

CONSERVATIVE PERIODONTAL MICROSURGERY

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The medical millennial buzzword is conservative therapy. In dentistry we tend to place a greater emphasis on the preservation of tooth structure. The periodontium is often an afterthought, and conservative periodontal therapy is a relatively new concept. The periodontium is the frame to a great picture. If the frame is tattered, worn and neglected, the most beautiful picture within that frame will appear far less than beautiful.

The delicate nature of gingival tissue must be managed in a likewise delicate, careful manner. To do so, there are several devices and methods available to treat these tissues, however only one of these has all of the modalities necessary to be considered truly conservative. (See table on page 9) That unit is the Bident, a bipolar electrosurgery device. This technology grew out of the development in 1953 of spark gap bipolar coagulation by Dr. Leonard Malis, Professor and Chairman of the department of neurosurgery at Mt. Sinai Hospital in New York. The present solid state computer controlled generators were developed by Leonard and Jerry Malis and are manufactured by Valley Forge Scientific Corp. According to Dr. Malis, *"It was developed as a result of lab studies in nerve physiology. We noticed the difference in the time we had to wait after using monopolar surgery for normal brain function to return. After using bipolar, that affect was never noticed. I remember using a pair of forceps with the two halves split and insulated. We realized that we had astounding results when brain function returned to normal in a relatively short period of post-op time"*.

In the following case, a failing amalgam restoration has fractured causing leakage.



Fig. 1: Tooth #3 displays a large amalgam filling that is fractured at the disto-occlusal margin. It is also worn and decay has formed under the restoration causing the DOB portion of coronal tooth structure to fracture.

Resultant caries has also caused a portion of supporting tooth structure to fracture as well.

The traditional treatment of choice would be to prepare this tooth for a full coverage restoration, however in this case a more conservative approach is selected. A ceramic polymer (belleGlass, Kerr Danbury, CT) is selected as the restorative material of choice for an onlay.

In addition, a subgingival lesion is indicative of the need for some form of crown lengthening. Whether this is soft or soft and hard tissue therapy will depend on the location of the margin as it relates to



Fig. 3: After the majority of restoration is removed, a base is noted as well as the presence of caries.

the crestal bone. In this case gingival tissue has invaded the opening in the disto-buccal area. Soft tissue is removed using bipolar electrosurgery which allows the tissue to rapidly recover due to low heat output, avoiding damage and charring to adjacent surrounding tissue. This, in turn allows for extremely rapid healing of the surgerized tissue.



Fig. 4: The onlay preparation prior to creating proper margins.

Upon complete removal of non-healthy tooth structure, there are interproximal "spurs" of unsupported enamel that must be removed to allow access to healthy marginal enamel and interproximal soft tissue.

The interproximal tooth structure is removed allowing better access for labo-



Fig. 5: Contact has been broken and there is excessive bleeding on the mesial. This is due to a poor restorative margin in the existing restoration.

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ratory die sectioning as well as visualization and access of the tissue.

The tissue can now be treated using the proper bipolar electro-surgery unit and tip. In this case, access is easily achieved by using a 90° electro-surgical wire tip. The pocket is first sounded using a periodontal probe and the existing crestal position as related to the new margin is evaluated. The tissue is then reduced in order to create a clean marginal area for the impression and eventual insertion of the final restoration.

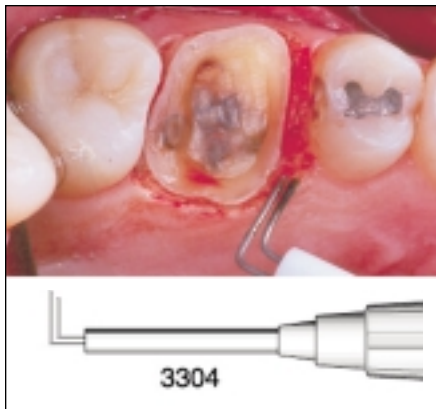


Fig. 6: The 90° wire is used to remove inflammatory tissue and all other tissue that exists at or coronal to the marginal preparation.

Upon completion of the preparation, a highly detailed final impression is made. The clearly identifiable margins represented as the intaglio of the prepared

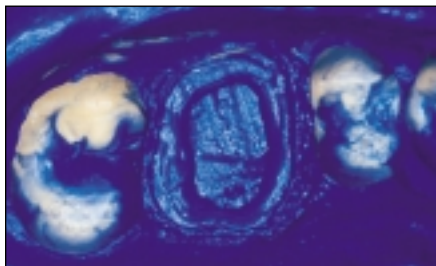


Fig. 7: An Impression is made immediately following the surgical management of the soft tissue using a bipolar electro-surgical device.

tooth is just one of the many benefits available when using bipolar electro-surgery.

Two weeks following the first appointment, the temporary onlay was removed and the tissue inspected. In order to place an indirect bonded restoration, the surrounding tissue must be fully healed. Otherwise, bleeding will contaminate the bonding process and excess tissue will come between the restoration and the preparation's margin causing future leakage at this interface. In addition, poorly managed tissue will become a chronic source of inflammation and bleeding creating periodontal disease. This can all be easily prevented, and corrected by using bipolar electro-surgical therapy. ●



Fig. 8: Tissue treated with bipolar

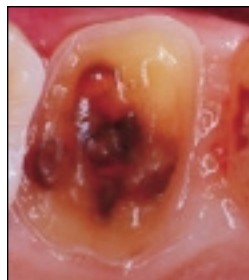


Fig 9: The tissue two weeks post-op. Note the healthy appearance indicative of conservative tissue therapy vis-à-vis deliberate use of bipolar technology

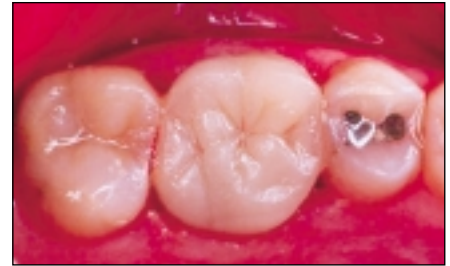


Fig. 10: The onlay upon insertion. (Bleeding is present following cement removal.)

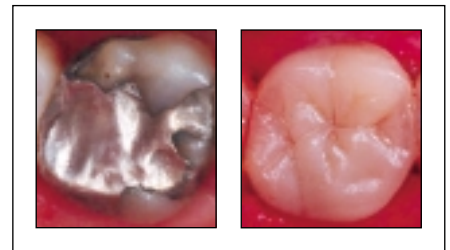


Fig. 11: Before and after

Ian E. Shuman, DDS, FAGD maintains a private practice emphasizing reconstructive and aesthetic dentistry in Glen Burnie, Maryland. He is also Associate Clinical Editor of Excellence In Dentistry's The Profitable Dentist Newsletter and currently evaluates and reviews dental products and materials. Together with Excellence In Dentistry, he is currently producing a continuing education video series featuring live clinical procedures. Dr. Shuman has published numerous articles on a variety of topics including restorative, aesthetic, endodontic, and reconstructive therapies. He also has an in-office, over the shoulder program that is designed to improve and strengthen clinical skills. This is successfully accomplished by demonstrating a variety of techniques using an array of products and materials. In addition, Dr. Shuman lectures both nationally and internationally. Dr. Shuman can be reached at 410-766-5104; e-mail: ishumandds@erols.com.