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The Dental Probe

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Editorial

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DENTAL ASSOCIATION OF MALTA
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By Dr David Muscat

Dear colleagues,

It has been quite an eventful year. We have seen a draft of clinic standards which are to be introduced as from next year. In 2016 there will be mandatory CPD with accreditation.

The DAM is working on these issues. The DAM has also taken an active role in trying to stem the tooth whitening clinics run by beauticians.

We have alsoa embarked upon a KA1 scheme where with the use of EU funds which we have obtained we will be sending some dentists to Italy for a week of postgraduate experience in top dental clinics in Rome.

We have our Christmas party on 4 December at the Quarterdeck bar at the Hilton on Friday 4 December. In April 2016 we are planning a hands- on endodontic course.

The cover picture is a painting by Dr Noel Manche , a very talented committee member.

I would like to thank the DAM committee for all their hard work through the year. Sadly Dr Lino Said has decided to call it a day. His organization of DAM events has been spectacular and he will be sorely missed. His position on the committee has been filled by Dr Audrey Camilleri who had been co-opted at the last AGM. Hope to see you at the Christmas party where there will be a grand raffle for charity.

I wish you all a Merry Christmas and a Happy new Year.

Best regards,

David

Dr David Muscat B.D.S. (LON)
Editor / President, P.R.O. D.A.M.


Karkura tax-Xitan


Gozo astro camping


Tal-ħamrija


Slugs Bay

NATURE'S MOODS By Etienne Cassar

I fumble to switch off the alarm clock... it is 4am and outside is windy, wet and dismal... getting out of a warm bed needs willpower and discipline. One really questions the sanity of it all... is it really worth the effort to venture out in inclement weather in order to attempt to capture landscape photographs? Yes, for me, it definitely is! I am a rather reserved and withdrawn person, and at times find it difficult to engage with certain genres of photography, such as portraiture or street photography. Yet, the photographic medium is fascinating because everyone of us can relate to a genre that embodies one's mood and feelings. I have found my niche in landscape work.

Soon after I make that initial hesitant step of getting out of bed, drinking a strong coffee, grabbing my equipment and venturing out, it all becomes suddenly worthwhile. Arriving at the location, I very much feel like a primordial human being who is gazing at the forces and beauty of nature. Looking out at the heaving waves, feeling the wind and salt spray on my face and gazing in awe at the rising sun, the scene must be very similar to the same one my ancestors would have witnessed thousands of years before. It is the play of light on the restless waves. It is that sudden shaft of light beaming out from the dark clouds. It is the thrill I feel on attempting, alas, mostly in vain, to fully harness and capture in one simple, fleeting image the elusive sensations I feel.

It is extremely difficult, if not impossible. One cannot convey the sense of smell or the feeling of the wind in an image - yet I try, and keep trying. The challenge and the struggle is worth it and it can all come together in a short magical instant. Yet, more often than not, whilst later viewing the images I have captured, they fail to provide me with the same exhilarating feeling that invariably envelopes me while on location. The quest continues...

THE IMPORTANCE OF RESTORING CARIOUS PRIMARY TEETH

Dr.Audrey Camilleri, Paediatric Dentist, Smile for Health 2015

Continues on page 6.

THE IMPORTANCE OF RESTORING CARIOUS PRIMARY TEETH

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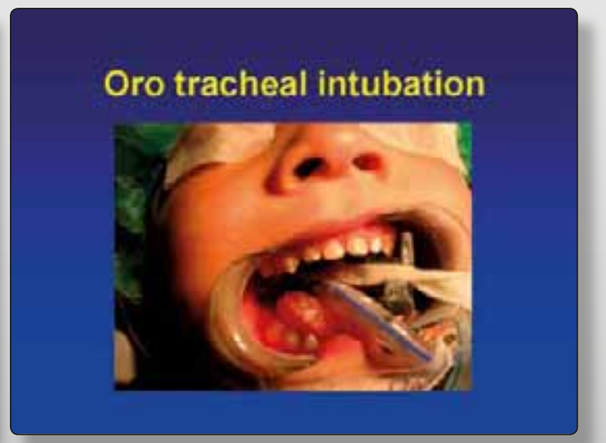

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Non-stick effect for efficient contouring

Ivoclar Vivadent has developed the innovative modelling instrument OptraSculpt® Pad in order to meet the demand for efficient processing of highly-esthetic composites.

Despite the excellent mechanical properties of composite materials, their contouring remains a very demanding task for dentists even today. Highly esthetic composites, in particular, sometimes demonstrate a very adhesive consistency due to their filler composition, and they are thus more difficult to shape.

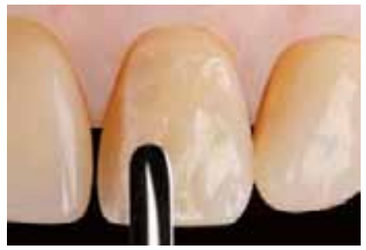
OptraSculpt® Pad is a contouring instrument with special foam pad attachments, which is designed for the efficient, non-stick forming and shaping of composites. It is especially suitable for the contouring of class III, IV and V restorations as well as of direct veneers.

Suitable for dental technicians:

OptraSculpt Pad is also optimally suitable for applying and modelling lab composites. Therefore, the efficient processing of composites is equally supported in dental labs.

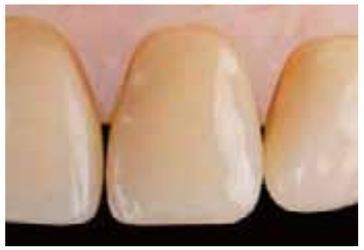
Non-stick shaping and contouring
The non-stick attachments of OptraSculpt Pad enable composite materials to be shaped and contoured with ease, without leaving any unwanted marks. Thus, composite restorations with smooth and even surfaces are fabricated with utmost efficiency.

Shaping and contouring with OptraSculpt Pad

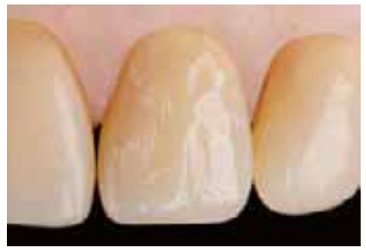


Shaping and contouring with a metal spatula

Smooth and even surfaces
Due to the special material of the pads, natural-looking restorations are easily accomplished in only a few steps. The highly flexible synthetic foam pads optimally adjust to the anatomical contours and allow smooth modelling.



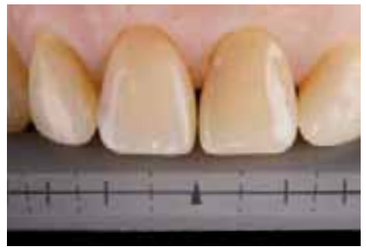
Result achieved with OptraSculpt Pad



Result achieved with a metal

Professional esthetic results
The reference scales on the instrument handle assist in the creation of esthetic and anatomically-correct restorations. The markings allow the clinical situation to be compared with the ideal average tooth width proportions and angular alignments in the upper anterior dentition.

Reference scale 1



Reference scale 2

For further information, please visit www.ivoclarvivadent.com

THE IMPORTANCE OF RESTORING CARIOUS PRIMARY TEETH

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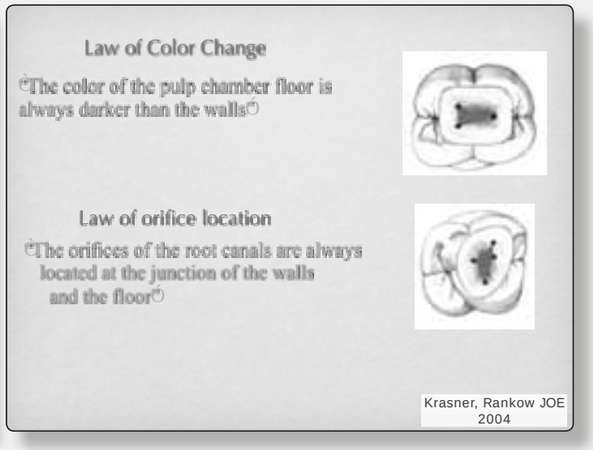
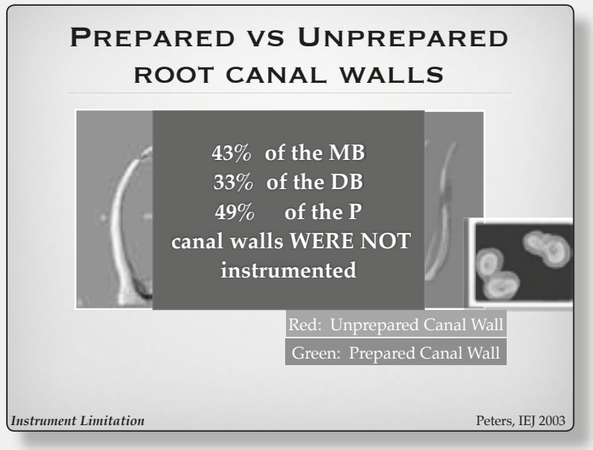
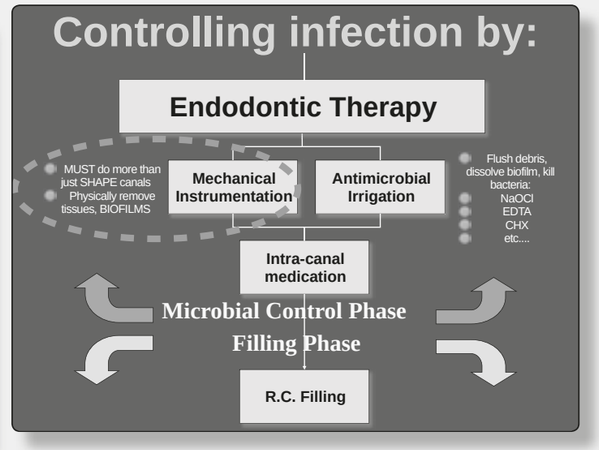
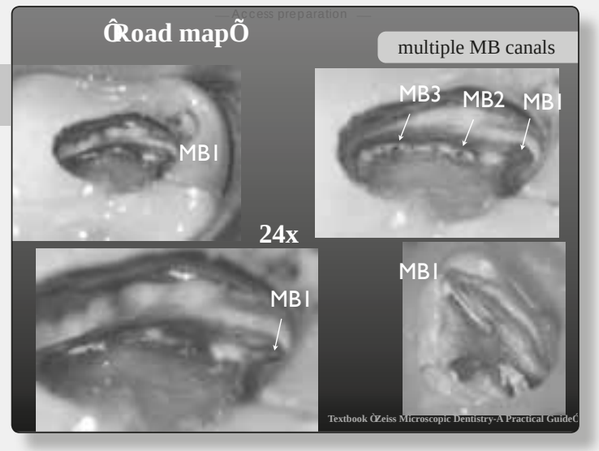
ENHANCING CLEANING AND SHAPING IN CLINICAL ENDODONTICS

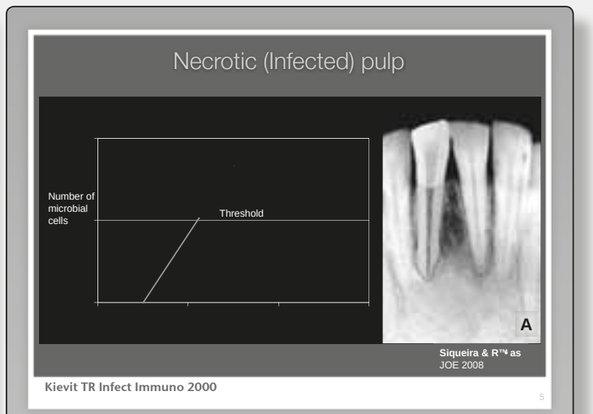
Spyros Floratos DMD, Endodontic Specialist
Adjunct Assistant Professor, Department of Endodontics, University of Pennsylvania USA

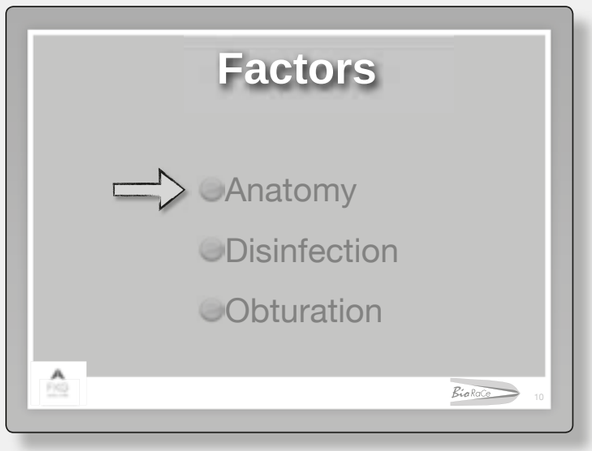


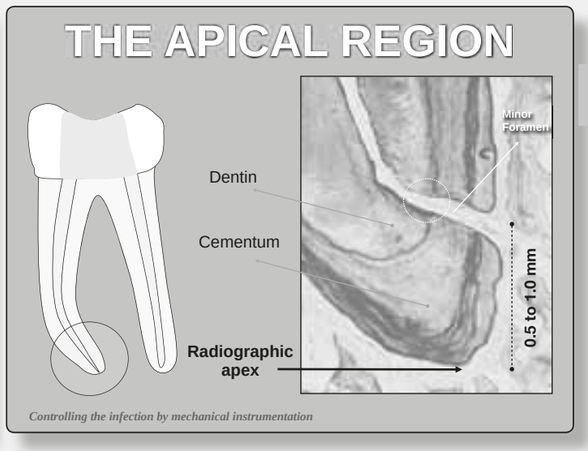


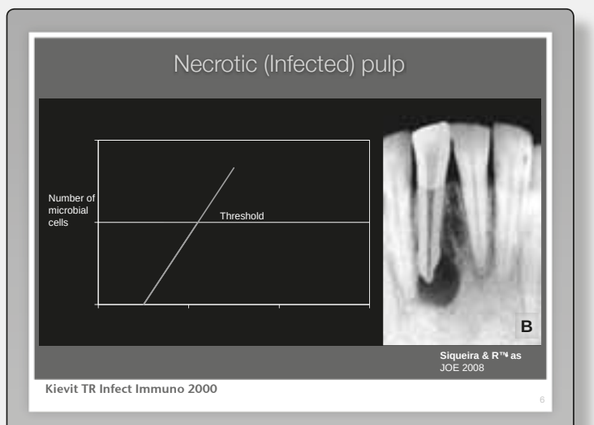


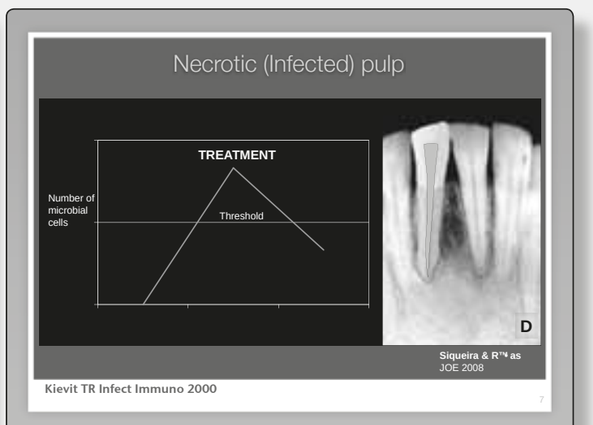


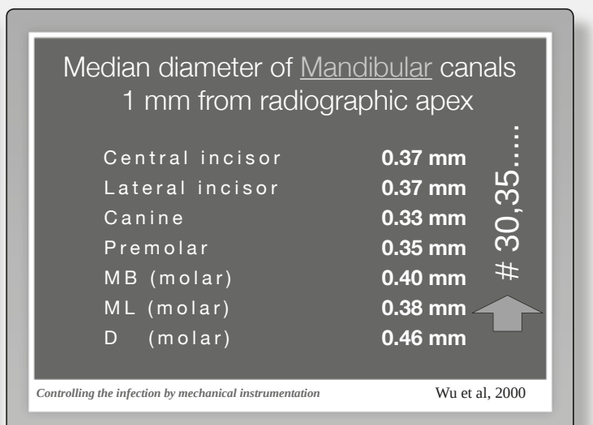












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ENHANCING CLEANING AND SHAPING IN CLINICAL ENDODONTICS

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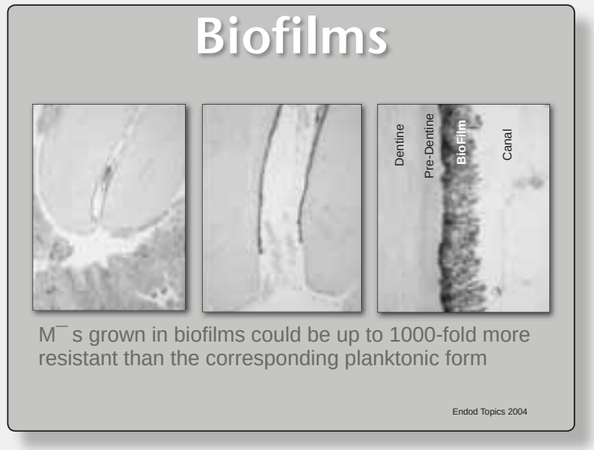

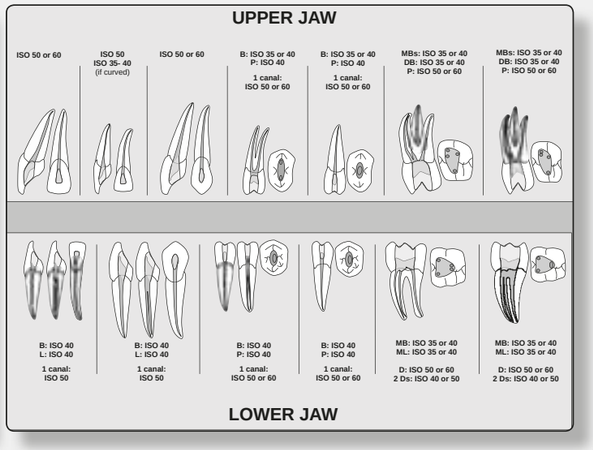

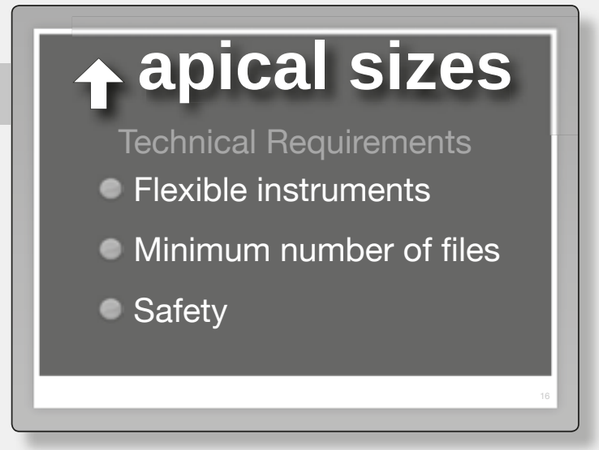

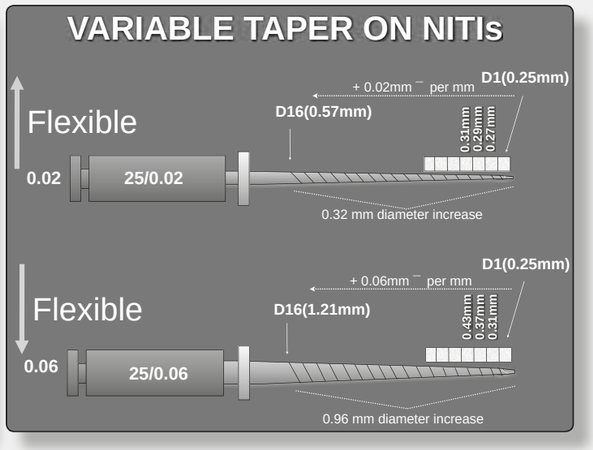

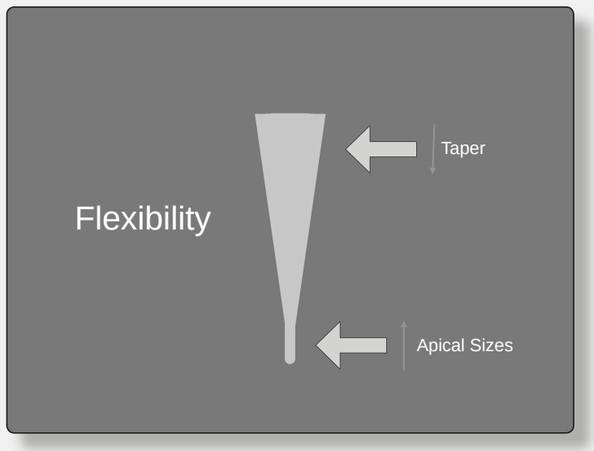

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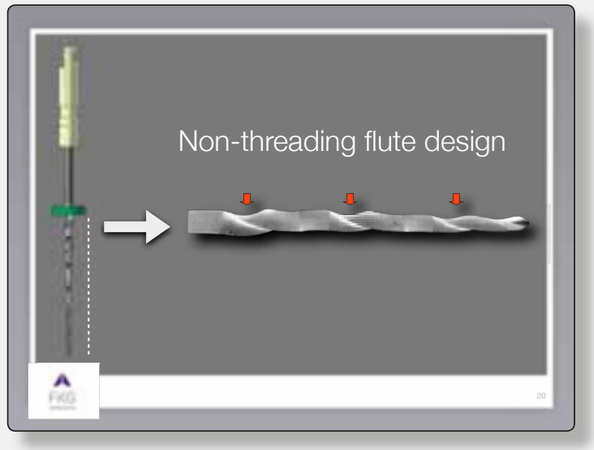

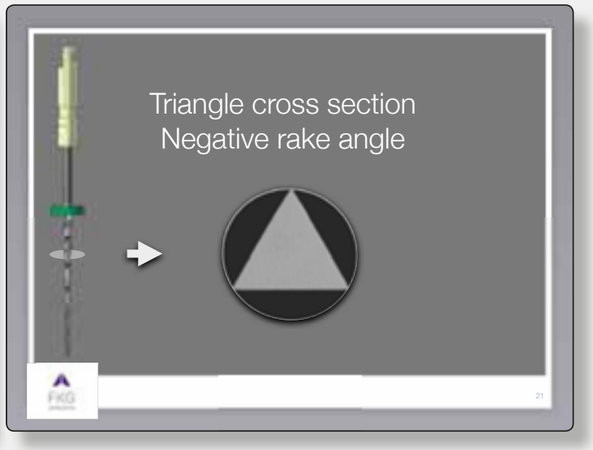

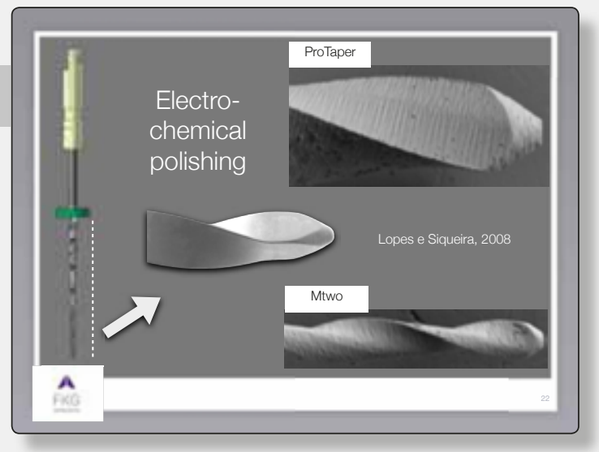

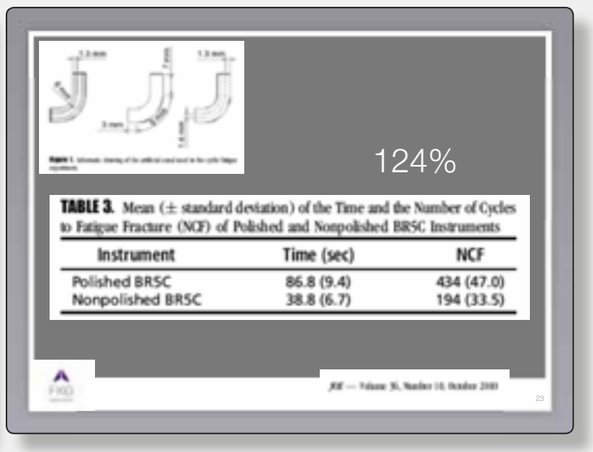

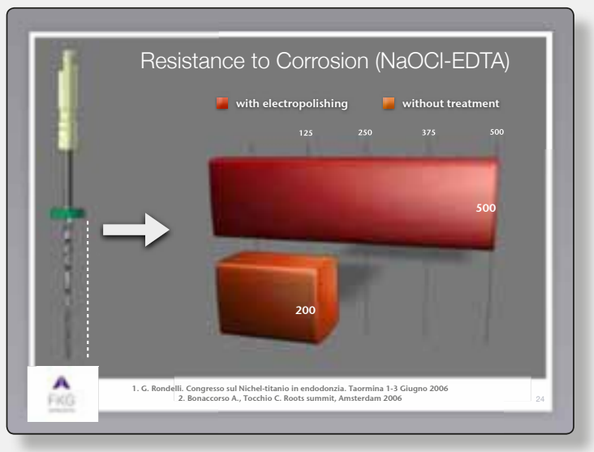

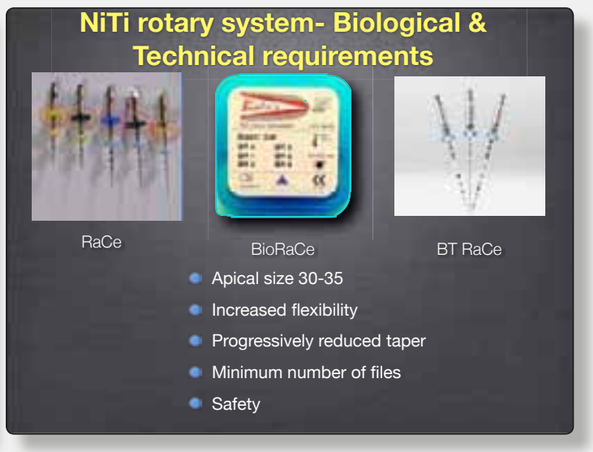

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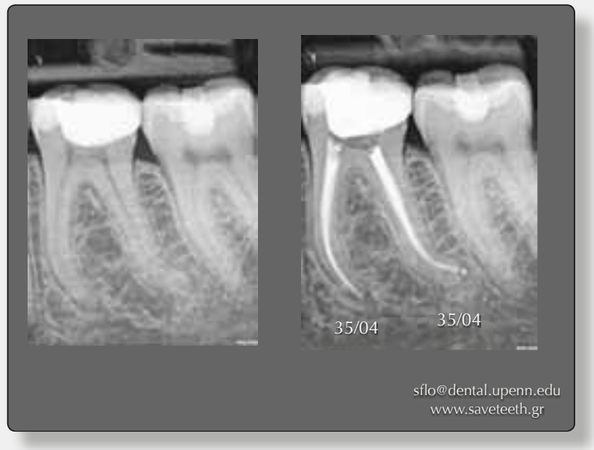

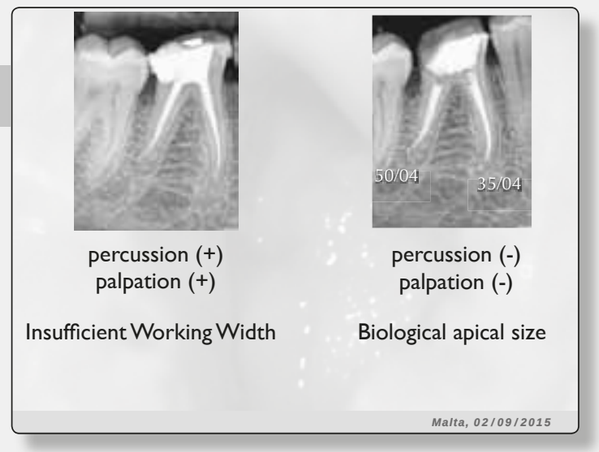

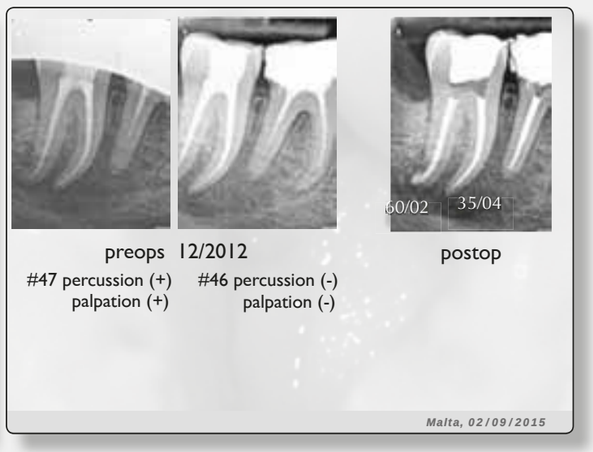

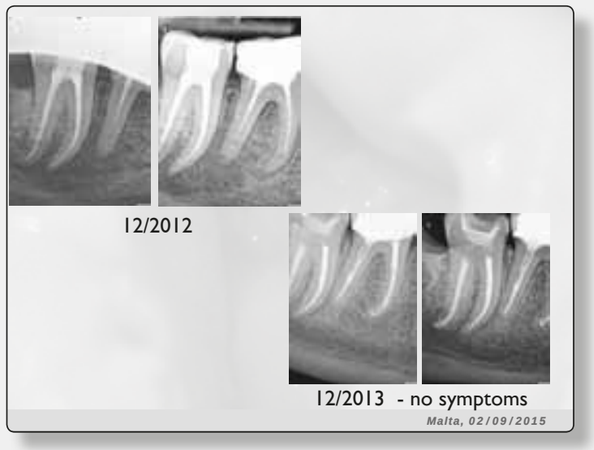

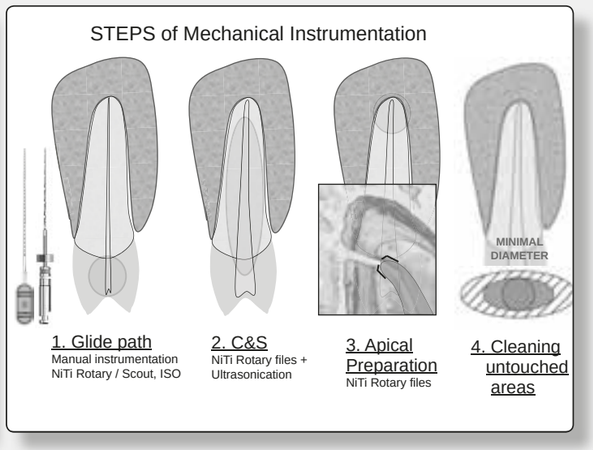

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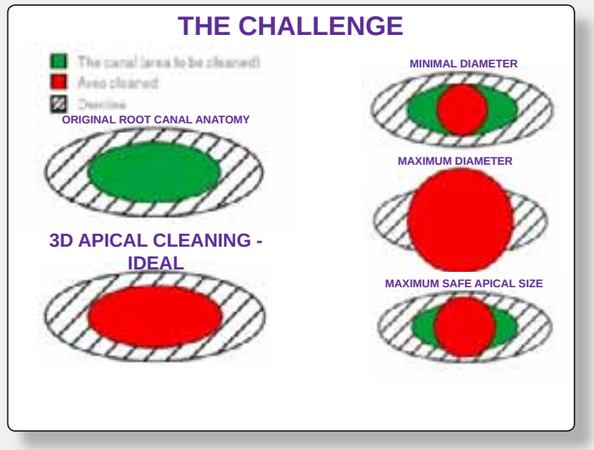

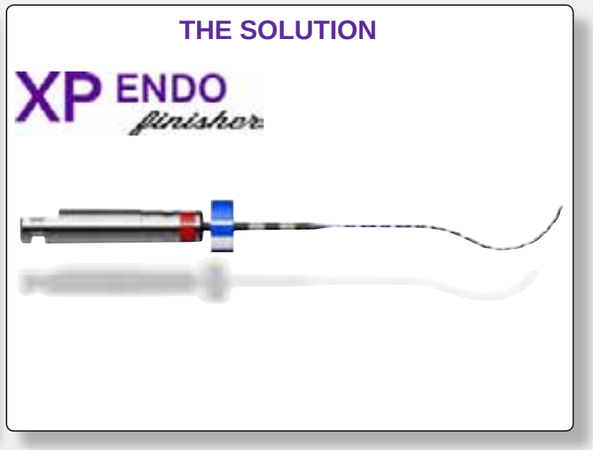

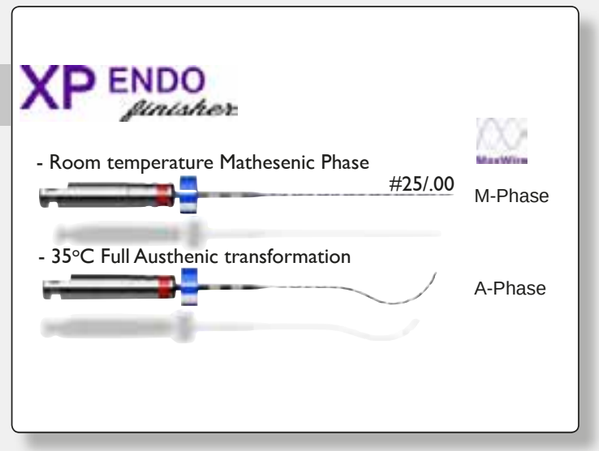

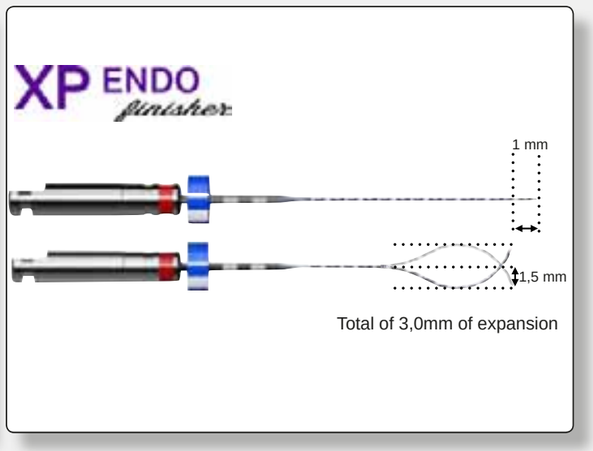

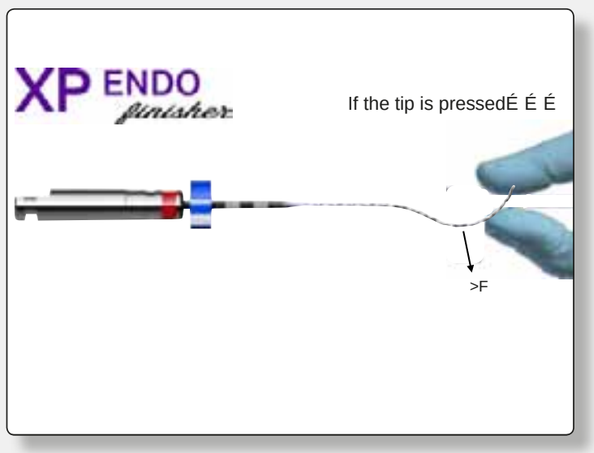

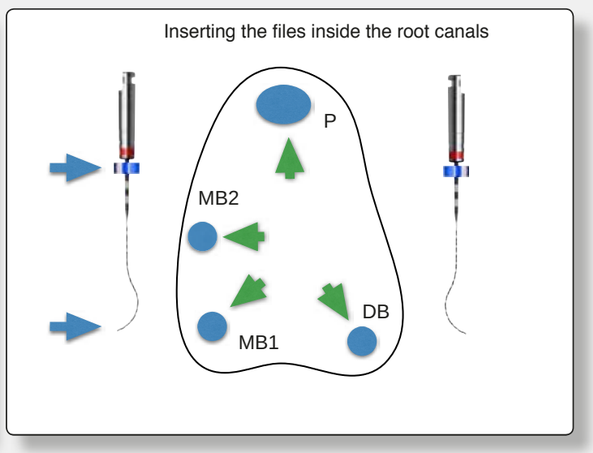

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THE DAM TOOTHWEAR HANDS-ON COURSE

Held at the Hilton
By Professor Brian Millar
Summarized by Dr David Muscat

It is ideal for the dentist to use materials that do not need to be polished, particularly posterior restorations as this is time consuming and may damage adjacent enamel.

When treating tooth wear one must relate to the remaining lifespan of the patient as the teeth will wear again.

BRUXISM
The bruxist has big masseter muscles. There is a notch under the angle of the mandible. The tongue has ridges. The cheeks have extra keratin called linea alba. The teeth show signs of damage but in the true bruxist the teeth are not sensitive. There are sharp edges and bits ping off. There are cracks in the posterior teeth. Amalgams look polished. Split teeth may be lost.

The treatment for a bruxist is to catch early and prevent from getting worse.

A protective splint is indicated .A soft splint will increase muscle activity. One may make a bilaminar splint-hard on the outside and soft on the inside.

A nickel chrome splint can be made to stop damage to the teeth. It stops the damage but not the bruxism. The cause of bruxism is nothing to do with the teeth. One can use botox to reduce bulging muscles, and this can be done 3 times a year, usually in women.

One may use an inhibitory reflex to switch muscles off.

At chairside one may make an acrylic splint. Place Vaseline on the upper anterior centrals . your nurse can mix trim or ortho resin ,and a ball of trim coated in Vaseline may be squashed flat in a 'button shape', which is then flattened with your putty spatula into an anterior bite platform which is 1.5mm thick and flat. The Anterior bite platform ABP is called NTI in America. This covers the front 2 central incisors.

The way the anterior splint is thought to work is that the impulse is transmitted to the foramen ovale and sensory nerve cortex, and then to the brain stem which then activates inhibitory nerves which stop the muscles.

To prevent swallowing or inhalation, one can make an Essex retainer or soft guard over it. So one has an ABP with an Essex. (please note this is not a Lucy jig).

EROSION
This results in rounding, matt, smooth surfaces. There is differentiated wear, sensitivity and acid damage. This is dietary or gastric. The dentine wears down ten times faster than enamel.

To restore eroded teeth one can use PTFE tape. Get the patient to bite onto the filling with the tape over it. The result will be a filling that is smooth, polished, set with no oxygen inhibition. Do not put cusps on these cases.

Dentine bonds sometimes break down after a year because placing etch on the dentine activates the collagenases enzymes in the dentine. There are MMPs in the body- the ones in dentine do not usually work and are 'asleep'- the acid activates them and they break down the collagen you have bonded to. Thus it is best not to etch dentine with phosphoric acid. Use a self etching primer system. It is less strong but a better long term dentine bond.2% chlorhexidine can be used to scrub the dentine for 1 minute ,dry and then use the dentine bond.

ARTICANE INJECTION
Use one twentieth of a cartridge. Use a short needle. Go down 5 mm papillae at right angles to the surface- do not touch the periosteum to start with and then go to bone level. Use both sides of the tooth if there are two roots.

ATTRITION AND EROSION
Do not add composite in increments. You need to wrap over and bond to enamel. Use single increment. Bond while you still have enamel.

Incisal edge is finished to 30 degrees. Will shrink onto tooth. You can do this on 3 to 3 or 4 to 4.Get the patient back into central relation .Use ICP if you can . Otherwise use centric relation. Put condyles in the right place.

DAHL APPLIANCE
The idea is to intrude one tooth and allow the others to extrude. This is an occlusal adaptation.

It is described as a 'Relative Axial tooth movement'. It was in fact described before' Dahl'.

COMPOSITE VENEERS
In the lab these can be made to a knife edge. The impression trays for veneers should go in along the path of insertion as otherwise you will get tearing of the alginate between the teeth.

New materials have less tear strength than materials used in the 80's.They were hydrophobic so modern materials have surfactants which reduce their tear strength. Dentsply have added an additional cross linking agent.

For bite registration one can use a clear silicone.

GC Gradia lab version can be used to make palatal composite veneers. Open the articulator by 1.5mm/ Take a facebow record and a CR record.

A Lucy jig is used. This is done to distalise into the ideal position. One can have 1 mm space at the back. With wear cases you can have 3 sets of composite veneers- upper labial, upper palatal and lower .

DISCLUSION
Disclusion is more important that occlusion. The posterior teeth only touch in ICP. Post disclusion- you get this from anterior guidance. The patient will bite and slide backwards. The Lucy jig is made in acrylic. This is worn at night for 2 weeks. On the last day it is worn all day and then the patient comes to the practice and a complete occlusal record is taken. The Lucy jig was invented 60 years ago –there were no composites then. Nowadays composites can be used.

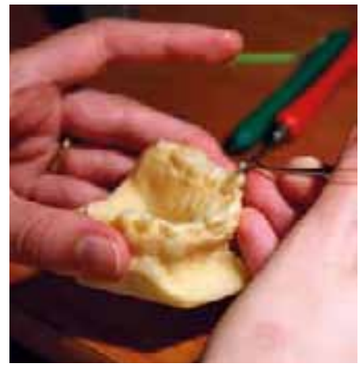
THE MICHIGAN SPLINT
This is a device for joint pain. It deals will occlusal problems, headaches and neckaches. It is expensive and difficult to adjust. One requires 20 mins of disclusion deprogramming so one can manipulate into CR. Take a CR record and a facebow reading for the lab.

All teeth should be in centric relation Anterior guidance to create posterior disclusion

With articulating paper one can see centric stops on functional cusps.

THE CRACKED TOOTH SYNDROME
The tooth will be cold sensitive not hot sensitive. There is nothing on the periapical radiograph. The tooth is vital. One should transilluminate. Etch buccally and lingually and place composite all round 1mm thick. If the patient bites and there is pain then this is pulpitis as the fracture is to the pulp. If they bite but there is no pain then all is ok. Patient may talk with a lisp.

Complete occlusal coverage does not cause pain.



ENHANCING CLEANING AND SHAPING IN CLINICAL ENDODONTICS

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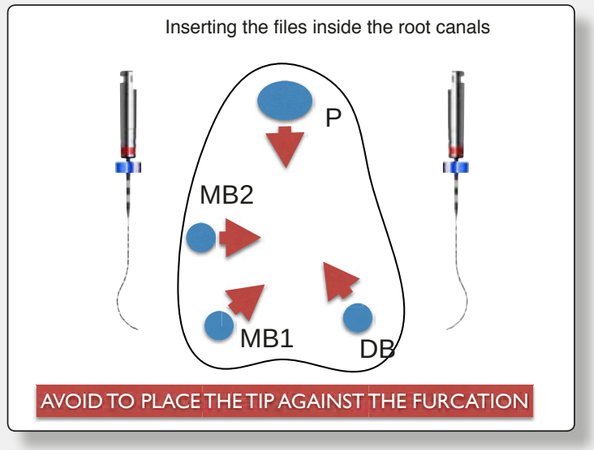

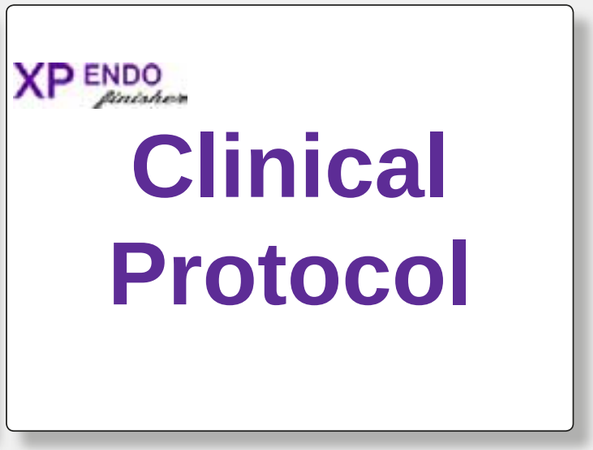

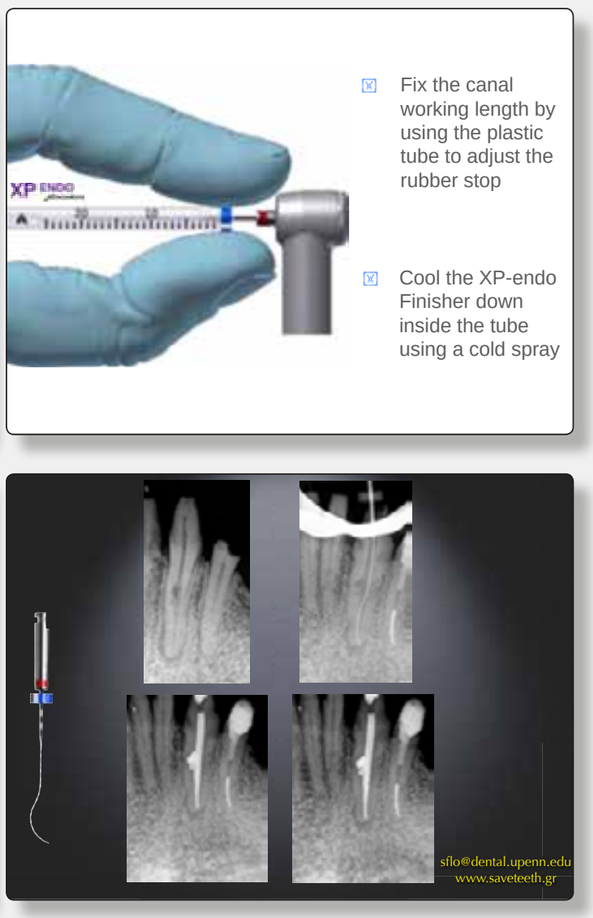

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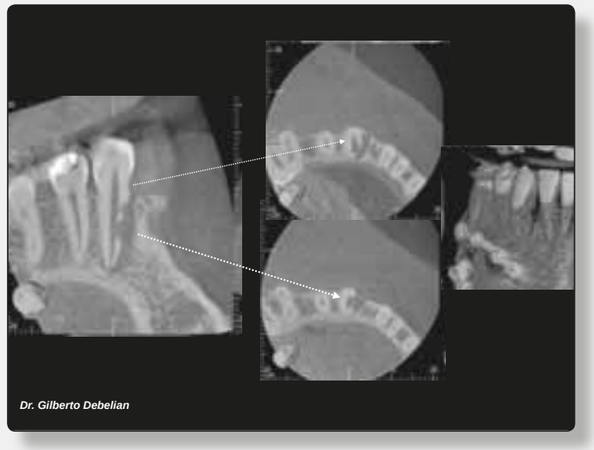
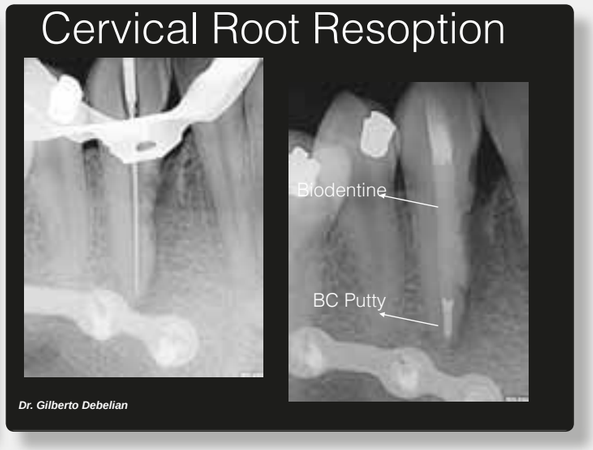
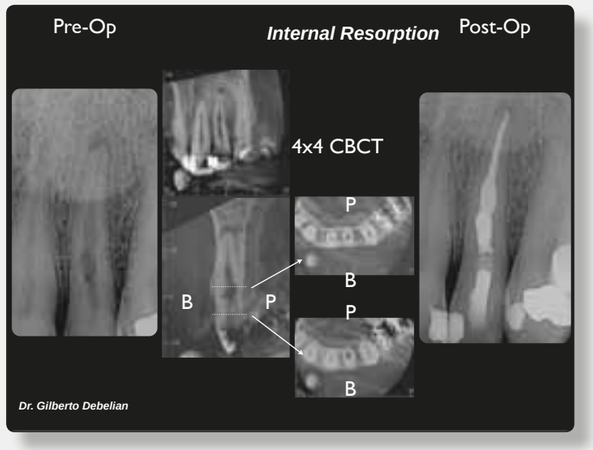


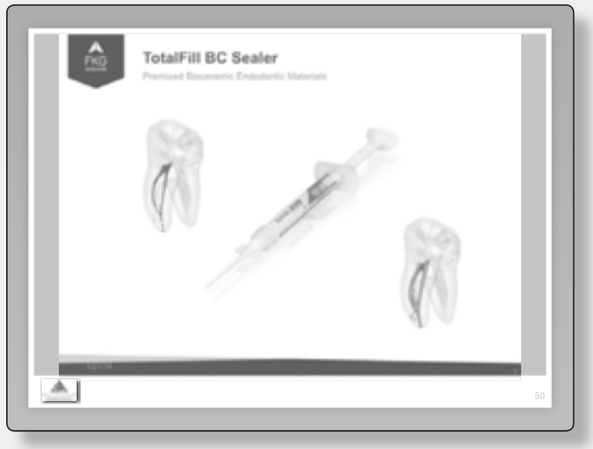


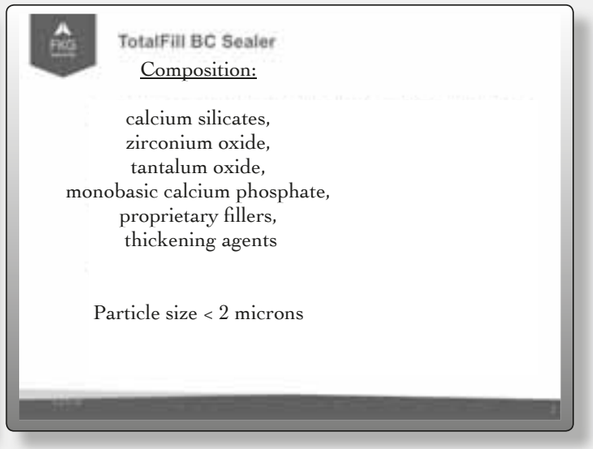


Conclusion

XP ENDO finisher

1. Initial instrumentation with round files to safer sizes
2. XPeF removes tissues and dentinal debris only
3. Contacts more of the canal walls but does not change canal shape
4. More conservative and efficient instrumentation
5. Creates less dentinal debris
6. Produces turbulence of the irrigant
7. Can be used on Retreatment
8. Apply sealer or Ca(OH)2 and removed it





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- ✓ Claims support in the event of a claim

On the other hand if your policy is placed insured under the scheme, kindly ensure that:

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- ✓ Your cover still reflects your present operation, example if you are performing Botox &/or Dermal fillers you have availed yourself of the relative extension.

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ENHANCING CLEANING AND SHAPING IN CLINICAL ENDODONTICS

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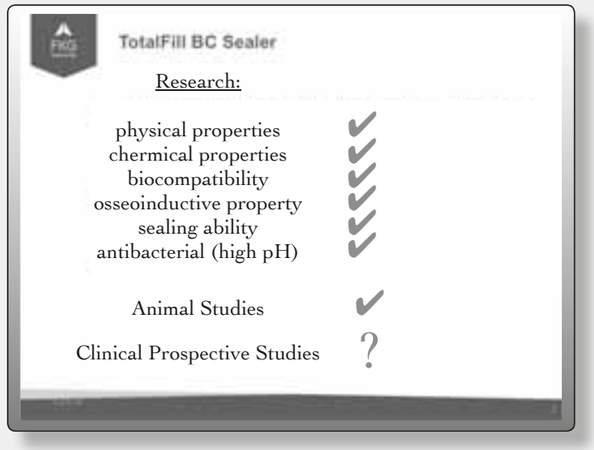

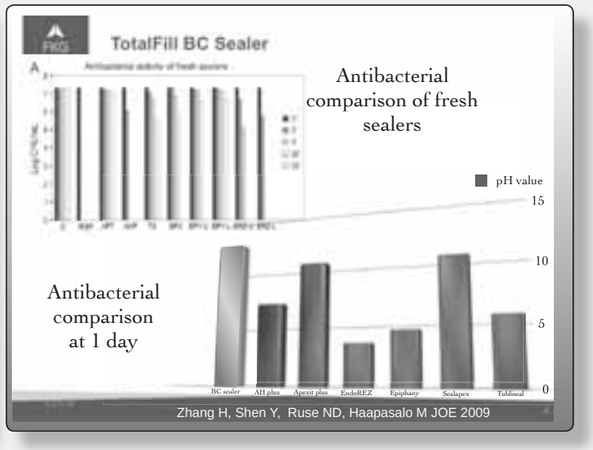

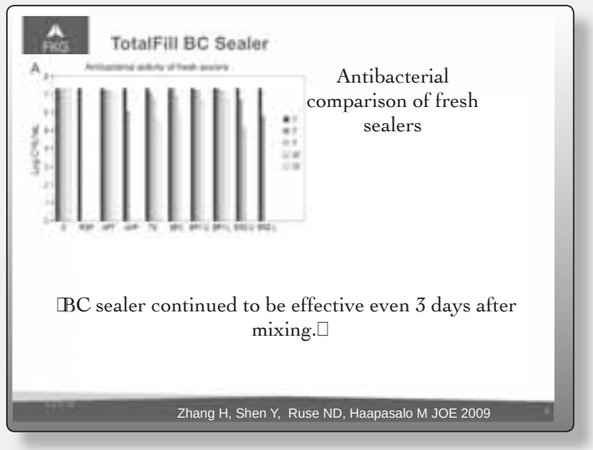

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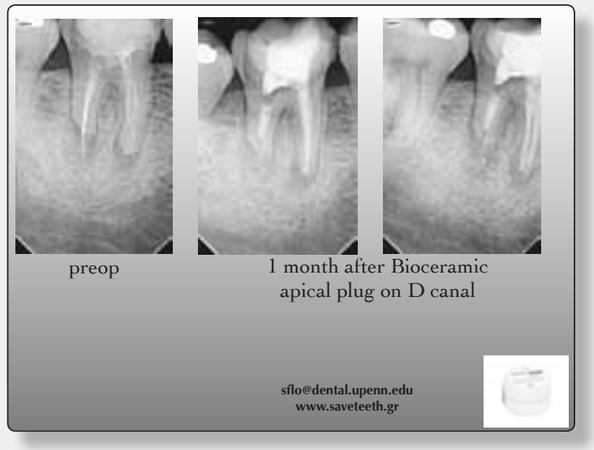

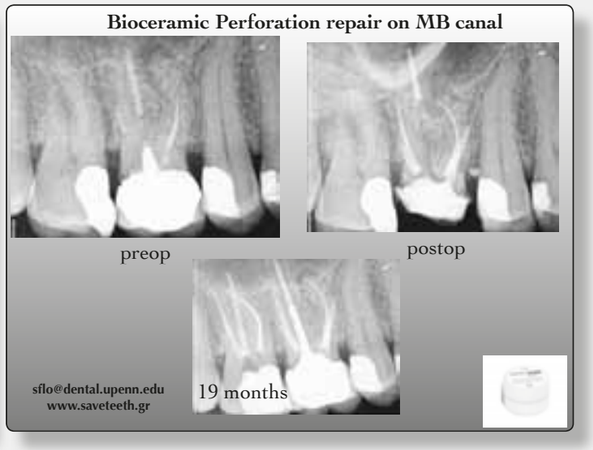

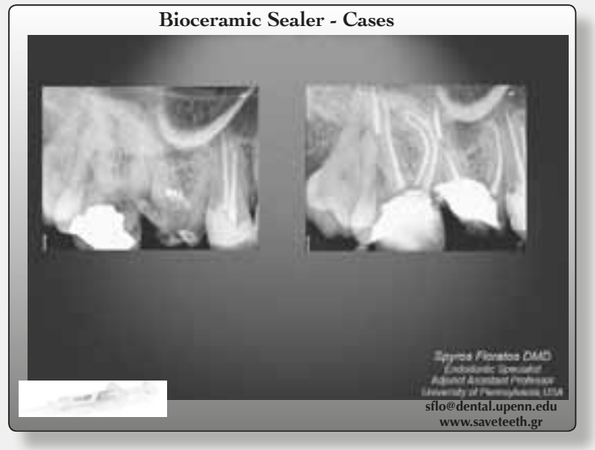

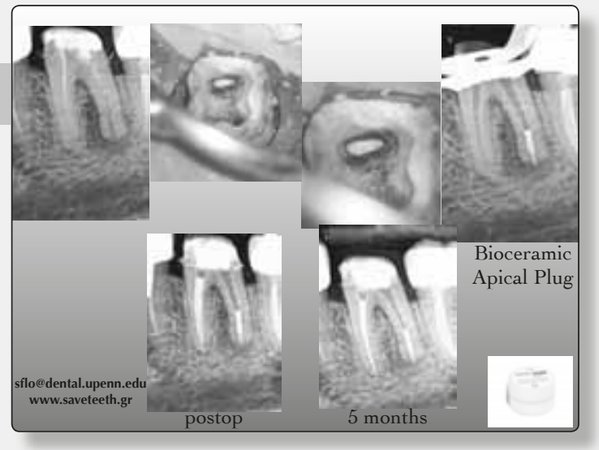

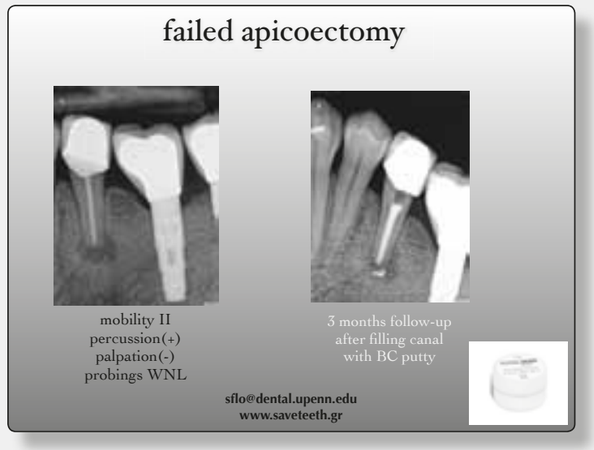

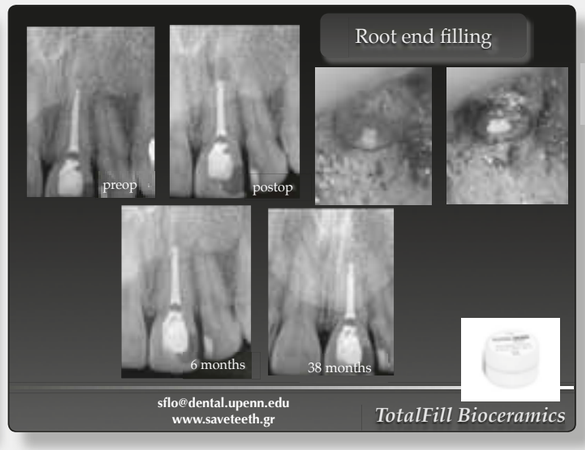

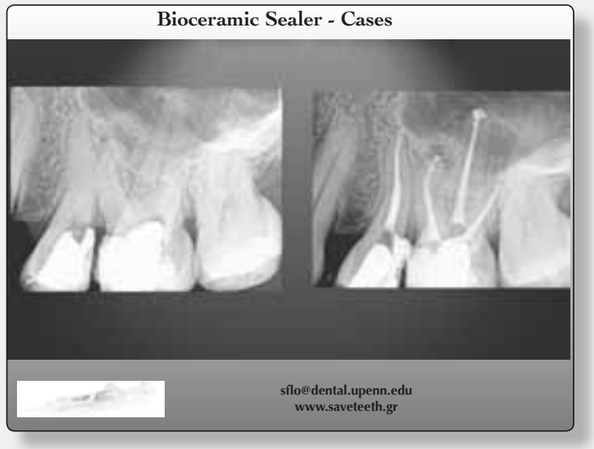

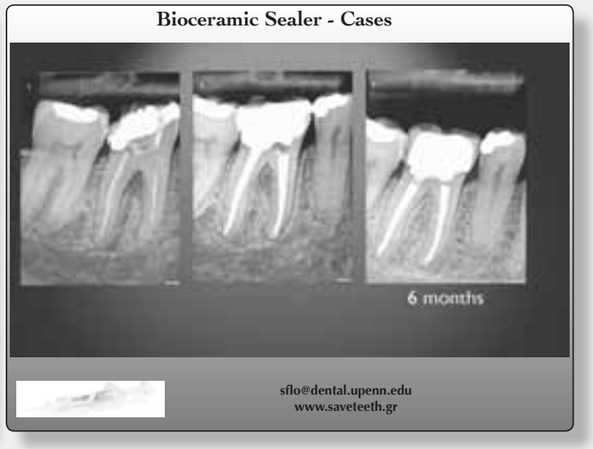

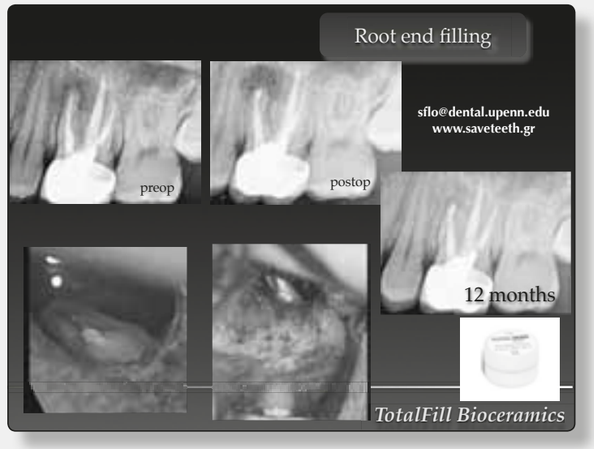

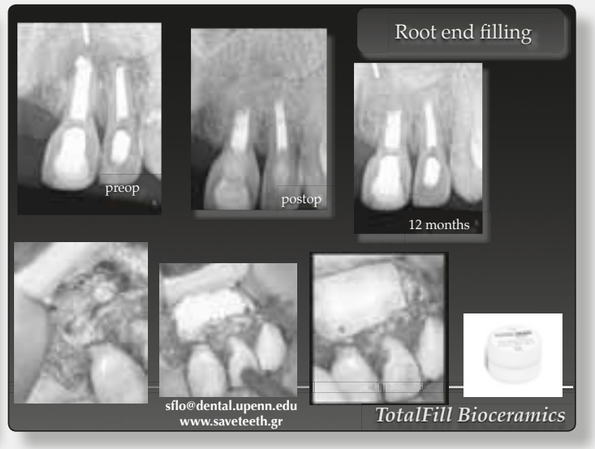

ENDODONTIC TIPS

By Spyros Floratos DMD, Endodontic Specialist. Summarised by Dr David Muscat.

It is important to remove the roof of the pulp chamber and fish out all the dentinal chips, if necessary using ultrasonic tips.

It is ideal to use X24 magnification

The law of colour change –the colour of the Pulpal floor is always darker than the walls.

The law of orifice location states that the orifices of the root canal are always located at the junction of the walls and the floor. The grey colour if the floor of the chamber. Necrotic pulp=periapical peri radicular periodontitis.

Infection is pulpitis-bacterial proliferation and growth over a certain threshold-then a periapical lesion develops, bacteria are produced and an immune reaction occurs to defend against infection.

Bacteria may be in three forms –free bacteria in canal; bacteria in canal walls; bacteria which penetrated into dentinal tissues. As you go apically bacteria go deeper into dentinal tubules. One cannot remove mechanically but chemically. One needs sodium hypochlorite to penetrate. Biofilms have to be removed. There will always be a part of a root canal that will not be touched by instruments. 43% of MB,33% of DP: and 49 % of Pal walls were not removed in a study by Peters IEJ2003.

STEPS OF MECHANICAL INSTRUMENTATION a, glide path-open path to the apical foramen b. conical shaping c. apical preparation to a biological (Apical)size d. Cleaning untouched areas as the shape is oval.

To achieve success one must know the anatomy of the last 3mm of canal. In most cases the canal exists on the side. Thus we fill to 1mm short of radiographic apex. What is the diameter of the apical constriction?

A number 40 is the first file that will clear the canal 3 dimensionally. Canals are oval not round. The oval canal has 2 diameters- a minor and a major. You may catch the file at a minor diameter but you need to clear to a major diameter. You cannot instrument a canal to less than a size 35.To clean the last 3mm of a canal you have to go to a large size rotary.

Biofilms are aggregates of bacteria that are stuck onto the canal walls. They are one thousand times more resistant to sodium hypochlorite.

Rotary files should ideally be flexible; there should be a minimum number of them and they should not break. You need to work to apical size 30-35.A progressively reduced taper required.-biology not technology.

Mechanical properties of Nickel Titanium-25/0.02 taper file ie. at the tip of the file the diameter is 25 microns. When the taper of the file increases, the flexibility decreases. Nickel titanium has cyclic fatigue-file will break round a bend (so always go up and down and do not keep still), and torsional fatigue-the tip locks, as there will be flute deformation. With your rotary instrument, go in 4 strokes up and down, take it out, wipe with gauze and inspect for flute deformation.

RACE FILES are reamers with alternate cutting edges of a non threading flute design. The flutes are interrupted by a straight part every 3mm so there is no locking within the canal. The possibility of fatigue is limited. The file scrapes not cuts-Race files also have an electro chemical polished surface. Microgrooves cause microcracks and electropolishing eliminates this. Also the file is more resistant to corrosion by sodium hypochlorite.

A microgap at the apex is the most common finding of a failure of an endodontic instrument. The correct working width is important not just working length. A biological instrument to the correct apical size.

The solution has to do with the nature of the nickel titanium alloy. This occurs in two phases. The Austenite phase is super elastic-it has a shape memory and goes back. The Martensite phase has no shape memory and can stay deformed. Ideally one needs a file that takes the temperature of the canal and becomes austenite again. The XP Endo finisher expand- finishes and is used after the 30-35 sizes. The file can touch all the canal wall 3D and reaches the untouched areas. A size 25 has a zero taper and is straight at room temperature in the Martensite. At 35 degrees in the canal there is an Austenite transformation. When spinning in the canal the XP Endo finisher has a total of 3mm expansion. When using it one faces the cusp and the stopper is adjusted to the working length.

The protocol is a speed of 800-1000rpm with a torque of 1Ncm.In a multi-rooted tooth start with the largest canal. Work along the entire length of the canal for approximately 1 minute per canal. The access cavity should be filled with irrigant only after the endo finisher has been in the canal.

TOTAL FILL BC SEALER is a bioceramic- a new cement and philosophy over the last 4 years. The 65 studies have shown that it does not shrink; it is dimensionally stable; better working time than MTA; hydrophilic ; and has a property of bonding on the dentine surface that MTA does not .It also stimulates the formation of new dentine. It has good sealing ability and high antibacterial properties.

Totalfill comes in a jar –putty mix viscous for perforation repairs, surgery, pulp capping or use in open apex. Alternatively it comes as a syringe which is a sealer. Or else a box putty and syringe. The sealers do not dissolve and fill the space between gp and wall. The sealer is introduced to a third of the canal.

The gp pushes sealant in a different concept. Use a lentulo to fill canal with sealer. Place 2mm short of WL. Sealant placed on master core. GP inserted into canal gently all the way to length. Cut upper part of master cone and compact it. A single cone concept. 20. The gp is used as a plugger to push the sealant.

IS IT RIGHT TO 'RAISE THE BITE'?

By Dr Matthew Cachia
BChD, MFDS RCSED

Why open your articulator?

- Tooth wear
  - Erosion
  - Attrition
  - Abrasion
  - Abfraction

- Tooth loss → loss of posterior support causes attrition of anterior teeth. (being used for chewing rather than cutting)

Tooth wear

- Caused when the physiologic rate of tooth loss is excessive and there is now a risk that the patient will not have enough enamel in old age.
- 0.2mm loss of enamel per decade of life can be considered as acceptable physiologic wear.

Turner and Missirlian Classification of toothwear patients (1984)

- Category I patients: Excessive tooth wear with a loss in the VD
- Category II patients: Excessive wear with no apparent loss in the VD
- Category III patients: Excessive wear with no loss in the VD

Category I patients

- Rapid loss of tooth tissue with no time for dento-alveolar compensation
- Important to idenify the cause before treatment
- Erosion is commonly a strong factor
- Simple to treat
- Plenty of space for restorative materials

Category II patients

- Forward posturing of the mandible gives the impression that there is no loss of VD
- Intermediate difficulty
- Treatment by distallisation, intrusion-extrusion or raising the OVD uniformly
- Use temporary restorative materials first if possible as major changes to the occlusal scheme may not be tolerated by the patient

Category III patient

- Dent-aloveolar compensation is very obvious (freeway space is normal)
- The alveolar bone often looks thick around the shortened teeth

Category III patients

- Raising the OVD in these cases is pointless as there is no available space for restorative materials and there is no increase in the freeway space. Tooth wear is often of slow progress
- These cases are best treated by crown lengthening and full veneer crowns or overdentures in extreme cases.

Case 1.

- 26 year old female
- PC: Thinning out upper incisors, recently noticed chipping of enamel. Worried she may lose her teeth and unhappy about the uneven appearance of her incisal edges.

- HPC: patient used to consume several glasses of fruit juice every day but has given up the habit over 2 years ago when she was told about the negative effects by a dentist
- O/E : heavily worn upper incisors for age, minimal wear of the posterior teeth
- Slightly increased freeway space : 4mm
- Anterior space in CR : 1mm
- Category 2 paitent

Treatment options

- Monitor
- Classic Dahl appliance to gain anterior space then build up anterior teeth to the desired height
- Direct composite build ups of the anterior teeth placed high
- Indirect composite restorations placed high in CR

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IS IT RIGHT TO ‘RAISE THE BITE’?

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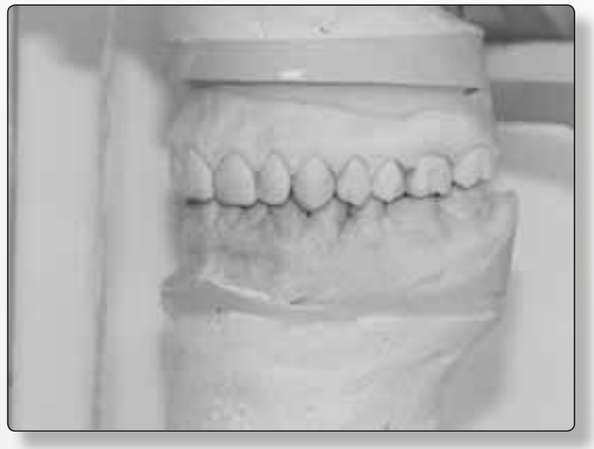

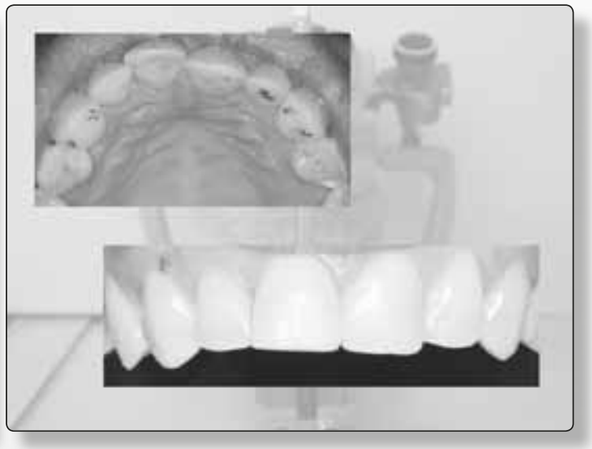

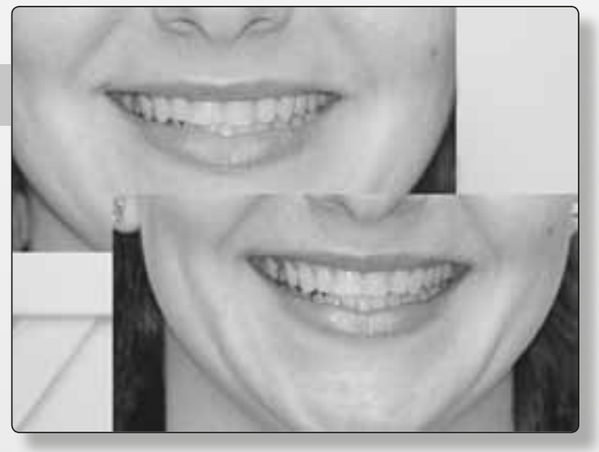

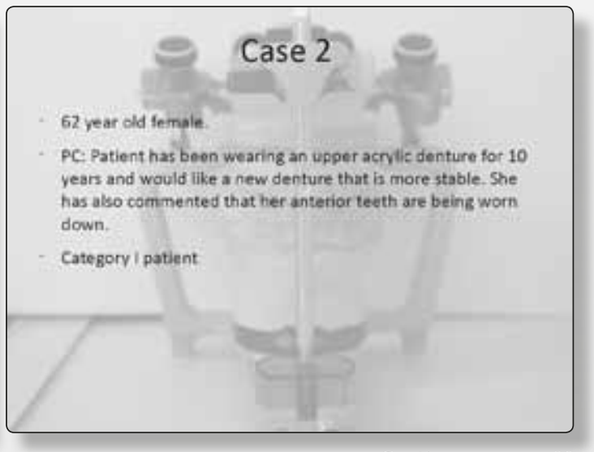

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IS IT RIGHT TO ‘RAISE THE BITE’?

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