

# Replacement of Amalgam Restorations on Teeth 46 and 47 with Direct Composite Resin - Case Report

## INTRODUCTION

With the evolution of restorative materials and the increasing appreciation of aesthetics, many patients seek to replace older and amalgam restorations with more natural and aesthetic options. The composite resin, in addition to its excellent adhesive capacity, allows an excellent optical integration and reproduction of dental anatomy. This clinical case report describes the replacement of the amalgam restorations on teeth 46 and 47 by composite resin restorations, using an adhesive technique.

## CASE REPORT

A 42-year-old female patient reported dissatisfaction with the darkened appearance of old amalgam restorations on teeth 46 and 47. During the clinical examination, extensive metallic restorations were observed in the right lower posterior teeth, class I in tooth 46 and class V associated with the occlusal restoration in tooth 47 (Figure 1).

## CLINICAL PROCEDURE

After local anaesthesia, full rubber dam isolation of the posterior teeth was performed in order to ensure isolation (Figure 2).

The amalgam restorations were carefully removed using high-speed diamond burs, preserving the remaining dentine. The cavity was then cleaned with pumice and water (Figure 3).

The enamel was selectively etched with 37% Super Etch phosphoric acid (SDI) for 15 seconds, followed by abundant washing and controlled drying protocols (Figure 4 and Figure 5).

The universal adhesive Zipbond Universal (SDI) was applied and light-cured for 20 seconds using the Radii Xpert (SDI) light curing unit (Figure 6).

As a first layer, the Luna Flow flowable composite resin A2 shade (SDI) was used at the base of the cavity, promoting dentine adaptation and protection, with subsequent light curing (Figure 7).

The reconstruction of the cusps and occlusal surface was performed with the Luna 2 composite resin A2 (SDI), applied in increments of up to 2 mm, light-cured by 20 seconds each increment, following the cusp-by-cusp build-up technique (Figure 8).

The occlusal morphology was carefully sculpted, respecting the natural grooves and crests of the posterior teeth (Figure 9). A thin layer of brown pigment was applied to the main grooves, simulating anatomical characterisations (Figure 10).

The initial finishing and polishing were performed, promoting lustre and smoothness on the surface (Figure 11).

After removal of the isolation, occlusal adjustment was performed (Figure 12).

## FINAL RESULT

The clinical result demonstrated excellent aesthetic integration, adequate functionality and patient satisfaction (Figure 13).



### Alex Sandro Olivaldo

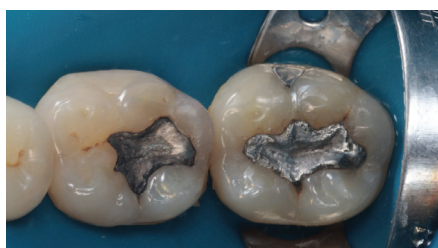
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## CONCLUSION

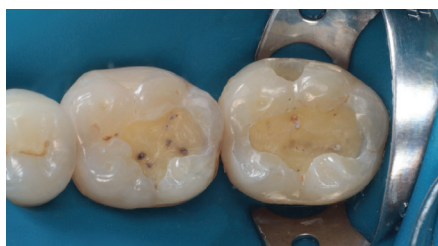
The replacement of amalgam restorations by composite resin represents a safe, reliable, and aesthetically favourable alternative. The success of the procedure is related to the correct adhesive protocol, the proper selection of materials and attention to anatomical details during sculpting and finishing.



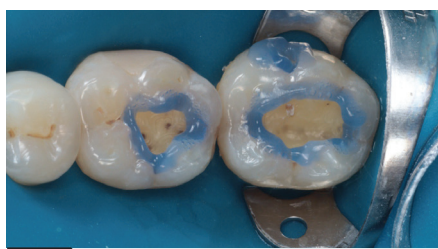
**Fig1** Initial state



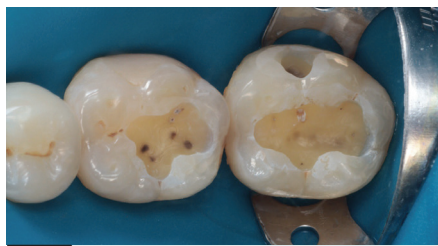
**Fig2** Rubber dam isolation



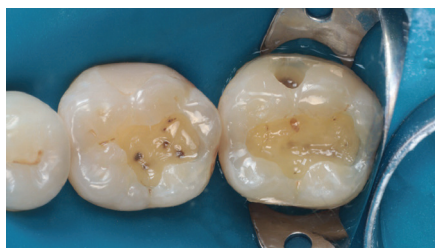
**Fig3** Amalgam restoration removal



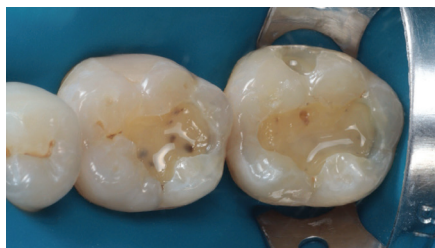
**Fig4** Selective enamel etching with phosphoric acid (Super Etch, SDI)



**Fig5** Washing and drying cavity



**Fig6** Zipbond Universal Adhesive System (SDI) application



**Fig7** Liner with flow resin composite flow, Luna 2 Flow (SDI) application



**Fig8** Coronal anatomy reconstruction made using regular incremental resin composite (Luna 2, SDI)



**Fig9** Occlusal morphology



**Fig10** Brown pigment application on occlusal fissures simulating the characteristic of the premolar occlusal surface



**Fig11** Finishing and polishing



**Fig12** Occlusal adjustment



**Fig13** Final aspect of the aesthetic resin composite restorations (Luna 2, SDI)

## PRODUCT REFERENCES

