

ToothTalk

MICRO DENTISTRY

The next step, after the magnifying glasses used at Avance Dental for all procedures, is the microscope with multiple zooming (in our case up to 22 times). Naturally the treatment with the microscope is used the most for root canal treatment because the root canal system is with its segmentation the minutest and the most complex structure in the tooth overall. It is also possible to connect it, as the benefit, to every procedure, from the first and prevention teeth checkups to the making of photocomposed fillings. We can detect better the leakage between the tooth and extracellular matrix (the band for filling production) with this equipment and avoid possible teeth treatment complications.

The microscope is used during the teeth reshaping in prosthetics jobs (the crowns, bridges) where we can discover the incorrectness on a prepared tooth. The afterward checkup of prosthetic work correctness in the clients mouth before the cementation is an important part of the procedure. Thanks to the perfect illumination of the surgical field by intensive xenon light we have the possibility of



better recognition of the tooth structure, from the tooth surface to the deep cavity. It is possible to treat the root system through the current crown that would be impossible without intensive light. Even though, it is possible to check all the root canal up to its very end under certain conditions. The determined rule in modern dental care is – We cannot treat anything what We do not see. All the steps of current dentistry lead the way – seeing more = curing better.

Moving away from the Uncertainty

For quite a long time the root canals has been “the work with uncertain results”. The dentists could have had seen only the entry of the root canal and the rest has been the question of the touch and experience. If we take into consideration that 80% of the information the person gets visually, this way the treatment has been very ineffective. The blunted teeth have been perceived as a potential source of the infection for a long time, the pillars can fail at any time. We can still find out today when the patients before the joint replacement or graft surgery lose their teeth with the root filling without any discovery, so called “dental follicle” because of the concern of inflammation expansion during the immunosuppressive therapy needed for keeping the transplanted organ. It has been a surely reasonable concern in the past because in the era before the surgical microscopes the dentists could have been solving the complications during the pecking of the root systems only by touching. This way they could have been removing the cranked tool in the crook twists for the miniature canals, conclude the perforations, make a passable closed root canal was basically impossible. That is why the treatment has been unpredictable and there have had been always a lot of doubts. The introduction of the surgical microscope into the dental care significantly increases the success of the root canal treatment. The surgical microscope is not the only self-saving tool that only solves all the problems in the dental office by its presence. Nevertheless, it is an irreplaceable helper in the hands who keep constantly educating and tries to use the quality of the microscope for work. The microscope moved the barriers and the possibilities of the dentistry further. The usage of the microscope, based on the gained data, increases the success of the root canal treatment over 90%.

Extensional advantage during the working flow with the microscope The microscope allows detecting and searching the entry of the root canals, their throughput and segmentation. Also, it allows to peck properly all the potential spots where the infected tissue could have remained. A lot of teeth have their anatomic specialty, departing from the learned rules. If we don't know about them, we don't see them and we cannot cure them correctly. If we work under vision control, we are able to be more careful and we can keep the healthy tissues we can see and remove only the infected parts. The work in the root with the surgical microscope is also avoiding the risk of root canal tool cranking or the risk of perforation (the perforation of the root canal wall). It is also possible to discover the cracks in the root canal walls which could cause the treatment failure in the future.

For the teeth where the “classic treatment method” has been

already used and failed for the root canal system there was the infection ensued around the root portend the swelling and permanent conflict of the body immunity with the focus of the infection. With the help of the microscope it is possible to remove the current infected root filling, the whole root canal system wash properly off because some of the spots is not possible to clean mechanically and we have to use active washing for effective cleaning of the root canal system. We are also able to remove some of the cranked root canal tools with the surgical microscope, eventually to solve the complications as the perforation of the root canal wall. These complications are not possible to solve every time, each case must be considered individually and decides if the root canal treatment is possible and it will be helpful for the patient.

PIEZOSURGERY



Piezoelectric Bone Surgery

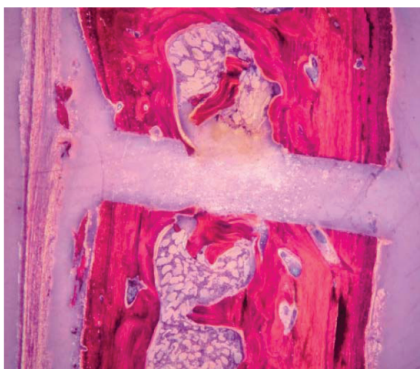
Piezosurgery (piezoelectric bone surgery) is a technique of bone surgery which is gaining popularity in the field of dentistry in the recent years. This device is being used in osteotomies, periodontology and implantology, and oral surgical procedures. Piezoelectric ultrasonic vibrations are utilized to perform precise and safe osteotomies.

Piezoelectric equipment can be used for endodontic surgery (removing root canal fillings and fractured instruments from root canals), periodontology and implantology (scaling subgingival plaque, ostectomy and osteoplasty procedures to create positive physiologic architecture of bone support of the involved teeth, bone grafting of an infrabony periodontal

defect, implant site preparation, implant removal, crestal bone splitting, bone osteotomy or corticotomy, harvesting bone blocks and bone grafting, sinus lift procedure, ridge augmentation, and ridge expansion), tooth extraction, cystectomy, maxillofacial surgery, surgical orthodontic surgery, otological surgery, Dental neurosurgery. The advantages of the piezo-osteotomy can also be applied to pre-implantologic surgery for augmentative purposes, for example, sinus floor elevation carries a much lower risk of perforation or injury to the mucous membrane since soft tissues cannot be damaged with this method and also auto transportation of unerupted third molars.

Clinical benefits Unlike traditional cutting instruments, PS offers the possibility of a cut with the following characteristics:

- 1 Micrometric, in as much as the insert, vibrates with a range of 60–200 μm at a modulated ultrasonic frequency, which, while cutting, maintains the bone constantly clean, thus avoiding excessive temperatures
- 1 Selective cutting, in as much as the vibration frequency, is optimal for the mineralized tissues (in fact, to cut the soft tissues, different frequencies are required)
- 1 Safe, in as much as the reduced range of the micrometric vibrations, offers the possibility to perform surgery with very great precision. The cut, in fact, could be controlled as easily as if drawing an outline. This enables osteotomy to be performed even in close proximity to delicate structures, such as vasculo-nervous structures, in general, without damaging them.



- high surgical control
- precision and safety
- clinical and histological advantages

Surgical control with PS is maximum as the strength required by the surgeon to effect a cut is far less compared to that with a drill or with oscillating saws. In fact, burs controlled by a micromotor require greater strength, against the rotating couple of the instrument, obtained by applying increased pressure of the hand. As a result, surgical sensitivity is reduced, especially when there are structures presenting different mineralization or even more complex soft tissues, where one runs the risk of losing control of

the latter on the drill's stem. Furthermore, oscillating saws, with macrovibrations, require a contrast action which is necessary to perform a cut; even though guaranteeing excellent linearity, they do not allow control of the depth of the cutting, at the sides or in the center, and, therefore, it is often necessary to complete the incision with a scalpel and hammer. From a clinical point of view, the PS system offers three different power levels:

- Low mode indicated for apical endocanal cleaning in orthodontic surgery
- High mode useful for cleaning and smoothing the radicular surface
- Boosted-mode indicated in bone surgery, necessary in performing osteotomy and osteoplasty

SINUS LIFT TECHNIQUE



- safer opening of the lateral window
- fewer membrane perforations
- safe detachment of the membrane
- fewer post-operative complications

IMPLANT SITE PREPARATION



- safe preparation respecting to the inferior alveolar nerve
- less post-operative inflammation
- faster healing and higher primary stability
- possibility of immediate post-extractive implant site prep

Ergonomics

Experience and repeating of the movements form the basis of surgical movements and this is the principal element to be taken into consideration when starting to use PS. In fact, in piezoelectric surgery, the surgical handling required is completely different from that used with the drills and oscillating saws, as the piezoelectric cutting employs microvibrations. It thus follows that in order to increase the capacity of cutting, pressure of the hand should not be increased (as with bone drills or saws), since above certain limits, an increase in pressure prevents the microvibration of the insert; the energy not used for cutting is thus transformed into heat which, if prolonged, can cause damage to the tissue. Thus, in order to avoid a surgical obstacle, it is necessary to calculate the pressure according to the speed of the insert.

Advantages

1. Piezoelectric bone surgery seems to be more efficient in the first phases of bony healing; it induces an earlier increase in bone morphogenetic proteins, controls the inflammatory process better, and stimulates remodeling of bone as early as 56 days after treatment
2. It provides faster bone regeneration and healing process
3. Great control of surgical device
4. Selective cutting and minimal operative invasion
5. Reduced traumatic stress
6. Decreased postintervention pain, and
7. No risk of emphysema.

EXTRACTION/EXPLANTATION



- bone preservation in impacted or ankylosed root and third molar extractions
- safe in proximity to the inferior alveolar nerve wisdom tooth extraction
- reduced amount of facial swelling and trismus 24 hours after surgery
- immediate implant site preparation

Our Team >>>

Dr Mohit Dhawan M.D.S

F.I.C.O.I(USA), MAAO, M.A.O.I

(Prosthodontist & Implantologist)

Dr Rosy Dhawan M.D.S

(Endodontist & Restorative Dentist)

Dr Kavita Mehta M.D.S

(Orthodontist)

Dr Abhishek Sharma M.D.S

(Orthodontist)

Dr K.P.S Dodhy M.D

(Anesthetist & Critical Care Specialist)

Dr S. Bains D.D.S(US)

(Restorative Dentist)

Mrs. Anita Dental Assistant

Mrs. Amita Dental Assistant

Ms. Vandana Dental Assistant

Mr. Kamal Receptionist

If undelivered please return to:




AVANCE
DENTAL CARE



#1197, Sector 21-B
Chandigarh (India) Pin -160021
US/Canada 001-647-799-2663
India : 0091-708-780-0016
0091-987-830-0016

www.avancedentalcare.com

E-mail : health@advancedentalcare.com

Opening hours Monday – Sat 10.00am - 6.30pm