

# Oral Rehabilitation Therapies in A Patient with Facial Dysmorphia and Psychiatric Profile - Clinical Case Report

Laura Elisabeta

CHECHERIȚĂ<sup>1</sup>, Lucian Ștefan BURLEA<sup>2\*</sup>, Liana AMINOV<sup>3</sup>, Raluca Elena BACIU<sup>4</sup>, Bogdan Petr BULANCEA<sup>5</sup>, Ioana RUDNIC<sup>6</sup>, Iulian Costin LUPU<sup>7</sup>, Ovidiu STAMATIN<sup>8</sup>

<sup>1</sup>Department of Odontology, Periodontology and Fixed Prosthesis, Faculty of Dental Medicine, Grigore T. Popa University of Medicine and Pharmacy, 16 Universității Street, 700115, Iasi, Romania

<sup>2</sup>Public Health and Management Department, Faculty of Dental Medicine, Grigore T. Popa University of Medicine and Pharmacy, 16 Universității Street, 700115, Iasi, Romania; e-mail: [lucianburlea@yahoo.com](mailto:lucianburlea@yahoo.com)

\* Corresponding author

<sup>3</sup>Department of Odontology, Periodontology and Fixed Prosthesis, Faculty of Dental Medicine, Grigore T. Popa University of Medicine and Pharmacy, 16 Universității Street, 700115, Iasi, Romania

<sup>4</sup>Department of Oral-Implantology, Dental Prostheses Technology, Removable Dentures, Faculty of Dental Medicine, Grigore T. Popa University of Medicine and Pharmacy, 16 Universității Street, 700115, Iasi, Romania.

<sup>5</sup>Department of Oral-Implantology, Dental Prostheses Technology,

**Abstract:** *This article describes rehabilitation of one case, complex psychiatric treatment, facial asymetry, with mandibular and maxilla missing teeth and dental disharmony, with a fixed and also removable hybrid prosthesis. Rehabilitation with fixed or removable prosthesis is even more challenging when the edentulous span is long and the ridge is irregular deformities and unfavorable biomechanics encountered at the prosthetic field for complex rehabilitation.*

*In such situation, a fixed-removable prosthesis allows favorable biomechanical stress distribution along with restoration of esthetics, phonetics, comfort, hygiene, and better postoperative care and maintenance.*

**Keywords:** *Fixed dental prosthesis; fixed-removable partial denture; mandibular and maxilla edentation; removable partial denture; psychiatric treatment.*

**How to cite:** Checheriță, L. E., Burlea, L. Ș., Aminov, L., Baciu, R. E., Bulancea, B. P., Ioana, R., Lupu, I. C., Stamatina, O. (2020). Oral Rehabilitation Therapies in A Patient with Facial Dysmorphia and Psychiatric Profile - Clinical Case Report. *BRAIN. Broad Research in Artificial Intelligence and Neuroscience*, 11(3), 207-219.

<https://doi.org/10.18662/brain/11.3Sup1/137>

Removable Dentures, Faculty of Dental Medicine, Grigore T. Popa University of Medicine and Pharmacy, 16 Universităţii Street, 700115, Iasi, Romania.

<sup>6</sup> Department of Odontology, Periodontology and Fixed Prosthesis, Faculty of Dental Medicine, Grigore T. Popa University of Medicine and Pharmacy, 16 Universităţii Street, 700115, Iasi, Romania

<sup>7</sup> Public Health and Management Department, Faculty of Dental Medicine, Grigore T. Popa University of Medicine and Pharmacy, 16 Universităţii Street, 700115, Iasi, Romania

<sup>8</sup> Department of Oral-Implantology, Dental Prostheses Technology, Removable Dentures, Faculty of Dental Medicine, Grigore T. Popa University of Medicine and Pharmacy, 16 Universităţii Street, 700115, Iasi, Romania.

## Introduction

Facial dysmorphisms are a complex clinical entity with profound facial implications the picture of this is even more complex given the facial echo of dental imbalances caused by edentation and their complications and also general disease influences (Agarwal et al., 2011; Chronopoulos et al., 2008; Munot et al., 2017; Roumanas, 2009).

In general, the facial asymmetry of adult patients are candidates for surgical correction therefore, patient assessment and selection remain major issues in diagnosis and treatment planning. It depends very much on the degree of asymmetry so mild to moderate facial asymmetry can be managed by orthodontic treatment. Severe skeletal asymmetry most often requires a management protocol surgery (Chan, 2008; Itoh et al., 2008; Ishizaki et al., 2010; Oh & Basho, 2010).

Minor facial asymmetry is common and can be observed in every individual there is a normallity in the aesthetic norms, facial asymmetry affects the lower half of the face more than the upper face.

Such dysmorforpholgychal facial aspects, are, in general, due to congenital, traumatic, or developmental deformities. Developmental deformities may be associated with idiopathic causes which might gradually progress into definite facial asymmetry (Emami & Feine 2010; Olthoff et al., 2007; Weber & Sukotjo, 2007).

Facial asymmetry is the condition in which one half side of the face does not resemble to the other in shape and dimensions and can be from dental origin or be caused by a different type of occlusal imbalances, general affectation that can induced the idee of assimetry or some kind of occlusal conditions such as unilateral cross-bite, forced lateroocclusion, discrepancy of the midlines of the upper and lower dental arch present extraoraly with facial asymmetry.

Prosthetic dentistry train the restoration and maintenance of oral functions, comfort, stability, appearance, and health of the patient by the substitution of missing teeth and contiguous tissues with artificial substitutes (Brown et al., 2016; Nur et al., 2016; Gharechahi et al., 2008; Jackson et al., 2013).

Our clinical case is represented by C.M., from Iasi, 52 years old male patient, builder, divorced, with accentuated profile of depression (Fig. 1. a), facial assimetry objectified by facial measurements, facial index 118, leptoprosop (Fig. 2. b, c, d), and psychiatric treatment for depression.



**Fig.1.** a,b,c,d,e, f.Face and profile examination and anthropometric measurements.

Reasons for presentation were: masticatory and physiognomic disorders, gingival bleeding, halitosis.

History of the disease:

- Chronology and etiology of tooth loss- tooth loss began 37 years ago and has continued until today, due to the complication of tooth decay.
- The patient does not received previous prosthetic treatment, and the dental treatments performed were in an emergency.

General and dental hereditary-collateral antecedents:

- His mother: hypertension; multiple carious lesions and periodontal disease.

General and dental personal history: depression, hypertension, hypertyroidism and at dental level: multiple carious lesions, periodontal disease, radicular chist.

Living and working conditions: hightlevel of stress, physicalwork also accentuated family misunderstandings.

At TMJ also muscular subjective clinical examination: absence of pain but a TMJ disorder (Fig 2. a, b, c, d, e).



**Fig. 2.** a, b, c, d, e. TMJ and muscle clinical examination.

ObjectiveTMJ exam:

Static inspection: left latero-deviation 2mm; dynamic inspection: lateral deviation of the chin to the left at the maximum opening of the mouth; in profile the step movement of the chin. Palpation: asymmetrical, asynergic movements, of increased amplitude on the right side. Listening: right joint crack.

TMJ mobility: opening- 4 cm; right laterality- 7mm; left side- 8mm; propulsion- 10 mm; Retropulsion- 1 mm.

The examination of the maxillary and mandibular dental arches as well as the examination of the static and dynamic occlusion we notice important imbalances and the presence of the potential prosthetic divides but also the functional irregularity of the ridges and the existing disharmonies (Fig. 3. a, b, c).



**Fig. 3.** a, b, c. Intraoral examination- maxillar, mandibylar and occlusal initial aspects.

In order to obtain a complete and solid diagnosis, we are accompanied by the presence of paraclinical examinations oropantomography and the study model that objectifies us and offers us important suggestions in the subsequent therapeutic approach (Fig. 3, 4).



**Fig. 3.** Paraclinical examination orthopantomography.



**Fig. 4.** Model study executed after surgical intervention— extraction of radicular rests (14, 24, 25, 26, 34, 45, 47) and 1.2, 2.3 frontal cystectomy. After all the investigations we can focus on the case diagnosis.

## Diagnosis

I. General health status diagnosis-General status allows the dental treatment.

II. Loco-regional diagnosis:

1. Dental integrity diagnosis:

Abrasion: at the teeth level: 13, 23, 33, 31, 41, 42, 43 (2nd class Broca), 35 (1st class Broca), of functional etiology, affecting physiognomic and masticatory function and stationary evolution, without local complications, favorable prognosis, untreated.

2. Coronary odontal lesions:

To the level of the teeth: 28, 44, (class 1 Black), 35, 22, 32 (class 4 Black), of microbial etiology, with the affect of the physiognomic functions, the masticatory ones, with slow evolution, without local complications, favorable prognosis, untreated.

3. Pulpal lesions:

Simple pulpal gangrene, located at the level of tooth 48, of microbial etiology, with impaired masticatory, physiognomic and phonetic function with slow evolution, without local complications, favorable prognosis, untreated.

Chronic periodontitis, located at the level of teeth: 12, 32, 22 bacterial etiology, with impaired masticatory and physiognomic function, with slow evolution, without local complications, favorable prognosis, untreated.

4. Periodontal integrity diagnosis:

Generalized chronic marginal periodontitis, maxilla and mandibular, medium, of microbial etiology, with chewing and physiognomic disorders, with slow evolution in time, with local complications (dental migration) and loco-regional (TMJ dysfunction), with favorable prognosis by treatment, untreated.

5. Arch integrity diagnosis:

- Extended, maxillary partial edentation, Kennedy class II, with 2 changes, subclass C Lejoyeux, of carious etiology, with masticatory, physiognomic, swallowing, phonetic disorders, slow evolution with local (dental migration) and loco-regional (TMJ) complications, with favorable prognosis by treatment, untreated.

- Extended, mandibular partial edentation, Kennedy class II, with a modification, subclass B Lejoyeux, of carious etiology, with masticatory, phonetic disorders, physiognomy, swallowing, slow evolution with local (dental migration) and loco-regional (TMJ) complications, with favorable prognosis by treatment, untreated.

- TMJ diagnosis: Articular dysfunction, TMJ impairment through asymmetric, asynergic and left lateral deviation of the 3 mm chin in the opening movement, the etiology given by malocclusion, with masticatory functional disorders, swallowing with slow evolution, with local and loco-regional complications, prognosis, untreated.

#### 6. Muscular dysfunction:

Muscular dysfunction, muscular hypotonia on elevators and orofacials (orbicularia of the lips; buccinator) of the etiology given by the joint dysfunctions and malocclusion, with functional masticatory disorders, swallowing, physiognomic, phonetic, with slow evolution, with local-regional and prognostic complications, favorable in case of treatment, untreated.

#### 7. Homeostasis dysfunction

Dysfunctional, maxilla and mandible, compensating dishomeostasis, clinically manifest (laterodeviation, malocclusion, malposition, asymmetrical muscular contraction), odontal and periodontal etiology, with impaired physiognomic, masticatory and self-sustaining functions, with slowly progressive local evolution, abrasion degree, frontal mandibular and superior canine ) and loco-regional (muscular, joint), prognosis reserved, untreated.

#### 8. Mucosa, tongue, salivary gland integrity diagnosis- normal.

#### 9. Surgical diagnosis:

Irrecoverable root residues, at the level of teeth: 14, 24, 25, 26, 34, 45, 47, of carious etiology, affecting the masticatory and physiognomic functions, with local complications, unfavorable prognosis, untreated.

#### Hygiene Diagnosis:

Unsatisfactory Oral Hygiene.

In order to complete the treatment plan, we organize ourselves in management for the complex oral rehabilitation of the patient with the restoration of the occlusion plan, the cranio-mandibular repositioning with the help of temporary acrylic partial dentures as well as therapeutic situation.

Treatment Plan:

1. Health education:
  - patient awareness on its oral health;
  - explanation of sanitation methods for oral hygiene (a correct brushing technique, encouraging the use of dental floss and mouthwash);
  - convincing the patient about the utility of the treatment;
  - proposing and establishing the optimal treatment plan and treatment stages.
2. General preparation of the body:
  - physical: correct diet;
  - psychological: creating a good psychological tonus with a fair, serious and understanding attitude of the dental team.
3. Pre-Prosthetic Treatment Plan:
  - Cariestreatment at 28, 44, (class 1 Black), 35, 22, 32 (class 4 Black) and for abrasion of frontal area group.
  - Pulpartreatment at 12, 32, 22.
  - Periodontal component: scaling; professional brushing.
  - Surgical treatment cystectomy and extraction.
3. Pro-prosthetic treatment plan:
  - Preparation of organic substructures at maxilla and mandibular and IOS rebuilding structure of 1.2, and 2.2(Fig.5.a,b,c).



**Fig 5.** a, b, c. Preparation of dental substructure and IOS dental rebuild.

Provisory acrylic crown and removable partial denture for maxxila and also mandibular.

The intermediate stages of the fixed prosthetic treatment of the extraoral and intraoral skeletal sample as well as the temporary prosthesis and the occlusal adaptation of the fixed prosthesis part in the context of the unveiled palate of the occlusion but recovered with the temporary prosthesis (Fig. 6. a, b, c).



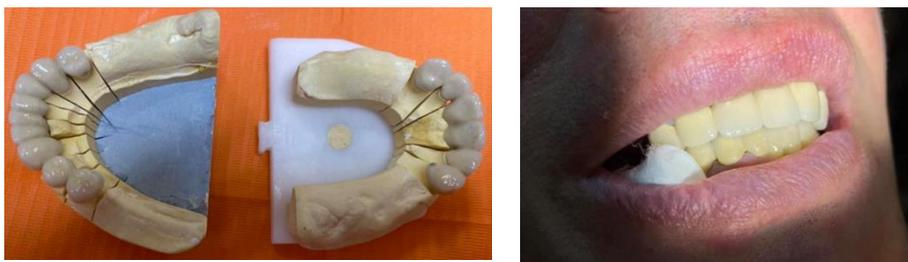
**Fig 6.** a, b, c. Extraoral and intraoral aspects of skeletal frame-model study and oral cavity.

Maxillatherapeutical solution:

- 6 metallo-ceramic elements, fixed prosthesis (Fig. 7. a, b, c ) and
- flexible therapeutical solution.
- Class 1 Kennedy extended with 1 modifications;
- Flexible palatal denture composed of:
  - a flexible main connector palatine plate in contact with remaining teeth;
  - 2 acrylic saddle bearing 8 artificial acrylic anatomorphic medium height cusp teeth with EMSS, at 1.3, 2.3.

Mandibletherapeutical solution

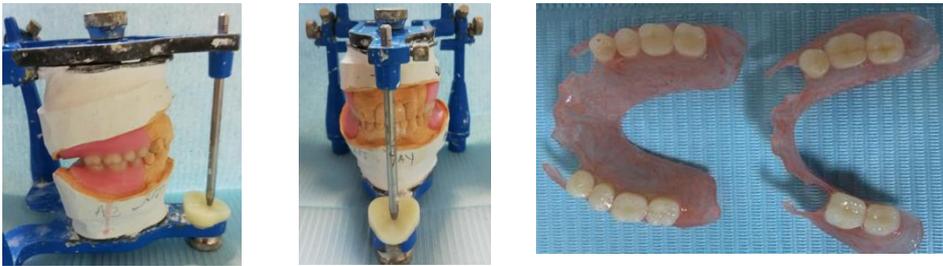
- Physiognomic metallo-ceramic bridge 3.5 to 4.4 composed of:  
Crowns– 3.5, 3.3, 4.1, 4.4 Pontics– 3.4, 3.2 and 3.1;
- Flexible denture.



**Fig. 7.** a, b, c. Extaroral and intraoral aspects of metallo-ceramic crowns structures.

Removable treatment aspects:

Some aspects regarding the treatment with partially adjuvant prostheses and the use of the articulator in achieving an occlusion (Fig. 8. a, b,c) as close as possible to our desideratum as well as their adaptation in the hybrid context of the articulated joint prosthesis with the adjuvant for optimal occlusal and temporary stage prosthesis (Fig. 9.a,b,c).



**Fig. 8. a, b, c.** Articulator presentation of removable intermediare etape and extraoral presentation.



**Fig. 9.** Patient with treatment applied- face and profile.

## Discussions

Management of cases with facial asymmetry psychiatric disease, depends on the severity of the discrepancy, the treatment needs of acase, and the esthetic awareness of the patient. Facial asymmetry involves a combination of dental, skeletal, and soft tissue factors.

A comprehensive diagnosis is important in patients with facial asymmetry so as to formulate a treatment plan suited for each patient.

A clinician has to keep in consideration the treatment needs and desire of the patient before deriving the treatment plan for a case.

Paraclinical examination, OPG, provides three-dimensional details of the craniofacial skeleton and has been used for evaluating disarmony of arches asymmetry also model study and clinical examination inspection.

The facial asymmetry is a major aesthetic deficiency, but thanks to modern dentistry it can be successfully resolved through a contemporary prosthetic approach (Cristache et al., 2019; Zegan et al., 2017; Zegan et al.,

2017) in our case not from all points of view (Loue & Sattar, 2020; Popa & Dobrescu, 2017) but trying to draw attention to other aspects and thus improving the general appearance in correlation with the treatment of existing general pathologies (Jeyavalan et al., 2012; Maroulakos et al., 2017).

## Conclusions

In our case the treatment with a hybrid denture is an affordable choice to fulfill the patient's esthetic demands together with providing a good prognosis for the prosthesis and preservation the compromise situation.

In the context of the complex oral rehabilitation of the solved clinical case we can observe a way forward and motivations of the well-being of the physiognomic masticatory comfort marking an increase of the patient's quality of life.

## Acknowledgments

All authors contributed equally to this paper.

---

## References

---

- Agarwal, S., Praveen. G., Agarwal, S. K., & Sharma, S. (2011). Twin occlusion: A solution to rehabilitate hemi-mandibulectomy patient-a case report. *The Journal of the Indian Prosthodontic Society*, 11, 254–257. <https://doi.org/10.1007/s13191-011-0091-8>
- Brown, J. S., Barry, C., Ho, M., & Shaw, R. (2016). A new classification for mandibular defects after oncological resection. *The Lancet Oncology*, 17(1), e23–e30. [https://doi.org/10.1016/S1470-2045\(15\)00310-1](https://doi.org/10.1016/S1470-2045(15)00310-1)
- Chan, C. A. (2008). Bite-management considerations for the restorative dentist. *Dent Today*, 27(1), 108-113.
- Chronopoulos, V., Sarafianou, A., & Kourtis, S. (2008). The use of dental implants in combination with removable partial dentures: A case report. *Journal of Esthetic and Restorative Dentistry*, 20(6), 355-364. <https://doi.org/10.1111/j.1708-8240.2008.00209.x>
- Cristache, C. M., Totu, E. E., Beuran, I. A., Cărăușu, E. M., Totu, T., & Burlibasa, L. (2019). Virtual Models Obtained via Intraoral Scanning as Alternated to Clinical Evaluation and beta- Hemihydrate Plaster Models. *Revista de Chimie*, 70(10), 3753-3758. <https://doi.org/10.37358/RC.19.10.7640>
- Emami, E., & Feine, J. S. (2010). Resin-bonded cantilever partial dentures are effective in terms of patient satisfaction in the restoration of the

- mandibular shortened dental arch. *Journal of Evidence-Based Dental Practice*, 10(1), 64-66. <https://doi.org/10.1016/j.jebdp.2009.11.021>
- Gharechahi, J., Sharifi, E., Aghdaee, N. A., & Nosohian, S. (2008). Finite element method analysis of the stress distribution to supporting tissues in a Class IV Aramany removable partial denture. (Part I: The teeth and periodontal ligament). *The Journal of Contemporary Dental Practice*, 9(6), 65-72. <https://doi.org/10.5005/jcdp-9-6-65>
- Ishizaki, K., Suzuki, K., Mito, T., Tanaka, E. M., & Sato, S. (2010). Morphologic, functional, and occlusal characterization of mandibular lateral displacement malocclusion. *American Journal of Orthodontics and Dentofacial Orthopedics*, 137(4), 454.e1-454.e9. <https://doi.org/10.1016/j.ajodo.2009.10.031>
- Itoh, H., Baba, K., Aridome, K., Okada, D., Tokuda, A., Nishiyama, A., Miura, H., & Igarashi, Y. (2008). Effect of direct retainer and major connector designs on RPD and abutment tooth movement dynamics. *Journal of Oral Rehabilitation*, 35(11), 810-881. <https://doi.org/10.1111/j.1365-2842.2008.01868.x>
- Jackson, T. H., Mitroff, S. R., Clark, K., Proffit, W. R., Lee, J. Y., & Nguyen, T. T. (2013). Face symmetry assessment abilities: Clinical implications for diagnosing asymmetry. *American Journal of Orthodontics and Dentofacial Orthopedics*, 144, 663-671. <https://doi.org/10.1016/j.ajodo.2013.06.020>
- Jeyavalan, M. I., Narasimman, M., Venkatakrishnan, C. J., & Philip, J. M. (2012). Management of long span partially edentulous maxilla with fixed removable denture prosthesis. *Contemporary Clinical Dentistry*, 3(3), 314-316. <https://doi.org/10.4103/0976-237X.103625>
- Loue, S., & Sattar, A. (2020). Visioning Inclusion in an Academic Medical Center. *Postmodern Openings*, 11(2 Supl 1), 79-92. <https://doi.org/10.18662/po/11.2Sup1/180>
- Maroulakos, G., Nagy, W. W., Ahmed, A., & Artopoulou, I. I. (2017). Prosthetic rehabilitation following lateral resection of the mandible with a long cantilever implant-supported fixed prosthesis: A 3-year clinical report. *Journal of Prosthetic Dentistry*, 118, 678-685. <https://doi.org/10.1016/j.prosdent.2017.01.019>
- Munot, V. K., Nayakar, R. P., & Patil, R. (2017). Prosthetic rehabilitation of mandibular defects with fixed-removable partial denture prosthesis using precision attachment: A twin case report. *Contemporary Clinical Dentistry*, 8(3), 473-478. [https://doi.org/10.4103/ccd.ccd\\_117\\_17](https://doi.org/10.4103/ccd.ccd_117_17)
- Nur, R. B., Çakan, D. G., & Arun, T. (2016). Evaluation of facial hard and softtissue asymmetry using cone-beam computed tomography. *American Journal of Orthodontics and Dentofacial Orthopedics*, 149, 225-237. <https://doi.org/10.1016/j.ajodo.2015.07.038>

- Oh, W. S., & Basho, S. (2010). Esthetic removable partial denture design in replacing maxillary anterior teeth. *General Dentistry*, 58(6), e252-e256.
- Olthoff, L. W., Van der Glas, H. W., & Van der Bilt, A. (2007). Influence of occlusal vertical dimension on the masticatory performance during chewing with maxillary splints. *Journal of Oral Rehabilitation*, 34(8), 560-565. <https://doi.org/10.1111/j.1365-2842.2007.01730.x>
- Popa, C. E., & Dobrescu, T. (2017). The Effectiveness of Therapeutic Physical Exercises in Improving Balance and Coordination in Children with Down Syndrome. *Revista Romaneasca pentru Educatie Multidimensionala*, 9(3), 89-102. <https://doi.org/10.18662/rrem/2017.0903.06>
- Roumanas, E. D. (2009). The social solution-denture esthetics, phonetics, and function. *Journal of Prosthodontics*, 18(2), 112-115.
- Weber, H. P., & Sukotjo, C. (2007.) Does the type of implant prosthesis affect outcomes in the partially edentulous patient? *The International Journal of Oral & Maxillofacial Implants*, 22(Suppl), 140-147.
- Zegan, G., Anistoroaei, D., Golovcencu, L., Cernei, E. R., Dascălu, C. G., & Cărăușu, E. M. (2017). Physicochemical Properties of Advanced Nanostructured Materials for Dental Microimplant Coatings. *Revista de Chimie*, 68(9), 2052-2054. <https://doi.org/10.37358/RC.17.9.5820>
- Zegan, G., Cărăușu, E. M., Golovcencu, L., Sodor Botezatu, A., Cernei, E. R., Anistoroaei, D. (2017). Nanoparticles Deposition on Mini-implants for Osseointegration and Antibacterial Properties Improvement. *Revista de Chimie*, 68(12), 2929-31. <https://doi.org/10.37358/RC.17.12.6009>