CREATING A SMILE USING INJECTION MOLDING COMPOSITE RESTORATION: A CASE REPORT

DR SMITA NITIN KOLE, DR KOLE'S DENTAL CLINIC, SOLAPUR .

A female patient walks in to our Dental Operatory with this smile and we had following conversation

Fig. 1   Pre-op View

PATIENT : Doctor, I have decay in my front teeth ,I am a front desk working person, so not confident while interacting with customers. And mam I have heard a lot about you creating dream smiles for many patients, can you also create one for me too. But I do not want my tooth structure to be cut for creating that SMILE!!!

DENTIST : First let's think of an ORTHODONTIC ALIGNMENT, as you have your Upper right Canine and left Lateral Incisor outwardly placed and let's get both central Incisors restored with tooth coloured material.

PATIENT : Doctor, I know it takes LOT OF TIME and I want something QUICK and BEAUTIFUL looking.

ON EXAMINATION

- ❖ Class III caries with 11&21
- ❖ 22 Distally rotated and 13 outwardly placed
- ❖ Uneven smile line

PROPOSED TREATMENT PLAN

- ❖ Thorough oral prophylaxis

- ❖ IOPAs with 11,21 followed by restoration

- ❖ INJECTION MOLDING SMILE DESIGN using CLEAR SILICON INDEX with 11,12,13,21,22 and 23

When time and economy is at challenge, injection molding composite restorations can be the ultimate choice.

 This is one of the methods where Dentist can restore the teeth with minimum armamentarium, less skills and in short period of time.

Let us explore the case in detail.

CREATING A SMILE USING INJECTION MOLDING COMPOSITE RESTORATION: A CASE REPORT

DR SMITA NITIN KOLE, DR KOLE'S DENTAL CLINIC, SOLAPUR .

PRE-OP VIEWS :

Fig. 2a,2b,2c Pre-op smile views Front and Lateral.

PRE-OP VIEWS

RETRACTED

Fig. 3a,3b,3c Pre-op retracted in occlusion views Front and Lateral

PRE-OP VIEWS

MAXILLARY ARCH

Fig. 4a,4b,4c Pre-op retracted in occlusion views Front and Lateral

CREATING A SMILE USING INJECTION MOLDING COMPOSITE RESTORATION: A CASE REPORT

DR SMITA NITIN KOLE, DR KOLE'S DENTAL CLINIC, SOLAPUR .

PRE-OP   PRE-OP
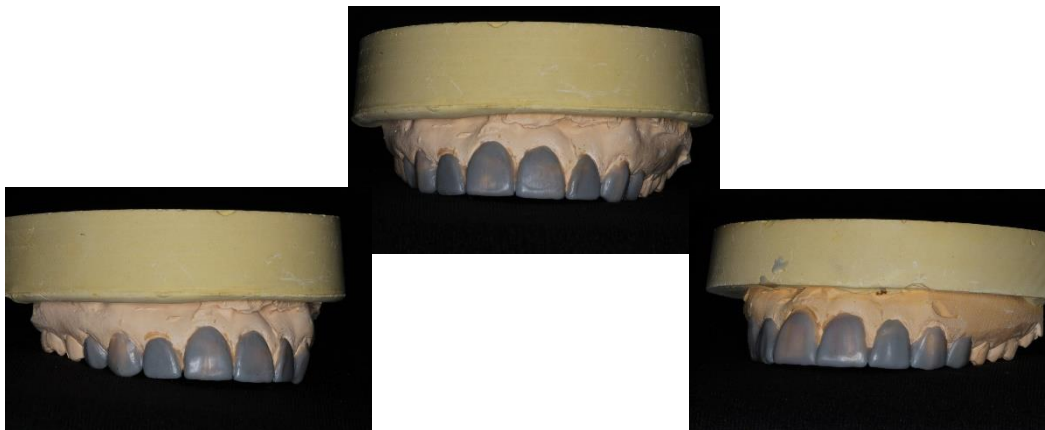
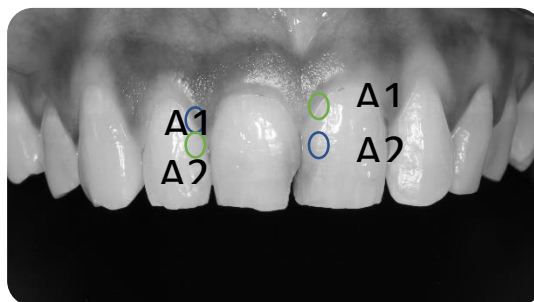**12 O'CLOCK VIEW**   **OCCLUSAL VIEW**

Fig. 5a,5b. 12 O'Clock View and Occlusal View.

After complete analysis of oral examination, treatment plan was explained to the patient. Patient agreed with the treatment. Impressions were made and sent to the laboratory for Wax -Up.

Fig. 6a,6b,6c Wax-Ups received from laboratory.

VALUE SELECTION
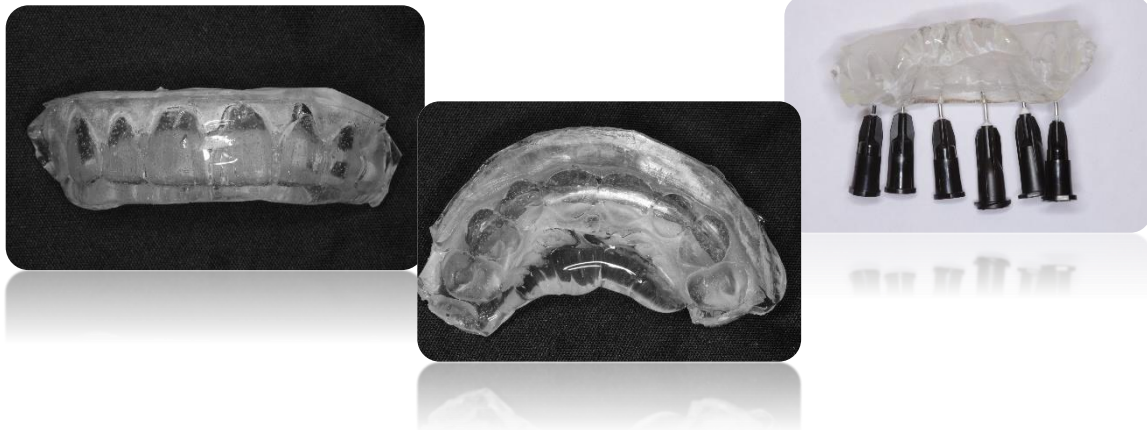

Fig.7   Shade selection.

CREATING A SMILE USING INJECTION MOLDING COMPOSITE RESTORATION: A CASE REPORT

DR SMITA NITIN KOLE, DR KOLE'S DENTAL CLINIC, SOLAPUR .

As we are going to treat this case with Injection molding , injectable composites are used , which have very limited shade range . Using available shades value selection is done .

Using the wax Mock-Up the clear silicon index is prepared(Exaclear GC fujji) .

CLEAR SILICON INDEX

Fig. 8a,8b,8c. Clear Silicon index is prepared and through the vent holes tips of the Injectable Composite syringe are inserted.

Using the prepared silicone index a quick trial run is done and showed to the patient for any further modifications. Patient was happy to proceed with the treatment .

Fig. 9a,9b,9c trial run with front and lateral views.

To start with treatment ,first caries excavation is done and enamel surface is treated for removal of Aprysmatic enamel. Teeth isolation is done with split Rubber dam.

CREATING A SMILE USING INJECTION MOLDING COMPOSITE RESTORATION: A CASE REPORT

DR SMITA NITIN KOLE, DR KOLE'S DENTAL CLINIC, SOLAPUR .

Fig. 10 Split Rubber-Dam isolation.

Now we will divide the teeth set in two parts . Alternate teeth set is isolated with Teflon tape so that each tooth can be restored separately and finished easily before starting with the second set.

Fig. 11 Alternate teeth isolation with Teflon tape.

Now 37% phosphoric acid is applied to those non-isolated teeth for 20 seconds.

Fig. 12 Etching with 37% Phosphoric Acid .

After 20 seconds Phosphoric acid is rinsed off, now observe the frosty white appearance of Enamel.

CREATING A SMILE USING INJECTION MOLDING COMPOSITE RESTORATION: A CASE REPORT

DR SMITA NITIN KOLE, DR KOLE'S DENTAL CLINIC, SOLAPUR .

Fig. 13 Post etching Frosty white appearance .

The bonding agent (Vivapen, Ivoclar .Universal Bonding Agent) is applied thoroughly .

Fig. 14 Application of Bonding Agent.

Bonding Agent is cured and clear silicon index is now inserted and through the vent holes on the index ,tip of the injectable composite is inserted and allowed to fill the space between the index and teeth and composite is cured for 30 seconds.

Fig. 15 Injecting the injectable Composite.

After finishing of these teeth other set is isolated with Teflon tape. And same set of steps are followed. After etching the application of bonding agent is followed and cured.

Fig. 16 Application of Bonding Agent.

Once the bonding agent is cured, the clear silicone index is used to prepare the palatal shell.

Fig. 17 preparation of the palatal shell

One can build the Dentinal lobes over this palatal shell using packable composite and then rest of the space is again filled with injectable composite.

Fig. 18 rest of the space is filled with injectable composite.

CREATING A SMILE USING INJECTION MOLDING COMPOSITE RESTORATION: A CASE REPORT

DR SMITA NITIN KOLE, DR KOLE'S DENTAL CLINIC, SOLAPUR .

Fig 19   After Curing the composite through the Silicon Index.

After injecting the composite, it is cured for 30 seconds. After removal of clear silicon index the restorations are checked for any deficient restorations as it can be corrected at this stage. Immediately after removing the Silicon index You all can observe that all the composite restorations appear to be almost finished, after using this method clinician barely needs to do any finishing and polishing unlike routine composite restorations .

Fig. 20   Immediate Post-Op

Composite restoration is then finished and polished. Restorations are again checked with Anterior and Lateral excursive movements. Once everything appears to be normal the patient then can be called for follow-up on second day. Follow-ups should be maintained regularly after every 6 months .

CREATING A SMILE USING INJECTION MOLDING COMPOSITE RESTORATION: A CASE REPORT

DR SMITA NITIN KOLE, DR KOLE'S DENTAL CLINIC, SOLAPUR .

Fig. 21a,21b,21c Post-Op Views

Maxillary Arch

Fig.22a,22b,22c   Post-Op Views in Occlusion

Retracted

CREATING A SMILE USING INJECTION MOLDING COMPOSITE RESTORATION: A CASE REPORT

DR SMITA NITIN KOLE, DR KOLE'S DENTAL CLINIC, SOLAPUR .

Fig. 23a,23b,23c   Front and Lateral Smile Views.

Fig. 24   Post-Op 12 O'clock View.

Fig. 25 Occlusal View.

CREATING A SMILE USING INJECTION MOLDING COMPOSITE RESTORATION: A CASE REPORT

DR SMITA NITIN KOLE, DR KOLE'S DENTAL CLINIC, SOLAPUR .

Fig. 25 Final Smile View.

"*Stop being afraid of what could go wrong and think of what could go right*"