

# Is Effective Animal-assisted Therapy in a Patient with Martin-Bell Syndrome?

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## Introduction

Martin-Bell syndrome or Fragile X syndrome is an hereditary genetic condition that causes a neurodevelopmental disorder. It is the primary cause of hereditary intellectual disability. Some of the facial features of the patients are elongated face, prominence of the jaw, prominent ears and strabismus. Intraoral features include deep palate, crossbite, gingivitis and periodontitis. The behavior management for these patients can be difficult, but using the correct adaptation technique a successful dental treatment can be executed.

## Case Report

- 10-year, 9-month old male patient, Frankl 1 scale
- Martin-Bell Syndrome
- Second phase mixed dentition, high cariogenic risk, caries activity (ceod 1 and COPD 1)
- Generalized gingivitis induced by dental biofilm
- Maxillary compression and left cross bite
- Mouth breathing, dermatophagia, labial interposition, finger sucking, hyperstonic lower lip and citrus sucking

The patient had previous experiences at the dentist, but as the years went by his behavior got worst. In the first session the intraoral exam could not be performed, so different stages in the treatment were defined.

1. First approach
2. Animal-assisted therapy (AAT)
3. Preventive treatment
4. Restorative treatment
5. Orthopedic treatment

### 1. First Approach



During the session different adaptive techniques were used, such as tell show do, positive reinforcement and voice control. The patient had little cooperation and maintained the mouth open for 3 seconds. A device made with tongue depressors was used to maintain the aperture. This was given to the mother so that they could use it at home, so that the aperture period could be increased.



The patient had previous knowledge of the instruments, since the mother is a dental assistant, so she handled a set of examination instruments at home.

## 2. Animal Assisted Therapy

In the second session the patient sat in the dental chair next to the therapy dog, demonstrating a change in the patient's behavior, allowing the intraoral exam, photography and prophylaxis to be performed.



But, in a third session when the therapy dog was not in the clinic, the patient at first did not want to be treated, but with the use of other adaptation techniques it was possible to continue with the treatment. This showed that AAT had a better effect on the patient compared to other techniques.

## 3. Preventive treatment

It is currently planned to perform a new prophylaxis and sealants on teeth 1.6-2.6-3.6.

## 4. Restorative treatment

A vestibular restoration of tooth 4.6 is planned, but its execution depends on the level of adaptation that has been achieved.

## 5. Orthopedic treatment

Palatal expander is planned, but using an intraoral scan to avoid conventional impressions than can be uncomfortable and the adaptation achieved with the patient can be lost.

## Conclusion

Adaptive techniques are important tools when treating pediatric patients, but each of them will be accepted differently by the different patients. This case showed that although many conventional adaptation techniques were used, the AAT was successfully accepted by the patient, changing his behavior from a Frankl 1 to Frankl 3. With more adaptation sessions, it is expected that the patient will have a better behavior and achieve the orthopedic treatment.



## References

Sabbagh-Haddad A, Haddad DS, Michel-Crosato E, Arita ES. Fragile X syndrome: panoramic radiographic evaluation of dental anomalies, dental mineralization stage, and mandibular angle. *J Appl Oral Sci.* 2016;24(5):518-23.

Review: Orofacial Considerations in Dental Management of Fragile X Children IADR Abstract Archives [Internet]. [citado 2 de enero de 2023]. Disponible en: <https://iadr.abstractarchives.com/abstract/chilean-iadr2017-2817160/review-orofacial-considerations-in-dental-management-of-fragile-x-children>

Lee AW, Ventola P, Budimirovic D, Berry-Kravis E, Visootsak J. Clinical Development of Targeted Fragile X Syndrome Treatments: An Industry Perspective. *Brain Sci.* 5 de diciembre de 2018;8(12):214.