference decisions having minor effects on healing.
14	Hold firm pressure on the flaps for 5 to 8 minutes.
15	Place periodontal dressing (if it is to be used) at this time. Note There is no healing advantage to using dressings. They act as bumpers and, in some cases, are helpful in holding flap margins down. They do not accelerate healing nor keep food debris or bacteria out of the surgery site.
16	Provide the patient with appropriate narcotic or nonsteroidal pain prescriptions, such as— <ul style="list-style-type: none"> • Analgesia <p>Rx: Ibuprofen 800 mg x 12 tabs Sig: One tab Q 6 to 8 h PRN pain (Do NOT exceed 3200 mg. per day)</p>

	<ul style="list-style-type: none"> • Topical antibacterial agent <p>Rx: Peridex Rinse x 1 pint Sig: Rinse BID for 30 sec with 1/2 oz, then expectorate</p>
17	Remove the sutures in 5 to 7 days unless healing has been delayed.
18	Swab the surgery site with equal parts of hydrogen peroxide and warm water.
19	Lightly scale to remove plaque, tissue tags, and missed flecks of calculus.
20	Polish the teeth with a commercial dentifrice unless this would not remove coffee and smoking stains.
21	<p>Allow the patient to rinse with a commercial mouth rinse diluted with warm water.</p> <p>Note This will leave the patient's mouth feeling fresh and clean.</p>
22	Instruct patients in home care.
23	<p>Reevaluate the patient's progress at various intervals in the healing process.</p> <p>Note Most people should be seen at 30 and 90 days postoperatively. Probing should be avoided for at least 90 to 120 days. Again reinforce home care instructions at each visit during this interval.</p>



Figure 6-2, Incision

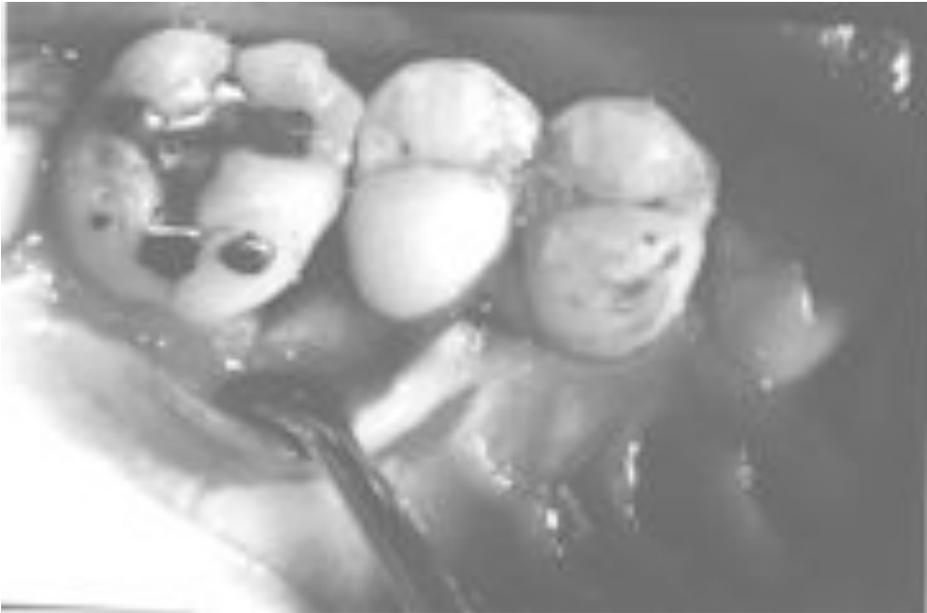


Figure 6-3, Tissue reflection



Figure 6-4, Tissue closure

Performing Osseous Correction

Introduction

Osseous corrections are performed to remove alveolar bone in minimally sufficient amounts so as to provide close-flap to alveolus adaptation and gentle cleansable gingival contours. The two procedures are--

- osteoplasty
- ostectomy

Definitions

Osteoplasty is the removal of nonsupporting alveolar bone to provide a gradually contoured surface over which gingival tissue flaps will adapt and be maintained without the formation of pseudopockets or uncleanable areas.

Ostectomy is the removal of tooth supporting bone to obtain a gently contoured postoperative gingival topography that can be maintained by the patient

Indications for Osteoplasty

The following are indications for osteoplasty

- exostosis and torus reduction
- contouring of thick marginal ledges
- contouring anatomical aberrations not requiring removal of supporting bone

Indications for Ostectomy

The following are indications for ostectomy

- wide two-wall osseous defects or craters
- inconsistent margins
- hemisepta (one-wall defects)
- furcation invasions
- anatomical aberrations requiring removal of supporting bone

Procedures for Performing Osseous Correction

The following are procedures for performing osseous correction

Step	Action
1	Remove all plaque, calculus, and tissue tags.
2	Smooth and recontour restoration margins as necessary.
3	<p>Rinse and thoroughly inspect the surgical site.</p> <p>Note Osseous correction is planned to avoid exposure of furcations and removal of excessive amounts of tooth-supporting bone. Alternative treatment would include extraction, osseous grafting, guided tissue regeneration, and the intrabony technique.</p>
4	<p>Use round burs, Neumeyer flame shaped and end cutting burs; Ocshenbein, Fedi, and/or wedelstadt chisels with a slight rocking back and forth movement.</p> <p>Note These chisels must be sharp, and care taken to avoid nicking the root surface. A round bur in a high- or low-speed handpiece may be used, along with Neumeyer flame shaped burs and end cutting burs for the interproximals. Long-shank contra-angle burs are also recommended for better access to the alveolar crest. A water spray should bathe the contoured area to cool the bone (to prevent necrosis of the cellular component of the alveolar bone). Avoid touching the flap when the bur is rotating. Bone particle size resulting from high-speed osseous correction is optimum for autogenous grafting, and may be saved in a sterile Dappen dish until all correction is completed. Then it may be placed into two- and three-wall defects or furcations as opposed to being discarded.</p>
5	Rinse the surgical site and inspect the entire area (prior to graft placement--if this is done).
6	<p>Fill the osseous defects.</p> <p>Note Osseous defects should not be overfilled. The optimum allograft to autograft ratio is 1:1.</p>
7	Optimally cover grafts with flaps (without stretching them).
8	<p>Suture the flap.</p> <p>Vertical mattress sutures will keep suture material away from the critical flap margin area during initial healing.</p>
9	Avoid probing grafts for 6 months.

Performing Mucogingival Surgery/Gingival Augmentation

Introduction

Mucogingival surgery has been a part of the periodontal surgical armamentarium for many years. The goals of these procedures follow:

- Increase the zone of attached gingiva.
- Increase vestibular depth.
- Cover denuded root surfaces.
- Eliminate muscle or frenum pull on the free gingival margin.

Abnormal Findings

Many of the above findings are common and the rationale for surgically correcting these is often difficult to define. These abnormal clinical findings may exist for a variety of reasons, including--

- narrow alveolus
- mechanical (overzealous tooth brushing, etc.)
- chronic inflammation
- crowding
- postorthodontic movement

Considerations

The need to correct any mucogingival deformity is based on the--

- history of the defect
- patient's ability to maintain the area (adequate plaque control)
- esthetics
- cemental sensitivity
- existence of increased pocket depths

Indications

Practically, it is rare for teeth to be lost because of nonpocket mucogingival deformities. The rationale for performing the surgery should be one of the following

- esthetics (usually maxillary anterior)
- cemental sensitivity after conservative treatment has failed
- where plaque control is compromised because of the morphology of the defect
- prosthetic considerations especially where the margin of a crown or other restorations is to be placed into an unfavorable environment
- other considerations

Corrective Surgical Procedures

If it is determined that correction is necessary, the following is a list of corrective surgical procedures to be considered

- free gingival/connective tissue graft
- lateral sliding flap
- double papilla flap
- coronally-positioned flap

This chapter does not attempt to cover all of these procedures. All have their place in therapy and can be accomplished predictably. Those who have had adequate training in the rationale for, and performance of, these procedures recognize their limited indications and may continue to employ their use when necessary. For those who have not, this brief discussion is not adequate preparation.

Performing a Free Gingival Graft

Introduction

Free gingival grafting may be considered if there is a demonstrated need to perform any of the following

- Increase the zone of attached gingiva.
- Deepen the vestibule.

- Eliminate abnormal muscle pull.

The most common indication for this procedure is the labial aspect of the mandibular anterior, and this is the area that will be discussed.

Caution Mucogingival surgical procedures are very technique-dependent. Clinicians who feel inadequately trained and/or experienced in the use of these procedures should seek a consultation before attempting them.

Procedures for Performing a Free Gingival Graft

The following are procedures for performing a free gingival graft. It is intended only as an outline.

Step	Action
1	Anesthetize both the recipient and donor sites with infiltration local anesthesia.
2	Make an incision just above the mucogingival junction (Figure 6-5). Note This incision should be carried horizontally one to two teeth either side of the area being treated.
3	Place the scalpel blade in this incision and prepare the recipient site by sharp dissection passing apically to the base of the area to be grafted (usually 5 to 10 mm). Caution Care should be taken during this split-thickness dissection to leave periosteum on the underlying bone but not leave significant other tissues as this may result in a graft that is not bound to bone but is floating.
4	Place a sterile saline-soaked gauze on the wound.
5	Obtain donor tissue from the palate. Note The dimensions of the recipient site should be outlined on the palate with a scalpel and a graft elevated that is 3/4 to 1 1/4 mm thick (Figure 6-6).
6	Inspect the connective tissue side of the donor material and remove any nonconnective tissue.
7	Place the graft immediately on the recipient bed so as not to compromise its viability.
8	Suture the graft to the recipient site at its superior corners (Figure 6-7).
9	Carefully apply pressure to the graft for 5 to 10 minutes to minimize clotting and tack it to the recipient bed.
10	Place periodontal pack (necessary if the patient is not instructed carefully).

11	Give the patient postoperative instructions (Appendix B) and have the patient return in 5 to 7 days. If the palatal wound is uncomfortable, analgesics are recommended. (Figure 6-8).
----	---



Figure 6-5, Surgical Site Preparation



Figure 6-6, Donor Site



Figure 6-7, Donor tissue sutured in place



Figure 6-8, 10 weeks post-op

Performing a Frenectomy

Introduction

A simple frenectomy should be considered when the presence of a frenum either--

- significantly interferes with the patient's ability to maintain the area
- compromises the labial flange of a maxillary denture
- produces pull on the free gingival margin (that by history is causing progressive attachment loss)
- interferes with the orthodontic closure of a diastema

If the abnormal frenum is associated with an inadequate zone of attached gingiva, the frenectomy is best accomplished in conjunction with a free gingival graft. The most common area where frenectomy alone is indicated is the maxillary labial frenum.

Procedures for Performing a Frenectomy

The following are procedures for performing a frenectomy

Step	Action
1	Anesthetize the area (Figure 6-9) by infiltration using a local anesthetic. Caution Care should be taken not to distort the area with rapid injection.
2	Hold the lip upward and forward to visualize the extent and morphology of the frenum.
3	Grasp the frenum with a small curved hemostat with the tip of the beak to the base of the vestibule. Note The convex curve of the hemostat should face the lip (Figure 6-10).
4	Make an incision along the lateral borders of the frenum using a #15 scalpel blade (Figure 6-11). Note This will form a V-shaped incision which includes the lowest attachment (apex) of the frenum.
5	Excise the superior portion of the frenum from the upper lip following the outside curve of the hemostat (Figure 6-12). Note The tissue to be removed should now be free and held only by the hemostat. The wound created in the lip will be wide.
6	Undermine the lateral borders of the incision by blunt dissection using a periosteal elevator (Figure 6-13). Note This will aid in the placement of sutures and assist in minimizing recurrence.
7	Close the wound with 3-0 or 4-0 black silk sutures taking care to approximate the tissue and not purse the margins (Figure 6-14).
8	Apply pressure to the wound for approximately 5 minutes.
9	Have the patient return in 5 days for suture removal and follow-up care.



Figure 6-9, Operative site



Figure 6-10, Hemostat in Place



Figure 6-11, Incision on Either Side of Hemostat



Figure 6-12, Removal of Frenum



Figure 6-13, Frenum removed



Figure 6-14, Surgical site closed

Performing a Gingivectomy

Introduction

The gingivectomy procedure is essentially the same as that for gingivoplasty except the pockets are more pronounced with a diseased inner wall.

Note Nifedipine, cyclosporin, dilantin and other medications may cause **drug-induced gingival hyperplasia** in some people. This is not a universal response to these medications. Bacterial plaque appears to initiate and aggravate this exaggerated response (growth) of fibroblasts and collagen fibers. The net result is usually a pseudo pocket (the epithelial attachment is at or near the CEJ, and the pocketing is coronal to them). Meticulous oral hygiene seems to be helpful in avoiding or retarding the growth of gingival tissue.

Indications

The gingivectomy is indicated in the following situations

- where the pocket is confined within the attached gingiva and there is enough attached gingiva so it will not all be removed during the surgical procedure
- if there are no osseous deformities

Contraindications

The gingivectomy is contraindicated if the postoperative zone of keratinized gingiva is less than 2 mm; consider using an apically positioned flap procedure. A second step free gingival autograft may be required to reestablish a cleansable comfortable zone of keratinized/ attached gingiva.

Procedures for Performing a Gingivectomy

The following are procedures for performing a gingivectomy

Step	Action
1	Make bleeding points along the gingiva with a pocket marker, or probe to identify the base of the pockets prior to the initial incision.
2	Make a beveled incision within the attached gingiva with the gingivectomy knife at a 45 degree angle to the tooth to the base of the pocket following the outline of the bleeding points.
3	Undermine and shape papilla and interproximal tissue with the interproximal knife.
Note This will allow the gingiva to be removed in one piece.	

4	Further contour the tissue with the side of the gingivectomy knife and abrasive diamond stones.
5	Remove tissue tags with a sharp curette.
6	Apply a periodontal dressing to the surgical area.
7	Give patient postoperative instructions, necessary pain medications, and a prescription for a chlorhexadine rinse as follows Rx: Peridex Rinse Disp: 1 pint; refill x 3. Sig: Rinse B. I. D. for 30 sec with 1/2 oz. then expectorate.
8	Reinforce home care instructions. Note Tell the patient that the best way to avoid or minimize further surgical treatment is to maintain a very clean mouth

Periodontal Surgical Instruments Setup

Introduction

There are a seemingly endless number of periodontal surgical instruments available. However, the instruments listed below should be adequate for most periodontal surgical procedures.

Instruments

The following periodontal surgical items should be included in the instrument setup

- Periodontal probes, William's DE
- Gracey curettes 1-2, 5-6
- Columbia curette 13-14
- McCall 13-14, 17-18*
- Prichard curette 1-2
- Kirkland 13-14 hoe*
- Small curved Kelly hemostat
- Bard Parker scalpel handle #3 (2)
- ASR blade holder*
- #7 wax spatula retractor
- Molt #9 periosteal elevator*
- Seldin retractor*
- Suture material, 3-0 or 4-0 silk or gut
- Surgical length burs, # 6 and #8 round
- Double surface mirror (mirror on both sides)*
- Castroviejo needle holders*
- Curved Iris tissue scissors
- Straight or curved suture scissors
- Sugarman file 1S/2S
- Fedi #2 chisel
- Ochsenbein (#4) backaction chisel*
- Ochsenbein (#1/2) chisel
- Kirkland periodontal knife
- Orban periodontal knife
- Cotton forceps
- Minnesota retractor
- Bard Parker blades, # 15, 15c, and 12
- Nipro tissue nipper*
- Sterile ultrasonic insert/tip

* Optional Item

Section D--Management of Periodontal Emergencies

Overview

Introduction

This section discusses emergency treatment of periodontal diseases. The discussion is limited to emergency treatment of--

- necrotizing ulcerative gingivitis (NUG)--periodontitis
- periodontal abscess

Treating Necrotizing Ulcerative Gingivitis (NUG)

Introduction

Necrotizing ulcerative gingivitis (NUG) is a distinct periodontal disease with a complex and still poorly understood etiology. It can be readily differentiated clinically from chronic inflammatory periodontal diseases.

Clinical Signs and Symptoms

The diagnosis of NUG can be made by a clinical examination of the gingiva and information obtained from the history of the disease. The two most significant clinical symptoms are--

- **interproximal necrosis and ulceration** which has been frequently described as punched-out or eroded crater-like lesions involving the interdental papillae
- **history of gingival soreness and/or bleeding** which is exacerbated by minor trauma such as eating or toothbrushing. The pain also can be spontaneous and constant. Onset of symptoms is usually rapid.

Without these two signs, the diagnosis of NUG cannot be made.

Other Symptoms

The following clinical signs and symptoms are characteristic of NUG

- pseudomembrane
- foul odor
- lymphadenopathy
- increased salivation

- fever
- malaise
- anorexia

Predisposing Factors

The clinical signs and symptoms of NUG appear to be of microbial etiology; however, most patients presenting with the disease usually exhibit one or more of the following predisposing factors

- psychological stress
- fatigue and physical debilitation
- poor dietary habits
- smoking
- trauma
- poor oral hygiene
- job dissatisfaction

Note Psychological and/or physical stress seem to be the most significant predisposing factors.

Procedures for Treating NUG

The following are procedures for treating NUG

Step	Action
First Visit	
1	Conduct diagnosis of disease by obtaining history and evaluating the patient's oral health.
2	Discuss etiology and predisposing factors with the patient.
3	Perform an initial debridement (as tolerated by the patient). Note This is best accomplished with the use of an ultrasonic scaler and local anesthesia.
4	Place the patient on a chlorhexidine-containing mouth rinse (e.g., Peridex, if available).

	Note Frequent warm saline rinses may be recommended as an alternative.
5	Provide the plaque control instruction (critical).
6	Use antibiotic therapy (usually penicillin) only if there is evidence of systemic involvement.
Second Visit (after 24 to 48 hours)	
7	Evaluate response.
8	Perform definitive scaling and root planing.
9	Review oral hygiene procedures with the patient.
Third Visit (at approximately 1 week)	
10	Evaluate response.
11	Check adequacy of root debridement.
12	Reinforce oral hygiene.
13	Appoint for recall in 3 to 4 months to check for recurrence and evaluate extent of permanent tissue damage.
	Note Ideally, some gingivoplasty may be required in a small percentage of post-NUG patients.

Treating Periodontal Abscess

Introduction

Individuals with chronic inflammatory periodontal disease may occasionally present with an acute periodontal abscess (Figure 6-15). Certain procedures may be followed to treat periodontal abscesses.



Figure 6-15

Symptoms

The following symptomatology can be identical for periapical lesions of pulpal origin and periodontal abscesses

- pain on percussion

- gingival swelling
- fistulation
- increased mobility

Diagnosis

The differential diagnosis of the two lesions is usually simple; however, on occasions when it is not, the important criteria to evaluate include—

- history and clinical examination (**probing**)

Note: When the diagnosis is difficult, adequately assessing the periodontium with a periodontal probe is critical. The pattern of the probable area as the probe is "walked" around the tooth should be noted. Areas where the probing pattern is broad and deep are suggestive of preexisting periodontal pathology. A pattern that is very narrow and deep may be indicative of periapical communication, vertical root fracture, or the presence of a morphologic defect such as a palatogingival groove. These narrow defects may be further evaluated with the use of gutta percha cones and radiographs with cones in place.

- tooth vitality tests (See Chapter 10, Endodontics.)
- radiographic appearance

Tips for Treating Acute Periodontal Abscess

The extent of periodontal destruction in these lesions is rapid and often clinically severe. The clinician needs to be aware that these lesions do have an excellent capacity for repair if treated properly as follows

- The acute exacerbation often can be eliminated by establishing drainage through the sulcus.

Note: This is often accomplished by closed curettment of the pocket and root planing the pathologically exposed root surfaces. As an emergency procedure, this will usually eliminate the patient's acute symptoms.

- Where possible, the debridement of these defects is best accomplished via an open flap procedure. An inverse beveled incision (Figure 6-16) should be made from near the free gingival margin to the base of the defect to allow complete debridement of the acutely inflamed pocket contents. This flap should be carefully elevated to visualize the extent of the defect and to assure adequate visibility for root planing. Vertical releasing incisions

may be used if adequate access cannot be obtained by carrying the incision one tooth either side of the abscess.



Figure 6-16

- The wound should be closed with sutures (Figure 6-17) and the patient given standard periodontal postoperative instructions including the use of a chlorhexidine-containing mouthrinse for at least 5 days postsurgery (Figure 6-18).



Figure 6-17



Figure 6-18

Section E--Crown Lengthening

Overview

The procedures and instrumentation are generally the same between osseous surgery and crown lengthening. The major difference is that in crown lengthening surgery we are removing bone and soft tissue around teeth with a healthy periodontium.

Subgingival margins show larger amounts of plaque, more severe gingival lesions, and deeper pockets than margins level with or above the gingival crest. Subgingival restoration margins, especially those with overhangs, are associated with microflora commonly found in diseased pockets. Finish lines at or above the gingival margin are easier to assess for accuracy of fit and to polish, and are associated with gingival health in patients with good oral hygiene. Periodontal therapy should be performed prior to any subgingival margin placement in order to establish health marginal tissue

Damage to the gingival complex is minimal when gingival retraction precedes tooth reduction. Crown Lengthening is a resective periodontal surgical procedure whose indications include: subgingival caries, perforations or fractures in the coronal third of the root, and inadequate retention for a restoration due to a short clinical crown

Practical Crown Lengthening

Understanding Biologic Width

Violations of the crevicular or subcrevicular physiologic dimension by restorative dentistry will cause inflammation, which in the presence of occlusal trauma, will result in more rapid periodontal destruction. Allow 3 mm from bone level to restorative margin:

- 1mm for connective tissue attachment
- 1mm for junctional epithelium
- 1mm of tooth structure between junctional epithelium and restoration margin

Contraindications for crown lengthening

- Single tooth anterior esthetic areas
- Roots with proximity closer than 1.5 mm
- Surgical crown lengthen only after gingivitis or periodontitis is under control!
- Bad oral hygiene
- Existing Periodontitis
- Inadequate attached gingiva

Planning the Surgical Procedure

There are several procedures which can be used for crown lengthening. These are:

- Gingivectomy,
- Apically Positioned Flap,
- Apically Positioned Flap with Osseous Resection

Before surgery is begun, the following procedures must be completed:

- Remove all caries prior to elevating flap
- Remove temporary crowns
- Use bone sounding to determine estimated amount of lengthening required
- Plan to extend two teeth mesial and two teeth distal

The Instrument Tray

- Cotton Pliers
- Tissue forceps
- Explorer
- Mouth Mirror
- Perio probe
- Bard Parker Handle
- Gingivectomy knives
- Periosteal elevator
- Curettes
- Suture scissors
- Tissue scissors
- Hemostat
- Needle Holders
- Syringe for irrigation
- Aspirator tip
- Saline Irrigation
- Syringe for local anesthesia
- Chisels

Surgical Procedure- Soft Tissue

- Use #12 or 12B Blade to make incisions
- Reflect flap using periosteal elevator
- Expose 10 mm of alveolar bone

Initial Incision



figure 6-19, Pre-op



Figure 6-20, Buccal Incision

Palatal Flaps

- First incision is placed 2 mm coronal to finished bone height
- Second incision is placed in sulcus
- Third incision perpendicular to long axis of the tooth
- Remove excess tissue with scaler



Figure 6-21, Palatal Flap

Debridement

- Remove interdental tissue with large scaler
- Remove all tissue tags with Gracey Curettes
- Control Bleeding
- Plane all roots with Gracey Curettes
- Plane to level of bone
- Contour bone to achieve soft tissue fit

Instruments for Bone Removal

- Rhodes 36/37 Back-action chisel
- Oschenbien chisel
- Handpiece with #8 round burs
- Files
- Oschenbien Chisel
- Sugarman File

Principles of Osseous Resection

- Substantial amounts of supporting bone will have to be sacrificed
- Osseous resection cannot be limited to single teeth, especially in the anterior region
- Do not touch tooth with bur; leave a thin layer of bone on root
- Blend bone contours
- One tooth mesial
- One tooth distal
- Use Sugarman file interproximally, if required



Figure 6-22, Interproximal bone contours

Closure

- Use 3-0 or 4-0 suture
- Use interrupted interdental suturing
- Small areas of bone may be left exposed
- Do not cinch them tight
- Cover with Coe-pak



Figure 6-23, Sutures

Restorative Procedures

- Restore posterior teeth in 4 weeks
- Restore anterior teeth in 6-8 weeks
- Non-emergency endo treatment after 2 weeks



Figure 6-24, restoration complete

Post-operative meds

- Peridex b.i.d.
- Tylenol #3 or hydrocodone, enough for 2-3 days
- Motrin or Tylenol during the day
- Generally, no systemic antibiotics required
- Chlorhexidine
- Subgingival margins, especially those with overhangs, are associated with microflora commonly found in diseased pockets

Appendix

PERIODONTAL EXAMINATION RECORD

883-514 (7/1/00/0)

Date of Exam: _____

Mobility scale:
 0 - Normal Mobility
 1 - Up to .5mm
 2 - .5 to 1.0mm
 3 - >1.0mm with vertical mobility

FACIAL

LINGUAL

RIGHT

LEFT

LINGUAL

FACIAL

Furcation Grade
 ▲ I
 △ II
 ▲ III

PASS Score
 Date: _____

PASS Score
 Date: _____

PATIENT IDENTIFICATION

Age: _____ Sex: _____