Present State of the
Interdental Denudation
Procedure

by

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Interdental denudation in periodontal surgery is
the excision of all soft tissue in the interproximal
region, leaving the interalveolar bone bare. Some form of
dressing, such as foil or periodontal surgical dressing or
both, is placed over the denuded interalveolar bone.
Interproximal denudation is not new; it has been used
intentionally and sometimes unintentionally ever since
periodontal surgery has been practiced. It is an essen-
tial part of the infrabony technique where the bony
defect is not stuffed with some form of implant mater-
ial.

Brief History of Interproximal Denudation

Barkannan presented a technique of periodontal sur-
ery in 1939. She first cauterized with chemicals and
then removed the inflamed interdental tissue. After
dehidrom she pressed the gingival gingiva firmly
into the interdental spaces. Barkannan used neither
sutures nor surgical dressing.

Beube (1947) reported a technique for treating pro-
iodental pockets on the proximal surfaces of teeth that
he called "interdental resection." He used a narrow
interproximal knife to remove the gingival papilla and
a wedge-shaped mass of tissue, creating what he de-
scribed as an interdental socket. After debridement he
filled the socket with surgical dressing which was re-
moved in 6 or 7 days and replaced with a fresh dressing.
The second dressing was removed after a week, and the
patient was instructed to use an interdental rubber
point and toothbrush. The objective of this procedure
was to have healing and regrowth start at the base of
the denuded interdental socket and continue coronally.
The resected areas filled uniformly with new tissue, and
Beube reported that there was significant reduction in
pocket depth two months after surgical intervention.

Ratcliff and Raust (1964) reported a technique of
"Interdental Denudation" for management of inter-
proximal bony craters. They exposed the interalveolar
bone without exposing bone on the radicular surfaces
of the teeth. This was done by making a gingivectomy
incision which followed pocket depth markings which
were made only in the interproximal region; the gingi-
val papillae were removed, including the transeptal
fibers and the junctional epithelium. After the
incision was made, the remaining interproxin
was removed with a Wedelstaedt chisel. The
root surfaces and bony craters were "openly:
After removal of the interalveolar soft tissue
shaped incisions were made from the line a
contiguous teeth apically and a section of its
removed exposing the cortical plates of bone
the walls of the craters.

Round burs and chisels were used to rem-
estibular cortical bony lip of the craters, red
thickness of marginal bone if necessary, and acc
the interdental grooves. They pointed out that
was exposed only in the interproximal regions
over the root was not exposed. The wound was c
with a surgical dressing, as in gingivectomy.

It is not the purpose of this paper to pro-
critique of these reports but to point out th
represent complete treatment procedures. The
Dental denudation described in this paper is an
method of finishing the interalveolar soft tissue m
following any surgical procedure that has been u
the management of periodontal disease.

Ramfjord and Nissle (1974) described a meth
management of the interalveolar soft tissue after
periodontal surgical procedures with a flap appr.
They prepared the papillary gingival projection
exact coaptation with complete coverage of the in-
veolar bone. Their method requires precise inci
and preparation of the interproximal tissue for fit
ness, width, and length. Enough thickness is req
in the papillary projections for the suture to enter
epithelial side of the flap and exit through the in
papilla without going through to the periosteal sid
the tissue flap. The suture needle then enters the
edge of the opposite side of the papilla and e
through the epithelial side. If the suture passes co
pletely through the tissue, the papillary projections
buckle and reattachment is unlikely. Ramfjord plai
ed that if this exact closure could not be acce
plished, a better result would be obtained by co
pletely removing the papillary projections; thi
would be interproximal denudation.

Discussion

Today the inner beveled flap procedure is gen-
used as the basic approach in surgical interven-
tion in the treatment of moderate and advanced periodontal.
There is no consensus, however, on the incisions, pre-
paration of the soft tissue margin, or method of closing
the flaps. The most popular method is to make a scal
incision with retention of most of the papillary
gingiva for complete closure of the flaps around and
between the teeth. The objective is to cover the inter-
alveolar bony crest completely with the coapted
and sutured mucoperiosteal flaps.

The advantage of complete closure is rapid healin

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A. and B. Gingiva 2 months after surgical intervention with a flap approach and interdental denudation for a patient with loss of crestal bone. C and D, 1 month after a similar procedure for a patient with advanced bone loss. E. Gingiva of moderate bone loss 5 years after surgical intervention with interdental denudation.

Radiographic appearance of mandibular posterior region before surgical intervention with a flap approach and denudation. Below, 26 years after surgical intervention.
by first intention and, hopefully, reattachment. However, this method of flap management has some disadvantages: (1) An excessive amount of tissue is usually retained and a second surgical procedure, a gingivectomy, is often needed to reshape the gingiva after healing. If the papillary gingival projections are carefully trimmed so they are not too thick, they will often slough and result in interdental denudation. This is fortunate because it provides the desired physiologic gingival form. (2) The time to prepare and suture the fine papillary projection is detrimental to the marginal bone which is exposed if the flaps are sutured. Thin bony margins at the surgical exposure. The longer bone is exposed, the greater the amount of resorption and permanent loss will be.

A practical solution for this problem is to make gingival papillae with the initial incision and interdental spaces denuded. The incision may be made in a straight line or slightly scalloped for one replacement. The healed result is the same, without slight scalloping (Fig. 1). Interleaved flaps, backed up by spongeosa and do not recede during surgical exposure (Fig. 2). The replaced flaps always cover the marginal bone on the vestibular oral sides of the teeth.

The flaps are repositioned, that is, the tissue placed in approximately its original position. The reduction of pocket depth by removal of various amounts of gingivae with the primary incisions. The tenacious marginal tissue is sometimes erroneously called a gingivectomy. In a gingivectomy procedure, pocket depth determines the amount of gingiva that is removed with the procedure discussed here the width of gingiva determines the amount of marginal tissue removed. If the band of gingiva is narrow, the incision is made in the gingival crevice and only the papilla is removed; an adequate band of gingiva is also tained. Morris referred to this as a "repositioning flap." Macroparosteal flaps are secured with intermaxillary sutures through the interdental spaces. Flaps as "demonstrated" in common practice with multiple sutures; they are drawn snugly against the ab process with care taken to cover the bony margin around the teeth (Fig. 3). Absorbable catgut sutures are also used.

**Figure 3.** A and B, Interdental denudation with sutured flaps covering bony margins.

**Figure 4.** Left, Intrabony defect before treatment by gingivectomy and interdental denudation. Right, after intervention.
Interproximal denudation is applied around the teeth to pressure into the interdental spaces with finger pressure. The dressing is never packed with an instrument, and the objective is to press the material into the interdental spaces only enough for retention. All dressing materials have undesirable "foreign body" action, especially after a few days in the mouth, and the interdental space needs protection only from the outside. It is not desirable to pack or force dressing material deep into the interdental spaces against the interproximal bone and cementum. A tent of foil is used to block the dressing completely out of spaces with bony defects that have been treated with the hope of healing by regeneration instead of repair.  

Contraindications for Interproximal Denudation

The only contraindication for interproximal denudation is where an interproximal bony defect has been filled with an implant, and a soft tissue cover is needed for the implanted material. The implant probably delays the growth of epithelium apically. Treatment with retention and replacement of papillary tissue over interproximal defects which have not been filled with implant material has been erroneously compared with the intrabony technique, an essential part of which is the apical denudation (Fig. 4). Retention of soft tissue over interproximal defects without some barrier to epithelial growth almost assures failure of healing by regeneration. Complete denudation is not used when it is necessary to retain all vestibular gingiva for esthetic fleet, or is sometimes done in the maxillary incisor region.

Conclusions

Interproximal denudation, as described here, does not cause any greater postoperative discomfort than similar surgical procedures followed by complete soft tissue coverage of the interproximal bone. Healing is by normal intention in the interdental region, but this does not cause persistent postoperative problems and addi-

References