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Central incisor restoration (Case Report)

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Abstract:
This case report describes the 11 tooth old restoration removal and new direct composite restoration placement(Enamel Plus, Micerium S.p.A, Avengo, Ge, Italy). Direct anterior restorations are today a very nice, minimal invasive and cheap opportunity to restore one or more teeth. With the use of modern materials, the right techniques and protocols we can obtain mimetic restorations that they can work on the mouth of the patient for a long time.

Keywords: direct restoration, composite resin, anatomical shape.

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INTRODUCTION

Tooth shape is the factor that plays a predominant role in rehabilitations with aesthetic restorations in the anterior maxilla.

A frontal rehabilitation is certainly a complex process. Numerous factors need to be analyzed when designing a new dental element, dental alignment, size of the clinical crown and occlusion. Comprehensive knowledge of these aspects is essential for creating aesthetic and harmonic restorations. [1-4]

Most of the materials and clinical and technical procedures are subjected to the judgment of time and are constantly evolving, the dental morphology is timeless and does not change.

Once the knowledge of dental anatomy was of primary relevance to dental technology, today, with the increased popularity and quality of direct and semi-indirect restorations, this aspect becomes of fundamental importance also for the dentist.

The aim of this report is to demonstrate the direct composite restoration of 11 tooth and its follow-up.

Fig. 1 **. Initial radiography and initial photo with light diffusers to highlight the surface textures**

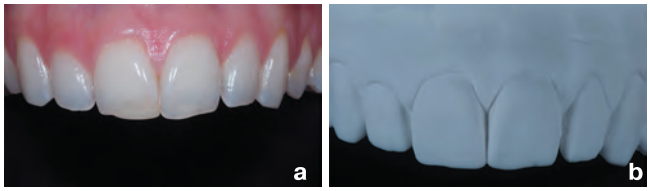

Fig. 2. **a – Initial photo; b – photo of the cast with wax-up [6]**

CASE REPORT

Anamnesi stomatologica: la paziente richiede il rifacimento del vecchio restauro sull'elemento 11, riferisce di aver subito un trauma sull'elemento da bambina per una caduta da cavallo, a seguito del trauma era stato eseguito questo restauro diretto che si è mantenuto stabile nel tempo pur perdendo le adeguate caratteristiche estetiche.

Esame stomatologico: non si evidenziano problemi di natura parodontale o cariosa, agenesia di 35 con 75 ancora in sede.

Per l'elemento 11 si propone:

- ceratura diagnostica dell'elemento da cui si svilupperà una mascherina in silicone;
- restauro diretto in composito (Enamel Plus Micerium).

Fig. 3. **Photo for first color analysis with direct light flash**

Fig. 4. **Photo for more detailed color analysis directly with polymerized composite portions (Micerium)**

Fig. 5. **a – Isolation of the operation field and removal of the old restoration; b – the cavity preparation in-volved an interproximal palatal butt joint and a small buccal chamfer at the end of the old bevel (long chamfer)**

Fig. 6. **a-b. Finishing edges with discs**

Fig. 7. **Control of the silicone index before the adhesive phases and then selective etching of enamel (20-30 sec) and dentin (10-15 sec.), Protecting the adjacent teeth with a matrix [7]**

Fig. 8. **Adhesive phases: 4-th generation adhesive system with the addition of a 0.2% chlorhexidine diglu-conate solution before the primer. [8, 9]**

Fig. 9. **a – Bonding and polymerization for 40 sec.; b – The first layer of UE2 enamel (Micerium) is placed di-rectly on the silicone index which is in turn positioned in the patient's mouth**

Fig. 10. **Placement of the silicone index in the patient's mouth. Appearance once silicone guide is polymerised and removed**

Fig. 11. **a-b. Layering of two dentinal portions (UD1, UD2, Micerium) trying to desaturate the color**

Fig. 12. **a-b. Incisal characterizations and surface characterizations**

Fig. 13. **a – Last layer of UE2 enamel (Micerium) [6] b – Last polymerization with glycerin gel (ShinyG Micerium) to polymerize the composite layer inhibited by contact with oxygen**

Fig. 15. **a – Final appearance after the rubbe rdam is removed; b – follow-up visit at 1 month**

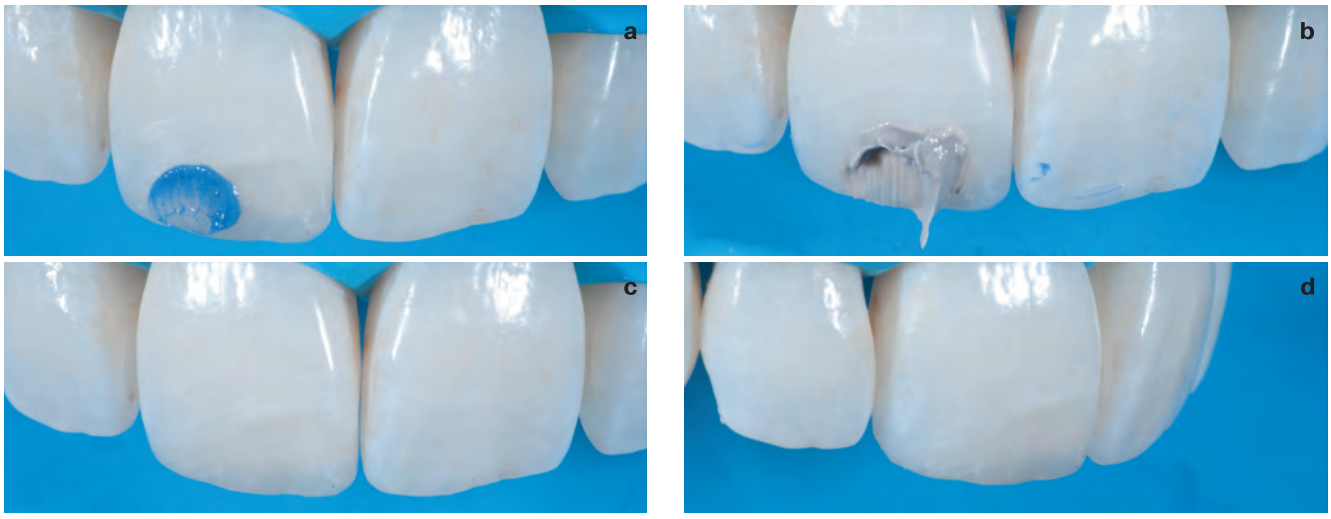

Fig. 14. **Final photos after polishing with diamond pastes (ShinyA – a, ShinyB, ShinyC – b, Micerium) and before removing the rubber dam (c, d)**

Fig. 16. **a-b. Final photo with diffused light from the frontal and side views**

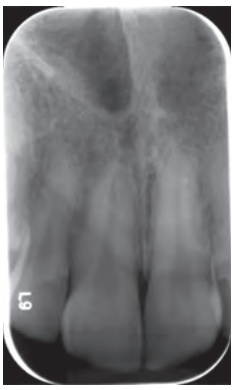

Fig. 17. **Final periapical control radiograph**

Fig. 18. **Extraoral and intraoral follow-up photographs at 3 years**

Fig. 19 **Panoramic photo of the entire mouth in 7 years**

CASE REPORT

Dental history: the patient requests the old restoration 11 to be replaced (Figure 1). She reports that she suffered from a trauma of the tooth when she was a child due to a fall from a horse. This direct restoration was performed which has remained stable over time while losing the adequate aesthetic characteristics.

Dental examination: no periodontal problems or carious nature are highlighted.

For 11 tooth it is proposed:

- diagnostic waxing of the tooth from which a silicone key will manufactured (Figure 2);
- direct composite restoration (Enamel Plus, Micerium S.p.A, Avengo, Ge, Italy).

The stages and features of this case report are described in figures 3 - 19.

DISCUSSION

To create aesthetically pleasing and mimetic restorations, three fundamental elements are required for morphology:

Knowledge of the three basic dental morphologies: square, oval and triangular; and the ability to harmonize each element with the patient's face and teeth.

Mamelloni are considered to be anatomical divisions of the tooth and are usually separated by primary sulci. All human teeth have four or more lobes. The connections of the various surfaces give shape to the tooth. The dental morphology is therefore given by the sum of the different lobes and their interaction. Knowledge of surface texture and the ability to reproduce it enables us to also shape processes such as aging. [5]

CONCLUSIONI

Direct anterior restorations are today a very nice, minimal invasive and cheap opportunity to restore one or more teeth. With the use of modern materials, the right techniques and protocols we can obtain mimetic restorations that they can work on the mouth of the patient for a long time.

In a modern dentistry approach is very important to insert this procedures in our treatment plans to give more possible choice to our patients.

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