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BACK TO BASICS: A STEP BY STEP PROTOCOL

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The use of the composite materials to restore form and function of posterior teeth damaged by disease, age or trauma is gaining wide acceptance by the dental community.

The dental practitioner and also the patient have the same desire regarding the posterior composite restorations, which is that those restorations has to last many years.

While there are numerous recommendations regarding preparation design, restoration placement, and polymerisation technique, current research indicates that restoration longevity depends on several variables that may be difficult for the dentist to control.

These variables include the patient's caries risk, tooth position, patient habits, number of restored surfaces, the quality adhesion and the ability of the material to produce a sealed tooth- restoration interface.

So, the success of posterior restorations depends a lot on the dentist's procedure and his clinical experience. In this article is described a clinical step by step procedure in order to create and develop a protocol for daily practice. Working with an understandable and clear protocol, the dental clinician can pay attention on many details during composite reconstruction, can prevent the technical errors, can hold the flow estate, leading to a better result with every restoration.



The protocol proposed for posterior reconstruction is described in 6 STEPS

- 1.Diagnostic and initial occlusal check
- 2.Isolation and pre-wedging
- 3.Cavity preparation and cavity finishing
- 4.Proximal reconstruction and occlusal layering
- 5.Straining (Optional) and finishing
- 6.Polishing and final occlusal check



The initial situation is showing caries on both premolars and on both molars. Also the first and second molar have old restorations that they have to be change because of poor integration and inadequate morphology and function.



The initial occlusal check was made using a 40 microns articulating paper. This stage is made to help the dental clinician to see the contact points in order to prepare and restore properly.



After the occlusal check the isolation with rubber dam is used. When restoring the posterior region I prefer to isolate a working quadrant. Using this technique help the dentists and also the dental assistant to have a better view and a better access to all cavity preparations. After isolation a cleaning is made with brushes

and paste and also airflow, to remove all the plaque and stains. This step is mandatory to prevent the contamination of adhesion procedure.



Pre-wedging is very important and useful because

1. protect the proximal rubber to be broken during the cavity preparation
2. push the rubber and the gingiva more apically
3. separate the teeth so the proximal preparation is easier



Cavity preparation have 3 steps

1. Access

2. Removal of the caries
3. Finishing of the cavity

The burr that I use most for access is the cylindric-round burr with a diameter of 0,9 mm.



The second step of the cavity preparation is caries removal and I use a round low speed bur.



Finishing the cavity using a fine bur is also very important for a better seal between tooth and restoration. I use for this stage an Arkansas bur on micromotor with low speed. As a general rule - the cavity preparation starts with high speed and water and finish with low speed and no water.



The aspects of cavity preparation. The wedges were very helpful for the proximal areas preparations.



The proximal wall is restored using a metallic matrix and a ring. First I apply the matrix, then the wedge after that I use two pieces of teflon tape and after that I place the V-ring. The teflon tape is used for a better fitting of the matrix in contact with the proximal walls.



The matrix in place. Also for this stage the high of the matrix is very important to obtain a nice proximal ridge.



After the proximal wall is restored the ring is removed and the occlusal morphology is created following the anatomy of the tooth.



For the second premolar no ring were used, just a matrix and a teflon tape. The teflon fix the matrix in contact with the proximal walls and also helps the dentist to distribute the proximal space with the mesial cavity of the molar.



Both premolars reconstructed. In this stage any finishing procedure can be made before starting the molar reconstruction.



The matrix for molar. The high of the matrix regarding the proximal ridge of the premolar is very important for a very nice reconstruction.



The aspect of the proximal ridges just after matrix and ring removal.



For finishing I prefer to use the same Arkansas bur, a no 12 blade and a rubber wheel. After finishing if the dentist prefer he can stain the occlusal surface. I have used brown stain.



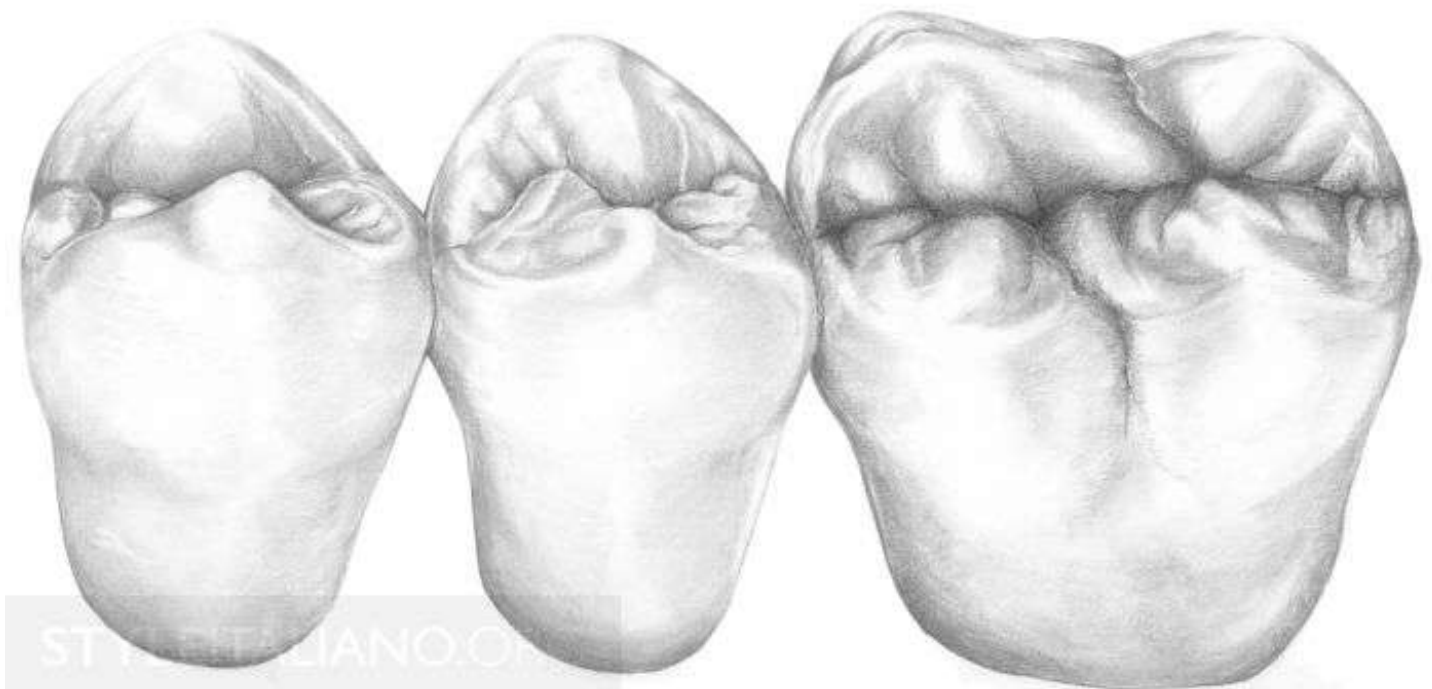
The occlusal check using the 40 microns articulating paper. The occlusal check should be made in static and also in dynamic movements.



The final aspects of the restorations. The polishing step is made with a cotton wheel and aluminium oxide and water. Nice polish can be achieved using this protocol.



The final aspects of the restorations.



And a very nice drawing made by Dan Brazdau a colleague of mine.

Conclusions

A daily protocol understood by the dentist and also by the dental assistant can provide very good posterior restorations with every patient.

References

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