International Poster Journal IPJ of Dentistry and Oral Medicine

Int Poster J Dent Oral Med 2007, Vol 09 No 04, Poster 382

Prosthetic rehabilitation of a patient with scleroderma- induced microstomia

A clinical report

Language: English

Authors:
Anca Jivanescu, DMD, PhD Assistant Prof., Departement of Prosthodontics
Dorin Bratu, Professor
Meda Negrutiu, Lecturer
Faculty of Dentistry, University of Medicine and Pharmacy "Victor Babes", Timisoara, Romania

Date/Event/Venue:
12-14 April
12 th Congress of the Bass

Poster Award
Istanbul, Turkiye

Introduction

Scleroderma is a multi-system connective tissue disease that may induce facial region's bone resorption which hampers the normal mouth aperture. Nutrition and hygiene problems, with effects on the oral mucosa and dentition, often result. The limited mouth aperture complicates adequate dental treatment.

Objectives

A 50 year old female patient presented at the Faculty of Dentistry Timisoara, Departement of Prosthodontics with an advanced stage of scleroderma. She was completely edentulous at the maxilla and was asking for a complete denture. Clinical examination revealed a rigid face , with reduced vertical dimension of occlusion and severe skin and mucosal fibrosis. The muscular tonus was decreased, the cheek is in tension, the lips presented reduced mobility. (Fig.1) The hands presented typically deformation for these illness with presence of the Raynaud phenomenom, which causes locomotor handicap.(Fig.2) The maximum intercomisural diameter with open mouth was 38mm, and the amplitude of the opening was 18mm.?(Fig.3) Intraoral examination revealed a ridge with average size and retentivity.

Fig.1. Facial appearance of the patient before treatment

Fig.2 Specifically deformation of the hands and fingers

Fig.3. Reduced mouth opening(microstomia)

Material and Methods

After a rigorous clinical examination, the therapeutic decision was for a flexible maxillary complete denture, as a long lasting provisionally prosthetic solution. The preliminary impression was realized with a sectorial impression technique. A standard tray was used, which was sectioned in the middle with a disc(No 946.104 Komet, Brasseler, Gmbh) and two alginate sectorial impressions(Palgaflex Kulzer) were taken. Afterwards the palatine vault was marked with putty silicon(Zetaplus-Zhermack).(Fig.4) The preliminary impression required adjustements, after which the first individual tray was made. A fluid silicon(Oranwash-Zhermack) impression was taken, without being able to border molding.(Fig.5). The impression served to create a more adaptable individual tray of a smaller size. After the border molding and impression taking the final model was poured (Fig.6). The intermaxillary relationships were taken with ocluzal rims only in the frontal area because the opposite arch was a shortened dental arch. The technical steps for the fabrication of the flexible complete denture were: the flasking and thermoplastic injecting, using the Injektor R3-C machine, and Flexite plus material from the Flexite Company(Fig.7,8). The temperature regime was 238 C degrees for 20 minutes, and the injecting was for 3 seconds at 7,2atm. The flexible complete denture has a small flexibility degree but still allows insertion and removal with no difficulty into the oral cavity.(Fig.9) After the insertion of the complete denture, the facial appearance of the patient was considerably improved .(Fig.10). The patient was instructed to have regular follow -ups and to maintain her oral hygiene.

Fig.4. Preliminary sectional impression

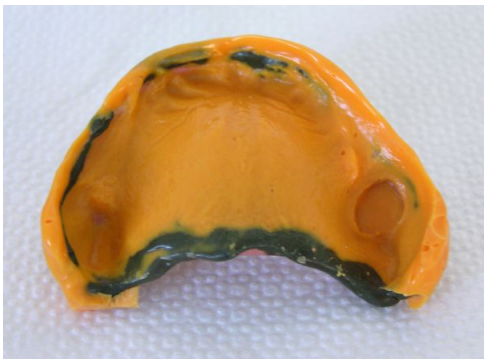


Fig.5. Final impression

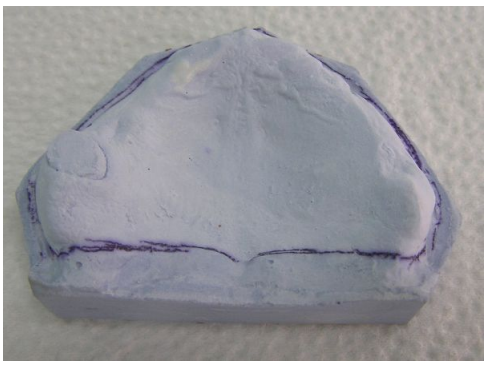


Fig.6. Final cast

Fig.7.Try-in

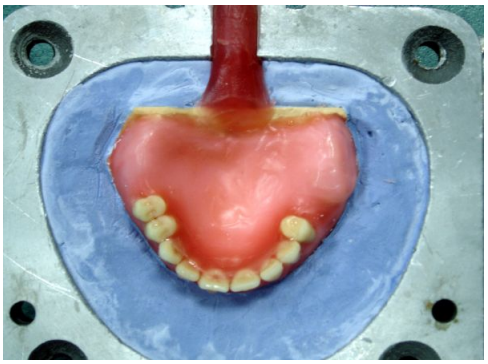


Fig.8. Falsking and injecting the try-in

Fig.9. The Injektor R-3C

Fig.10. The Flexite Plus complete denture

Fig.11. Facial appearance of the patient after prosthetic rehabilitation

Results

After a 6 month period of accommodation, the patient was recalled in order to complete the long term prosthetic rehabilitation with a complete denture with metallic frame and hinge on the medial line. Unfortunately, because of the severe complications from the scleroderma, the patient was not able to complete the treatment.

Conclusions

Severe reduce of the oral cavity opening of the patients with systemic scleroderma is challenging for the prosthetic rehabilitation. This poster presented clinical and technical steps involved in fabrication of a flexible complete denture in case of a female patient with scleroderma induced microstomia .

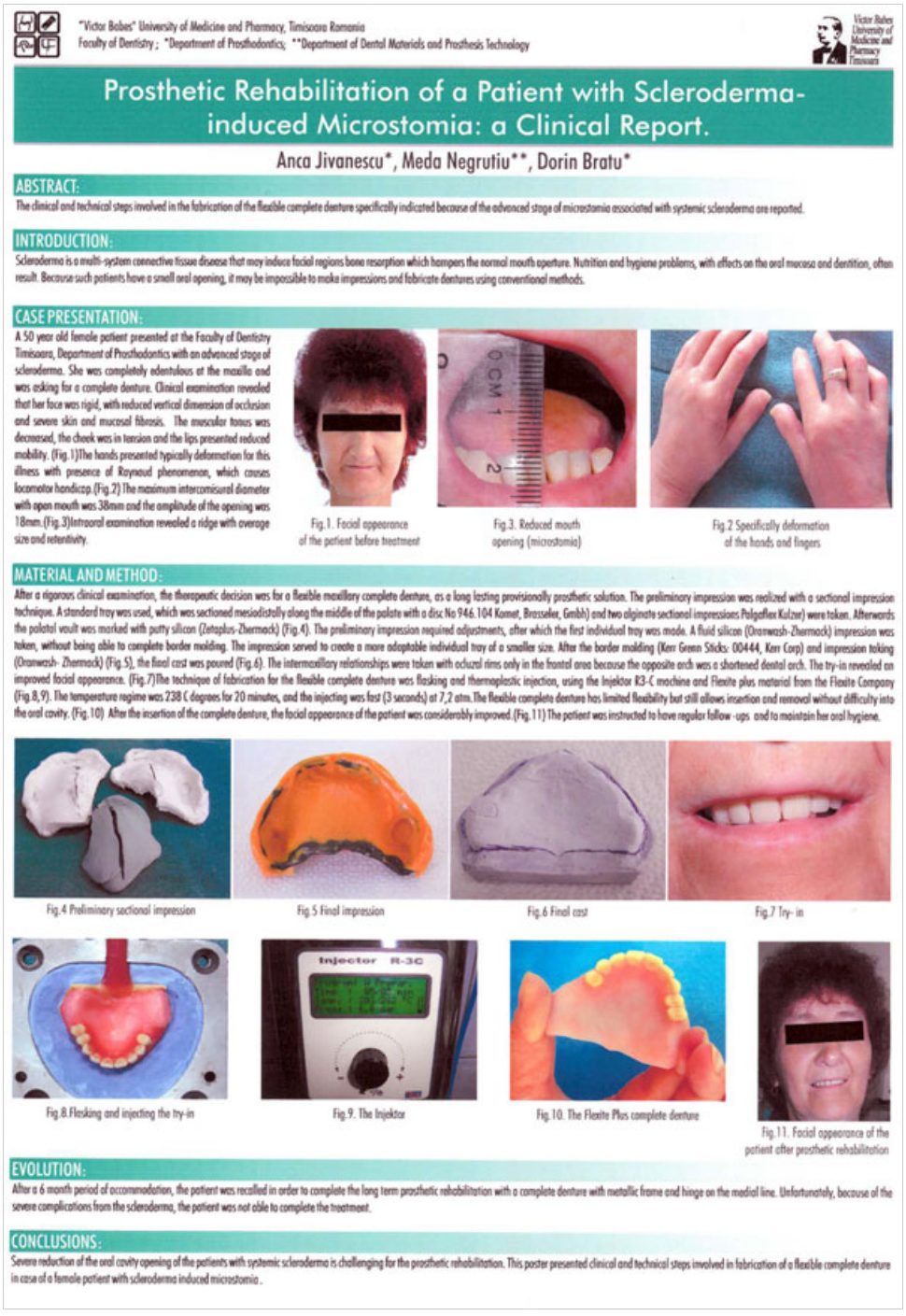
Literature

1. Al Hadi LA. A simplified technique for prosthetic treatment of microstomia ina patient with scleroderma: a case report. Quintessence Int 1994;25:531-3.
2. Arcuri MR, Eike L, Deets K. Maxillary sectional impression tray technique for microstomic patients. Quintessence Dent Technol 1986; 10:62-9.
3. Benetti R, Zupi A, Toffanin A.- Prosthetic rehabilitation for a patient with microstomia: a clinical report. J Prosthet Dent.2004 oct; 92(4):322-7.
4. Black CM- The treatment of systemic sclerosis. Adv Exp Med Biol, 1999;455:271-277.
5. Conroy B, Reitzik M. Prosthetic restoration in microstomia. J. Prosthet. Dent. 1971,;26:324-7.
6. Denton CP, Black CM- Scleroderma and related disorders: therapeutic aspects. Baillere Clin Rheum, 200;14(1):17-35
7. Dhanasomboon S, Kiatsiriroj K. Impression procedure for a progressive sclerosis patient : a clinical report. J Prosthet Dent 2000;83:279-82.
8. Heasman PA, Thomason JM, Robinson JG. The provision of protheses for patients with severe limitation in opening the mouth. Br. Dent J 1994;176:171-4.
9. Khan Z, Banis JC.Oral commissure expansion prothesis.J Prosthet Dent 1992;67:383-5
10. Koumjian JH, Firtell DN. A prosthesis to control microstomia. J Prothet Dent 1990:64 :502-3.
11. Lee JH. Sectional partial dentures incorporating an internal locking bolt. J Prosthet Dent 1963;13:1067-75.
12. L'Estrange PR, Warner EP. Sectional dentures- a simplified method of attachement. Dent Pract Dent Rec 1969;19:379-81.
13. Marmary Y, Glaiss R, Pisanty J. Scleroderma:oral manifestations. Oral Surg Oral Med Oral Pathol 1981; 52:32-7.
14. Mc Cord JF, Moody GH, Blinkhorn AS. An overview of dental treatment of patients with microstomia. Quintessence Int 1990;21:903-6.
15. Moghadam BK. Preliminary impression in patients with microstomia. J Prosthet Dent 1984;52:135-7.
16. Naylor WP, Manor RC. Fabrication of a flexible prothesis for the edentulous scleroderma patient with microstomia. J. Prosthet Dent 1983:50:536-8.
17. Roca RP, Wigley FM- Psychological aspects in systemic sclerosis, Clements PJ, FurstD(eds), Baltimore, 1996, Williams&Wilkins, 501-511
18. Wahle JJ, Gardner LK, Fiebiger M.-The mandibular swing-lock complete denture for patients with microstomia. J. Prosthet Dent. 1992 sep;68(3):525-7
19. Watson RM. Two part dentures with precision attachements. Br. Dent J 1972; 132:287-8.

This Poster was submitted by Anca Jivanescu, DMD, PhD Assistant Professor.

Correspondence address:
Anca Jivanescu, DMD, PhD Assistant Professor
Departement of Prosthodontics
Faculty of Dentistry
University of Medicine and Pharmacy "Victor Babes"
Anghel Saligny str. No.17
300588 Timisoara
Romania
tel./fax: 0040256463314

Poster Faksimile:



"Victor Babes" University of Medicine and Pharmacy, Timisoara Romania
Faculty of Dentistry; *Department of Prosthodontics; **Department of Dental Materials and Prosthesis Technology

Prosthetic Rehabilitation of a Patient with Scleroderma-induced Microstomia: a Clinical Report.

Anca Jivanescu*, Meda Negrutiu**, Dorin Bratu*

ABSTRACT:
The clinical and technical steps involved in the fabrication of the flexible complete denture specifically indicated because of the advanced stage of microstomia associated with systemic scleroderma are reported.

INTRODUCTION:
Scleroderma is a multi-system connective tissue disease that may induce facial regions bone resorption which hampers the normal mouth aperture. Nutrition and hygiene problems, with effects on the oral mucosa and dentition, often result. Because such patients have a small oral opening, it may be impossible to make impressions and fabricate dentures using conventional methods.

CASE PRESENTATION:
A 50 year old female patient presented at the Faculty of Dentistry Timisoara, Department of Prosthodontics with an advanced stage of scleroderma. She was completely edentulous at the maxilla and was asking for a complete denture. Clinical examination revealed that her face was rigid, with reduced vertical dimension of occlusion and severe skin and mucosal fibrosis. The muscular tonus was decreased, the cheek was in tension and the lips presented reduced mobility. (Fig.1)The hands presented typically deformation for this illness with presence of Raynaud phenomenon, which causes locomotor handicap.(Fig.2) The maximum intercomisural diameter with open mouth was 38mm and the amplitude of the opening was 18mm.(Fig.3)Intraoral examination revealed a ridge with average size and retentivity.

Fig.1. Facial appearance of the patient before treatment

Fig.3. Reduced mouth opening (microstomia)

Fig.2 Specifically deformation of the hands and fingers

MATERIAL AND METHOD:
After a rigorous clinical examination, the therapeutic decision was for a flexible maxillary complete denture, as a long lasting provisionally prosthetic solution. The preliminary impression was realized with a sectional impression technique. A standard tray was used, which was sectioned mesiodistally along the middle of the palate with a disc No 946.104 Komet, Brasseler, Gmbh) and two alginate sectional impressions Palgaflex Kulzer) were taken. Afterwards the palatal vault was marked with putty silicon (Zetaplus-Zhermack) (Fig.4). The preliminary impression required adjustments, after which the first individual tray was made. A fluid silicon (Oranwash-Zhermack) impression was taken, without being able to complete border molding. The impression served to create a more adaptable individual tray of a smaller size. After the border molding (Kerr Genn Sticks- 00444, Kerr Corp) and impression taking (Oranwash- Zhermack) (Fig.5), the final cast was poured (Fig.6). The intermaxillary relationships were taken with occlusal rims only in the frontal area because the opposite arch was a shortened dental arch. The try-in revealed an improved facial appearance. (Fig.7)The technique of fabrication for the flexible complete denture was flasking and thermoplastic injection, using the Injektor R3-C machine and Flexite plus material from the Flexite Company (Fig.8,9). The temperature regime was 238 C degrees for 20 minutes, and the injecting was fast (3 seconds) at 7,2 atm. The flexible complete denture has limited flexibility but still allows insertion and removal without difficulty into the oral cavity. (Fig.10) After the insertion of the complete denture, the facial appearance of the patient was considerably improved. (Fig.11) The patient was instructed to have regular follow -ups and to maintain her oral hygiene.

Fig.4 Preliminary sectional impression

Fig.5 Final impression

Fig.6 Final cast

Fig.7 Try- in

Fig.8.Flasking and injecting the try-in

Fig.9. The Injektor

Fig.10. The Flexite Plus complete denture

Fig.11. Facial appearance of the patient after prosthetic rehabilitation

EVOLUTION:
After a 6 month period of accommodation, the patient was recalled in order to complete the long term prosthetic rehabilitation with a complete denture with metallic frame and hinge on the medial line. Unfortunately, because of the severe complications from the scleroderma, the patient was not able to complete the treatment.

CONCLUSIONS:
Severe reduction of the oral cavity opening of the patients with systemic scleroderma is challenging for the prosthetic rehabilitation. This poster presented clinical and technical steps involved in fabrication of a flexible complete denture in case of a female patient with scleroderma induced microstomia.