

# SOFT TISSUE MANAGEMENT IN IMPLANT DENTISTRY

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## SOFT TISSUE MANAGEMENT

### ■ Surgical principles

- well-evaluated patient
  - history
  - examinations
- well-trained surgeon
- well-trained assistant

### ■ Surgical principles

- proper equipment/instruments
- profuse anesthesia
- hemostasis
- complete preop./postop. regimen

### ■ Surgical principles

- atraumatic
  - mechanical
  - physical
  - chemical
  - thermal
  - psychologic
- aseptic
  - surgical field
  - surgical site
  - equipment/instruments
  - antibiotic coverage

### ■ Surgical principles

- incisions

- clean/sharp
- smooth/continuous
- definite
- flaps
  - adequate access/visibility/vascularity
  - retention of keratinized tissue
  - avoid perforation
  - primary closure

### ■ Incision design

- underlying bony topography
- location of anatomic structures
- anticipated extraction or use of GTR
- tissue thickness
- interim prosthesis

### ■ Incision

- cut with curve of a blade not the point
- cut towards yourself
- firm finger-rest
- maintain continuous incision
- careful of anatomic structures
- sharp to the cortical bone
- broad-based or rectangular
- vertical incision on the tooth line-angle
- rarely palatal/lingual vertical incision

### ■ Flap elevation

- full-thickness
- gentle, careful & complete elevation

- without tearing/injuring the periosteum
- careful of anatomic structures

■ **Flap retraction**

- gentle
- hydrated
- sometimes autoretraction with sutures

■ **Autoretraction**

- buccal flaps to the buccal mucosa
- palatal flaps into a midline bundle
- unilateral palatal flap on the contralateral teeth
- bilateral mandibular lingual flaps to each other

**Stage I**

**fixture installation**

■ **Flap design**

- buccal flap
- crestal flap
- overlapped flap
- advanced flap

■ **Buccal flap**

- away from fixture site
- no perforation of cover screw
- epithelial exclusion

■ **Crestal flap**

- easy/fast incision
- easy/fast reflection
- easy place/remove sutures
- less swelling/discomfort
- better for denture wearer

■ **Crestal flap vs Buccal flap**

The Effect of Crestal Versus Mucobuccal Incisions on the Success Rate of Implant Osseointegration (Int. J Oral Maxillofac. Implants 1993;8:187-190)

David R Scharf, DMD / Dennis P Tarnow, DDS

■ **Overlapped flap**

- minimal swelling/discomfort
- fast healing
- denture wearing shortly after surgery
- not indicated in thin/narrow keratinized tissue

■ **Advanced flap**

- two rectangular vertical incision
- incisions pass the mucogingival junction
- flap is transpositioned/advanced
- primary closure of extraction site

■ **Closure**

- undermining
- without tension
- primary closure

■ **Suturing**

- interrupted
- horizontal mattress
- vertical mattress
- various continuous

■ **Suture materials**

- non-resorbable - silk, nylon, Gore-tex
- resorbable - plain/chromic gut, Vicryl, Dexon

■ **Soft tissue healing**

- primary healing
  - well approximated/maintained wound edges
- secondary healing
  - lost/separate wound edges

■ **Soft tissue healing**

- immediate vascular response
  - vasoconstriction then vasodilation
- inflammatory cells into the wound space
- macrophages & fibroblasts
  - synthesis of collagen
- collagen remodeling

**Stage II**

**Uncovering procedure**

- implants are uncovered
- coverscrews are removed
- abutments are connected

■ **Uncovering procedure**

- punch procedure
- crestal flap
- split-thickness + ARF
- split-thickness + roll technique

■ **Punch procedure**

- contraindicated if
  - narrow keratinized tissue
  - deep countersinking
  - thick soft tissue

#### ■ Flap thinning

- stage 1 surgery
  - fixture installation
- stage 2 surgery
  - uncovering

#### ■ Correction of esthetic problems

- connective tissue graft
- onlay graft
- roll technique

### Stage III

#### Prosthetic procedure

- naturally looking gingiva
- naturally looking implant restorations
- concept of guided soft tissue healing
- balance between esthetic & maintenance

#### ■ Naturally looking gingiva

- esthetic gingival contours

- gingival flap management
- gingival expansion
- gingivoplasty
- papilla reconstruction

#### ■ Naturally looking implant restorations

- natural emergence profile
- adequate contour
- adequate contact points
- matching shade

#### ■ Concept of guided soft tissue healing

- guide the healing of soft tissue by temporary / final implant restorations
- early implant restoration placement before soft tissue maturation

#### ■ Balance between esthetic & maintenance

- emphasize esthetics in esthetic area
- emphasize maintenance in non-esthetic area

#### ■ Esthetic implant restorations

- subgingival implant shoulder
- adequate implant positioning
- stable peri-implant soft tissue
- esthetic soft tissue contours