Midline diastema closure using the front wing technique

By Dr. Walter Devoto, Italy

About the Case
A 35-year-old female patient expressed a desire to optimize existing composite restorations on her maxillary central incisors, which had been placed 15 years previously to close her diastema. A silicone key had been used for guidance. No tooth preparation was carried out, as the composite was bonded to the tooth structure.

Challenge
The surface of the restorations showed slight discolorations which were removable by polishing. The shape of the teeth was acceptable, but not perfect. A decision was made to retreat her in a non-prep, single-shade approach. The main goal was to create a more natural shape. The front wing technique invented by the StyleItaliano team was used. This approach involved freehand modeling of the vestibular part of the tooth, which was easily accessible. Afterward, material was added to the palatal side, and anatomical matrices were employed for shape optimization.

Outcome
The technique worked beautifully to close the diastema. Despite freehand modeling, it was much easier and more precise than using a palatal silicone index. In addition to the natural shapes that were achieved, 3M Filtek Universal Restorative blended well with the surrounding dentition, making the restorative work indistinguishable.

About the author
Dr. Walter Devoto graduated with honors in dentistry and dental prosthesis in 1991 at the University of Genoa, Italy. He is particularly interested in the fields of conservative dentistry and esthetic dentistry and runs his own private practices in Sestri Levante and Portofino. In addition, he is collaborating with diverse prestigious dental offices throughout Europe, which specialize in esthetic dentistry. He has worked as a teacher and demonstrator at the University of Genoa and as a lecturer at the universities of Siena and Madrid. Now, he is a lecturer at the International University of Catalania, Barcelona, Spain, and visiting professor at the Aix-Marseille University in Marseille, France.
What if a composite could make your busy days easier?
**Mastering black holes with premium endo-brands**

**By Coltene**

COLTENE is a global leader in the development, manufacture, and sale of consumables. As the inventor of controlled memory files with the latest technology, obturation and post systems. As the leading company in the field of endodontics, Coltene offers a wide range of products, encompassing three segments. This results in solutions for almost all dental treatments ranging from infection control to tooth preservation and treatment efficiency. The COLTENE Group strengthened its position in the Endo-Segments with the acquisition of the French expert MicroMega. The now combined product portfolio offers an even more customized range of files and endodontic equipment.

Product range for new endodontic dimensions:
- HyFlex EMD and CM, MicroMega One Curve and MicroMega 2Shape NITI file systems, allowing the fast and safe instrumentation of the various root canal anatomies according to the preferences of the user.
- HyFlex paper and gutta-percha points, which perfectly match to the HyFlex CM and HyFlex EMD NITI file systems.
- Well-proven CanalPro and MicroMega Dual Move endo motors, completed by CanalPro and Dual Post Apex Locators for working length measurement.
- Innovative modular CanalPro rinsing solution system and MicroMega EnodUtra for ultrasonic activation to ensure an optimized disinfection and long-term successful treatment.

Additionally, the COLTENE Dental Group offers a wide range of products, encompassing three segments. This results in solutions for almost all dental treatments ranging from infection control to tooth preservation and treatment efficiency. The COLTENE Group strengthened its position in the Endo-Segments with the acquisition of the French expert MicroMega. The now combined product portfolio offers an even more customized range of files and endodontic equipment.

**New SmartLite Pro – more than just a curing light**

**By Dentsply Sirona**

Primarily, a curing light is a device to polymerize restorative materials. But it can be so much more, as shown by the new SmartLite Pro from Dentsply Sirona. It is an outstanding tool that allows for cutting-edge curing performance. In addition, it features a forward-thinking modular concept with quick-connect tips for a variety of clinical indications. Last but not least it exhibits an extraordinary design combining high-tech elements and robustness with a lightweight pen-style look and feel.

The Smartlite Pro is a unique modular curing device in a remarkable, all-metal housing.

**Designed to perform**

Once you have taken the new curing light into your hands you will immediately feel a lightweight and well-balanced pen-style design which is beautiful in each of its details. The Smartlite Pro’s housing is fabricated of medical-grade stainless steel and anodized aluminium providing for robust durability and elegant simplicity.

The user will love the easy and intuitive operation with only one single button. Feedback is facilitated by precise audible and tactile signals. Its clinical performance in everyday practice is unsurpassable.

**Top of the class in curing**

Smartlite Pro features newly engineered state-of-the-art optics to provide a homogeneous beam profile for a uniform curing performance. Unlike many conventional lights, the new device has an even and focused light distribution over the whole curing area. Moreover, the Smartlite Pro features an active light output diameter of 10 millimeters. This ensures that the beam completely encompasses even fillings with a large horizontal extension. The leading clinical performance is accompanied by a comfortable handling. The functional, rotatable tips and the low-profile head with four high-performance LEDs guarantee easy clinical access even in hard-to-reach areas of the mouth. The dentist experiences excellent intraoral control and will easily maintain a steady hand at the proper angle.

**Constant availability thanks to innovative battery management**

The Futuristic multifunctional charging base features a built-in radio meter and room for extra tips. The intuitive battery management system comes with two quick-connection batteries for constant availability. Cutting-edge lithium ion phosphate cell technology ensures that the dentist may enjoy a full day of clinical operation with only one charge.

**Thinking ahead**

The modular versatility expands the options beyond the scope of a pure curing light and includes various other indications. For example, the user may easily change from the curing tip to the transillumination tip. Within a few moments he holds a diagnostic aid for the visualization of interproximal caries and cracked teeth in his hand. And in the area of root canal treatment this tip will provide for endo access illumination.

But the best news is: The platform technology of the Smartlite Pro offers a forward-thinking system, which gives way to numerous future upgrades and will open up new worlds of indications and applications. The Smartlite Pro is one of the most versatile dental instruments because it features leading quality of cure, and yet is so much more than just a curing light.

**Dental study of ancient chewing gum informs about oral microbiomes of the past**

**COPENHAGEN, Denmark:** Though its popularity and constituent ingredients have changed over time, chewing gum has been used by humans for thousands of years. A new study out of Denmark that analysed a 5,700-year-old chewing gum sample from the pitch, demonstrated its potential as a new source of ancient human genome from the pitch, demonstrating its potential as a new source of ancient DNA.

The pitch was found during archaeological excavations carried out by the Museum Lolland-Falster at Syltinth in southern Denmark, and subsequent analysis was conducted by researchers at the University of Copenhagen. Radiocarbon dating of the pitch helped to place it as a specimen from the early Neolithic period in Denmark, while DNA sequencing revealed that it was chewed by a female who was more closely genetically related to the hunter-gatherers of mainland Europe than to those who populated central Scandinavia at the time. It was found that she probably possessed dark skin, dark hair and blue eyes.

Traces of hazelnut and duck DNA were also identified in the pitch, suggesting that these may have formed part of the individual’s diet. The researchers also successfully identified DNA fragments from several bacterial and viral taxa, including the Epstein-Barr virus, which can cause glandular fever.

“[Jetholm] is the biggest Stone Age site in Denmark and the archaeological finds suggest that the people who occupied the site were heavily exploiting wild resources well into the Neolithic, which is the period when farming and domesticated animals were first introduced into southern Scandinavia,” said Dr Thes Jesen, a postdoctoral student at the University of Copenhagen’s Gloobe Institute and co-author of the study.

“We managed to extract many different bacterial species that are characteristic of an oral microbiome,” added Dr Schneider, associate professor at the Gloobe Institute.

“Our ancestors lived in a different environment and had a different lifestyle and diet, and it is therefore interesting to find out how this is reflected in their microbiome,” he continued.

Though still a relatively new form of analysis, DNA sequencing of pitch, several questions still remain—including the question of what the purpose of chewing it was. Some researchers have suggested that it may have been a method for making the pitch more pliable for further toolmaking purposes, while medicinal and hunger-suppressing uses have also been put forward for consideration.

The study, titled “A 5700-year-old human genome and oral microbiome from chewed birch pitch,” was published on 17 December 2019 in Nature Communications.
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Perform at your best in diagnostic and restorative
Reduce glare and create beautiful restorations

By Hu-Friedy

Having a clear and precise diagnosis is needed in order to correctly plan the necessary treatment and sight is the first sense that every clinician uses, therefore having the best possible vision is crucial.

With this in mind, Hu-Friedy, the global leader in dental instrument manufacturing and infection prevention solutions, leveraged the success of HD Mirrors, Blackline and XTS product lines, to create HD Black Line Mirrors. This innovation was engineered to optimize clinical outcomes by delivering superior visibility throughout any dental procedure.

Designed for enhanced performance, Hu-Friedy’s HD Black Line Mirrors have a Diamond Like Carbon (DLC) coating, which reduces glare up to 95% compared to a standard metal mirror handle and handle. This helps to reduce strain and fatigue, creating a more ergonomic mirror, as the user does not need to adapt their viewing position due to unwanted shine produced by traditional metal mirror handles or frames.

Additionally, the black matte finish provides enhanced contrast and visual acuity within the oral cavity. This creates a distinct contrast between the instrument, the tooth and/or the surrounding tissue allowing for easy identification intraorally.

So, the DLC coating in combination with the superior brilliance and color of Hu-Friedy’s proprietary HD Mirror glass facilitates quicker and more accurate visibility of the mouth. Tami Wardrope, RDH, MEd, from USA, states about the product: “I wear loupes with a LED light and noticed a significant difference in the amount of glare reflecting back into my field of vision during patient care, allowing me to see more detail. I realized, at the end of my clinical day, I had less eye strain when I used the HD Black Line Mirrors.” (Fig. 1).

”In looking to enhance our product offering for aesthetic dentistry, we identified the need for a resilient composite instrument which would allow clinicians to use brush-like strokes as they create superﬁne details during biomimetic restorative dentistry,” said Jennifer Nemeth, Senior Product Manager at Hu-Friedy. “By introducing NiTi into the design, we were able to create an extraordinarily ﬂexible, wafer-thin composite instrument unlike anything we currently offer. We are beyond excited for clinicians to experience the ﬂex of Akro-Flex™.”

Akro-Flex™ is an innovative, incredibly ﬂexible spatula for restorative dentistry. The unique composite instrument features hyper- thin working ends made from Nickel-Titanium (NiTi) – an alloy known for its super elasticity. The thin, duriﬁed instrument ﬁts easily into narrow interproximal spaces allowing for better visibility compared to traditional composite instruments. (Fig. 3).

The resilient working ends rebound back to its original shape after use and are excellent for creating fine anatomical detail with delicate, artistic strokes during aesthetic restorations (Fig. 4).

To learn more about HD Black Line Mirrors and Akro-Flex™ visit www.hu-friedy.eu or contact our local distributors.

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Radical oral intervention not necessary before stem cell transplants, study says

By Dental Tribune International

BASEL, Switzerland/HELSINKI, Finland: Hematopoietic stem cell transplantation is used to treat cancer and severe blood and autoimmune diseases. Owing to slow immune system recovery after the transplantation, patients have a heightened risk of infection. However, a recent study has reported that the presence of acute or chronic oral foci of infection before the transplantation does not affect the patient’s survival rate within six months of the procedure.

The study was conducted by the University of Helsinki, the Helsinki University Hospital, the University of Basel, and the University Hospital Basel. It involved patients who had been treated at the University Hospital Basel, of whom 341 had received an allogeneic stem cell transplantation and 125, an autologous stem cell transplantation.

The procedures were carried out between 2008 and 2016. Before the transplantation, all patients underwent a clinical and radiographic dental examination to identify any potential foci of infection and the number of missing and filled teeth.

A total of 51 stem cell transplant patients died within six months of the procedure. However, the data showed that the foci of infection, the number of missing or filled teeth, and the cases of periodontalitis identified in the examinations were not associated with the patients’ lower survival rates.

“Contrary to our assumptions, untreated oral infections had no connection with post-stem cell transplantation survival during the six-month follow-up period. Another surprise was that they had no link with any serious infectious complications occurring during the follow-up period,” said lead author Prof. Tuomas Waltimo, assistant lecturer in the Department of Biomedical Engineering at the University of Basel.

“However, the patient’s health permitting, and if the wound has enough time to heal before chemotherapy, the radical treatment of such infections is justified. Other than that, conservative, non-radical treatment that eliminates the infection carried out by a dentist familiar with the case appears to be the lowest-risk option in terms of infections and bleeding complications,” Waltimo noted.

According to Waltimo, the study findings cannot be applied to any other patient groups, especially not to patients suffering from cancer in the region of the head and neck, or those with a heart valve or a prosthetic joint.

The study, “Associations of oral foci of infections with infectious complications and survival after hematopoietic stem cell transplantation,” was published on 28 December 2019 in PLOS ONE.