Predictable and minimally invasive removal of separated instruments

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Abstract:

Retrieval of separated instruments from the root canal system can be challenging and often frustrating. When a NiTi instrument fractures, it usually occurs at the apical one-third of the root canal, or beyond a curve in the canal. Consequently, the separated instrument often prevents the clinician from successfully preparing the entire root canal system, thereby resulting in compromising the treatment outcome. Although the reported success rate of instrument retrieval using ultrasonics is high, the nonstandardized protocol is still unpredictable in terms of removal time. Additionally, a major disadvantage of the traditional mechanical methods for instrument retrieval is the excessive removal of sound dentin during retrieval attempts, which may lead to iatrogenic accidents such as perforation and/or ledge formation. A recent study has shown that instrument retrieval is highly predictable if the standardized protocol is followed. In this presentation, the treatment planning based on CBCT imaging and the predictable and minimally invasive instrument retrieval protocol will be demonstrated and discussed.

At the conclusion, participants should be able to:

1. Describe the accurate diagnosis and treatment plan for safe instrument retrieval.
2. Make a predictable and minimally invasive preparation for instrument retrieval.
3. Recognize the most predictable and minimally invasive removal procedures of separated instruments.

Tunneled coronally advanced flap for root coverage and interdental tissue reconstruction

Dr. Po-Jan Kuo, DDS, MS, PhD

< Education & work experience **>**

2020 Diplomate-The Taiwan Academy of Aesthetic Dentistry (TAAD)
2018 Degree- Doctor of Philosophy in Medical Sciences
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Abstract

Gingival recession is defined as the apical shift of the gingival margin to the cemento-enamel junction, associated with attachment loss and exposure of the root surface to the oral environment. This condition may cause several problems, including esthetic concerns, dental hypersensitivity, root caries, non-carious cervical lesions, and difficulties achieving optimal plaque control. It may progress over time without management. Clinically, the most frequently selected techniques for root coverage were coronally advanced flap (CAF) and the tunnel technique (TUN). However, both methods have advantages and disadvantages, and clinicians are often faced with the choice of performing only one during root coverage procedures.

In addition, maximum precision is required in performing mucogingival surgery to satisfy particular esthetic demands; a surgical microscope that enhances complete visualization of the operative field may represent a valuable tool for root coverage. This presentation highlights the tunneled coronally advanced flap (TCAF) under the dental microscope for root coverage and papilla augmentation. This newly introduced technique combined the benefits of both the CAF and the

TUN. The CAF provides better access for flap advanced, and the TUN maintains more blood supply and nutrition without papilla incision. Based on various benefits of TCAF, more stable root coverage could be expected even in the recession defects with interdental attachment loss. Moreover, the clinical cases will be demonstrated and discussed to familiarize with this technique's clinical application and possibilities to improve clinical outcomes.

Use CAD-CAM composite to restore heavily damaged tooth structure with the aid of dental microscope

Dr.Hung YingKai

1.Graduated from National Yang-Ming university(2000~2006)
2. Intern training in Taipei Veteran General Hospital(2006)
3.Service at Jiepin dental clinic(2008~2013) in Taipei County,Taiwan.
4.Service at Elegance dental clinic(2014~2016) in Taipei City,Taiwan.
5.Owner of Hung's dental studio(2017~) in Taichung City,Taiwan.

Using indirect CAD-CAM composite to restore heavily damaged tooth structure is a good choice.Because this material has very excellent physical property when chewing and function, It's very easy to handle by dentist and dental technician.The most important thing is that it can be easily repaired in the pt's mouth.
With the aid of dental microscope,we can precisely control the range of caries invasion and avoid the non-necessary endo and perio problems.Also we can preserve as much tooth structure as possible. Have nice marginal sealing of restoration material,good contact area and emergency profile,create a harmony relationship between restoration and periodontal tissue and make it be easily cleaned by the patient and the hygienist.
Simple,precise,and effective are three main principles for me to use indirect cad-cam composite and dental microscope to treat my patient.

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The Development of a Telesurgical Support System Using 3D Digital Microscope

Junya Okawara DDS, Ph.D.

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Abstract
Periodontal microsurgery was successful under the support of remote dental specialist 50 km away. Our proposal for real tele-surgical support system based on communication technology will take the concept of tele-teaching a step further by enabling a dental specialist to guide the dentist without being physically present and in real time. Inexperienced dentists will be able to

provide microdentistry procedures that leverage the experience, knowledge and skills of dental specialists, if this system becomes widespread. Also this system can be applied to all microdentistry procedures. Development of these remote surgery systems will revolutionize the micro dentistry due to its multiple benefits.

We will introduce the cases of periodontal microsurgery , learn a new tele-surgical support system for dentistry in this session.

Dentistry with Show and Vision

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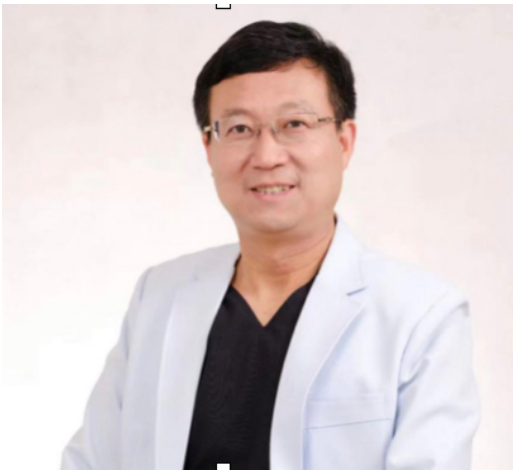
Microscopes have improved many dental treatments. Generally, microscopes are used often for root canal treatment, and high magnification and illumination help improve treatment accuracy.

In addition, using microscopes for purposes other than root canal treatment, it is possible to obtain beneficial effects for many points, not just improve treatment accuracy. For example, improvement of treatment posture and sharing information from the video recording. Among them, I will talk about taking records especially. Recordings can be effectively used in the following ways: improvement of satisfaction by patient explanation, prevention of misunderstanding, staff education, self-improvement, etc. If you are a microdentist, recording is a process that you do on a daily basis, but to make the process more effective, I will present important points and application methods.

Periodontal surgery in the microscope:faster or slower?
——better healing, less pain—-



Dr.Chen Dong,DDS,PhD,Prof

The use of microscope in periodontal treatments is not widely popularized. The main reason is that the periodontal clinicians don’t regard it as a faster way(the periodontal clinicians cannot use the microscope skillfully). However, it is the use of the microscope that allows us to achieve more precision, more comfortable experience and less pain.

Microsurgery is described as a modification and refinement of existing surgical techniques which is in order to improve visualization.

The theme of the talk is that as long as clinicians acquire more microsurgical skills, precise operation ,complete debridement and tension-free sutures will become easier to achieve.

Vital pulp therapy in irreversible pulpitis

Dr.Sun Yu D.D.S.

Endodontist

Graduated from West China Stomatology collage SiChuan University

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Permanent council member of PMP stomatology association of YunNan Province

Abstract

Dental injuries occur frequently in children between 8-15years, immature permanent teeth with a wide-open apex and exposed pulp can lead to poor prognosis. Young permanent teeth with necrotic pulp, periapcial diseases, or root resorption remain a big challenge for endodontists. This report introduces some cases with permanent immature traumatized teeth, using regenerative endodontic procedures under dental microscope,hope to provide some evidence for the long-term preservation for the traumatized young permanent teeth.

“Rethinking Endodontic Cavity Preparation”

Dr. Dongkyun Lee DDS, MSD, PhD.

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The endodontic cavity preparation to access the root canal system is closely related to canal cleaning and shaping, and obturation for successful endodontic treatment. The purpose of endodontic cavity preparation is to facilitate access from the margin of the access cavity to the apical foramen during instrumentation, and to remove all caries, restorations, calcified materials, pulp residues, necrotic materials, and visually checking the positions of all root canal entrances.
If the roof of pulp chamber is removed, the entrance to the root canal can be seen visually and tactfully. In addition, a method of straight-line access from the outside of the endodontic cavity to the root canal has been introduced. The endodontic files used in clinical practice may require unobstructed instrumentation as much as possible until they reach the root canal. Endodontic cavity preaparation performed to achieve this purpose can reduce the fracture strength of the tooth because the endodontic treatment process necessarily accompanies the loss of dentin. There are several options in the post endodontic restorations. Differences exist depending on the restoration method, there may be slight differences in the part of dentin considered important. The removal of the pulpal wall reduces the mass of dentin on the margins of the restorations. Therefore, it will be important to preserve the

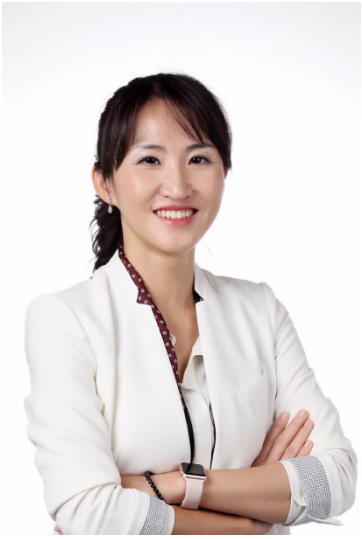
dentin during endodontic cavity preparation in order to use the endodontic treated teeth for a long time.

It has been reported that the more dentin remain after root canal treatment, the higher the long-term survival rate even without prosthodontic treatment. In recent years, various studies related to the endodontic cavity have been reported.

Even if the loss due to dental caries cannot be controlled, there is a possibility that the clinician can control the amount of dentin removal due to endodontic treatment. The form of endodontic cavity preparation established at the time of traditional endodontic treatment using the naked eye and manual instruments is important in the endodontic treatment process. On the other hand, with the development of a dental microscope and a nickel-titanium files, endodontic treatment with an improved aspect compared to the naked eye and existing instruments is possible. Therefore, I think that endodontic cavity preparation has some scope to consider in dentin preservation. In this presentation, I would like to rethink endodontic cavity preparation from the review the considerations.

" Enhanced vital pulp therapy protocol, what's the difference”

Prof. Minju Song D.D.S, MSD, PhD



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<Abstract>
The first pulp capping case using gold foil was reported in 1756. Entering the 20th century, Ca(OH)2 has been used as a gold standard as a pulp capping material, and pulp capping has become a representative vital pulp therapy. However, long-term clinical studies showed unfavorable outcomes such as tunnel defect of dentin bridge. As various limitations were reported, interest and related studies decreased.
Since the 2000s, however, studies related to pulp capping have increased again. There are a lot of studies reporting high success rates. They reported wider indications and reduced prognostic factors compared to previously performed pulp capping. We can expect that this favorable change might be due to the introduction of biocompatible materials such as mineral trioxide aggregates (MTA) and the re-evaluation of the healing ability of exposed pulp tissue.
The principle of the pulp capping procedure did not change. However, the outcome of recently performed pulp capping definitely has a good prognosis. According to the European endodontic treatment society, the enhanced protocol (using of the microscope, disinfection irrigant, and CSC) leads to a high level of success even after complete caries removal and pulp exposure. Today, I’d like to review the process of enhanced protocol and share them with you. If you have a more advanced understanding of pulp capping than before and have confidence in the procedure, it will be a good treatment option that you can fully consider before performing root canal treatment.

Keep Looking Don't Settle
—Rethinking The Microscope—

Jun Mitsuhashi

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1989 DDS from Niigata Univ.
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The spread of microscopy in dentistry has been spectacular over the past decade. In particular, its widespread use in the Asian region is noteworthy from a global perspective. However, the number of microscopes sold is only a few percent of the total number of dental clinics, and the reality is that root canal treatment without the use of a microscope is still commonplace.
What about the medical field, which is the predecessor of microscopic treatment? For the last century, we have not been able to perform any of these surgeries without the use of a microscope, such as tympanoplasty, cataract surgery, and cerebral aneurysm clipping.
Why has dentistry lagged so far behind in terms of the widespread use of microscopy? One of the reasons is that the microscopes used in dentistry are unique.
In 1953, the world's first commercially available operating microscope, the OPMI 1, was released by Zeiss, and it was equipped with a rotary magnification changer called a Galilean changer, coaxial illumination, and a suspension system. This was the foundation on which the development of operating microscopes began.
In 1967, 14 years after the launch of the OPMI1, a revolutionary improvement in the history of operating microscopes was made with the appearance of the Motorized Microscope, a motorized version of the Stepless zoom system that enabled foot control of magnification and focus to keep looking during treatment.
The motorized microscope gained overwhelming support in the surgical field, and became a standard feature of surgical microscopes from then on. The manual microscope is now used for outpatient examinations, suture extractions, cleaning, and other medical examinations.

Currently, most dentists around the world use manual microscopes, and the appearances of motorized microscopes has not progressed. This is one of the reasons why the use of microscopes in dentistry has not spread.

In this lecture, the merits of using a motorized microscope in dentistry will be explained, and the future of microscopic dentistry will be discussed through demonstrations of the microscope in practice.