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The many possible applications of air polishers in dentistry.



Roosa Prinssi, Product Manager,
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Alongside with ultrasonic equipment and hand instruments, air polishers have long been used in periodontology. The air polisher was introduced in periodontology in the late 70s as a quick and easy remover of discolorations and plaque (1). Today, the use of air polishers has increased both in periodontology and other areas of dentistry.

Initially, the cleaning powder used was a powder containing aluminum oxide particles. Since the 1980s, sodium bicarbonate particles have been in use for periodontal prophylactic treatment. Later, in 2003, glycine particles were

introduced. Today, many of the small particles in the cleaning powder are effective and less harmful for soft and hard tissues, and they are relatively easy to use. Air polishing is also a patient-friendly method.

The function of an air polisher is based on the cooperation of the powder particles, water pressure and air pressure used in it. Its efficiency depends on many things, such as the water/air pressure, the amount of powder in relation to the amount of water, as well as the size, shape and hardness of the powder particles. The abrasive impact of the air polisher depends on the working distance and the powder jet direction.

The use of air polishers in dentistry

The air polisher is suitable for the removal and dissolution of biofilms. It is also used to clean discolorations. Air polishing is a safe and effective form of treatment. The right way of working and the right choice of cleaning powder will ensure safety. The air polisher is worked with a back and forth sweeping motion and is directed away from the soft tissues. The air polisher is also a time-saving way of working. It is well suited for use in oral health care, periodontics treatment and maintenance therapy.

The air polisher is suited for subgingival treatment, if the cleaning powder used is of type finer and gentler powder that contains glycine particles (2).

Prior to periodontal surgery, the air polisher can be used to clean the entire dentition. It is also ideal for cleaning the extensions of implants, without damage to the implants. Air polishing with sodium bicarbonate has proved good results with surgical procedures.

In addition to periodontology, the air polisher can be used in other areas of dentistry. In restorative treatment, tooth surfaces can be treated with the air polisher prior to etching and bonding. In orthodontics, brackets and surfaces of other orthodontic equipment can be cleaned. In aesthetic dentistry, dental cleaning before bleaching can be done with the air polisher.

Effectiveness and visibility with LM-ProPower AirLED

The LM- ProPower AirLED polisher is fitted with a powerful LED light that provides optimum visibility for the working area, without unnecessary strain to the eyes. Six separate light sources distribute the light evenly. Optimized light color temperature (blue and white) improves the visibility of plaque and discolorations on the tooth surface.

The focused powder jet is easy to direct to the desired area, thus avoiding to damage the soft tissues. The carefully targeted nozzle also prevents the powder to spread outside the mouth. The LM-ProPower polisher is available with two different nozzles.

The LM-ProPower AirLED handpiece has a removable silicone ErgoGrip shell. The silicone shell is easy to change and autoclave after each patient. The ergonomic design of the handpiece ensures a grip that is of good fit, secure and relaxed. Ergonomic work is also helped by the foot pedal, which allows working while keeping your eyes on the patient all the time.

The powder container is easy to fill and clean. The transparent container allows for monitoring of the amount of powder. The auto-cleaning function of the device blows air as well as water through the device/tubing. It is activated with one push of a button. Changing the handpiece nozzles is done by turning the nozzle off from the handpiece. Careful cleaning of the air polisher is important to prevent clogging.

Kimmo Suomalainen, Associate Professor, DDS:

"I use the air polisher in my work on a weekly basis for the cleaning of both supra- and subgingival tooth surfaces. It is particularly well suited for the removal of soft coatings from tooth surfaces before all kinds of measures related to periodontal treatment. The use of an air polisher can reduce the microbial load of the mouth and promote the soft tissue healing. The advantages of the LM-ProPower are the powerful LED light, aligned powder jet, ergonomically shaped handpiece and hygiene.

While working with the air polisher, I recommend protecting the patient's eyes and clothing from powder dust. The buccal mucosa and the opening ducts of the parotid salivary gland should be protected, for example by parotis sheets. Vaseline can be applied to the patient's lips to prevent the lips from drying out during treatment. A local anaesthesia of the gingival margins makes the treatment as easy on the patient as possible. It is also a good idea to keep a finger or a mouth mirror behind the tooth to be cleaned, in order to prevent the powder jet from hitting through the teeth gaps directly on the soft tissues. "



ATTACHMENTS:

1. Guttman, ME. Air polishing: a comprehensive review of the literature. J of Dent Hyg 1998; 72(3): 47-56.
2. Petersilka GJ. Subgingival air-polishing in the treatment of periodontal biofilm infections. J of Periodontology 2000, Vol. 55, 2011, 124-142.