

## PROSTHETIC REHABILITATION FOR PATIENTS WITH LABIOPALATOSCHISIS : traditional and new approach

R.Branchi MD DDS

Assistant Research Professor  
Department of Prosthodontics  
Università degli Studi di Firenze Italy

English translation by: Dr. Susan Eslambolchi

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### INTRODUCTION

The prosthetic treatment of labiopalatoschisis (L.P.S.) is the final step of a long procedure involving orthopaedic surgery of the maxilla, reconstructive plastic surgery, and orthodontic treatment.

Patients are usually referred to the prosthodontist at age 14 to replace missing teeth in the schisis area.

The purpose of this article is to show a clinical case followed from the age of 14 to 27.

### CASE REPORT

The patient, S.L. 14 years old, affected by L.P.S., was referred to the Department of Prosthodontics after surgery was done at the University of Nantes (France) and orthodontic treatment was performed in the Department of Orthodontics of Florence University.



The patient examination shows missing 2.1 and 2.2 and bilateral cicatricial insertions as a result of the surgeries. The same thing was seen on the upper lip and the left side of the nasal base (fig.1-2).

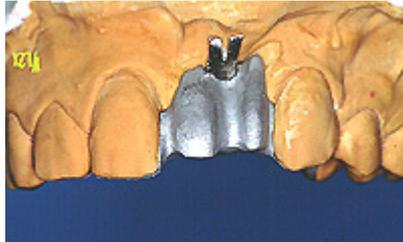
The teeth are well aligned with a Class I relationship and good functional and esthetic results (fig.3).

The patient is psychologically stable, is aware of her condition, and desires an esthetical improvement of her upper arch.



The first appliance was a temporary removable appliance made of acrylic and ball clasps. Considering the patient's age (14 years old), the removable appliance represents a valid temporary solution, because even if esthetically insufficient, it permits further maxillary growth avoiding interferences and permitting adjustments at low costs (fig.4). This appliance was used for 4 years, without any major modifications.

When the patient was 18, considering the larger esthetic and psychological needs, the temporary appliance was replaced with a bonded one.



The bonded appliance in these cases is the most convenient method: it is conservative because it does not cover the teeth near the space and the metallic frame is bonded on the lingual surfaces of the teeth.

The adhesion is accomplished by bonding to enamel and metal etching.

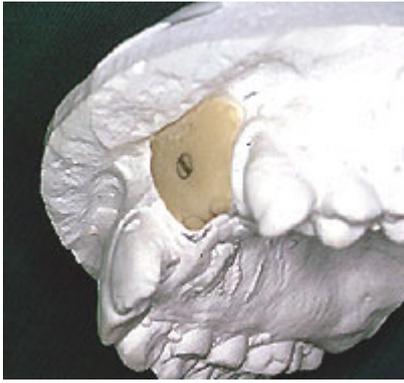
The literature is rich on this topic: from Bonocore to Rochette, to Dunn and Resbick, and Del Castillo and Livaditis. The results satisfy both functional and esthetic needs.



The bonded prosthetic design for this case is a Maryland Bridge, a monofusion of an alloy with a high level of palladium with two wings for the abutments (1.2,1.1,2.3,2.4) and the acrylic teeth (2.1,2.2) (fig.5-6-7).



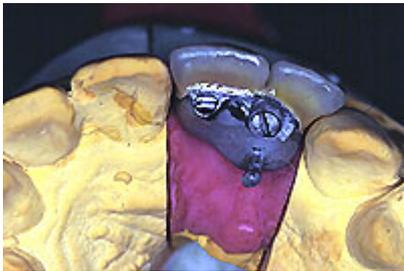
The soft tissues buccal to the schisis are scarred due to previous surgery and the left side of the upper lip has reduced mobility. To camouflage this unesthetic situation, a resin flange was created and connected to the metallic frame via a vestibular-lingual insertion (fig.8-9). In this way the surgical scars were concealed and the emerging profile of 2.1 was corrected with a good esthetic result.



This flange is removable from the patient for hygienic reasons and to let the tissues rest during the night. After 5 years, two wings debonded from the enamel (on 2.3 and 2.4) causing reduced retention and increased difficulties cleaning. Since it was impossible to remove the Maryland Bridge without cutting it, it was decided to use a different and new technique.

A Computerized Axial tomography of the maxilla was performed, followed by a bone graft stabilized with a screw (fig.10); after two months, the screw was removed and two implants were inserted in the 2.1,2.2 area.

After 6 months, when the osseointegration was completed, a new prosthetic treatment started. During this period the patient again wore a removable appliance which was periodically relined with soft acrylic to solve the esthetic problem and guide the soft tissue improvement, avoiding contact with the implants.



Since one of these two implants (2.1) was very buccally oriented (fig.11) and far from the insertion axis of 1.1, a special prosthetic device was created to obtain a satisfactory esthetics.

An intermediate frame was fabricated and screwed onto the implants. The two splinted crowns were partially opened buccally (fig.12), and the palatal sides had a threading to house the fixing screw of the over-structure later ceramized (fig.13-14).



This technique permits the fabrication of a fixed prosthesis, which is completely removable by the dentist to inspect the soft tissues-, a very important procedure in these types of patients.

## CONCLUSION

The patient has been wearing the prosthesis for two years and she is satisfied (fig.14). Regular checks are performed every three months and so far, there has been no soft tissue alterations or bone loss around the implants.

The only problem in this case could be the oral hygiene at home. This was partially resolved by the patient's strong motivation and by the possibility to remove the prosthesis for professional care.

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**References:**

1. Musgrave R.H.: Surgery of nasal deformities with cleft-lip. Plastic & Reconstr. Surg. 28:261, 1961
2. Diolaiti C., Giuliani R.: Il trattamento ortopedico neonatale in pazienti affetti da labiopalatoschisi congenita: parte I e II. Mondo Ortodontico, vol. XV, 2/90
3. Bonocore M.G.: Simple method of increasing the adesion of acrylic filling materials to enamel surfaces. The Journal of Dental Research 34; 849, 1995
4. Thompson V.P., Livaditis G.J., Del Castillo E.: Resin bond to electronically etched non precious alloys for resin-bonded retainers. The Journal of Dental Research 60; 377, 1981
5. Craig M., Mish R.: Comparison of intraoral donor sites for onlay grafting prior to implant placement. Int. J. Oral Maxillo fac. Implant. 12767, 1997
6. Cudia G.: Comunicazione personale, 1998

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