

Int Poster J Dent Oral Med 2004, Vol 6 No 04, Poster 244

Facial Profile Support by Fixed or Removable Implant Superstructures

Language: English

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Date/Event/Venue:

April, 5-7th, 2003
 International Congress on Reconstructive Preprosthetic Surgery Joint Meeting with California Association of Oral and Maxillofacial Surgeons
 Palm Springs/California/USA

Poster Award

Best Prosthetic Poster-Presentation

Introduction

Tooth loss and the resulting atrophy of the alveolar crest are causing loss of vertical height. A change in the profile with loss of the lip contour is recognized as sign for an old person.

Objectives

24 edentulous patients were analysed for the soft-tissue profile and phonation before and after implant prosthetic rehabilitation. 7 patients received a fixed reconstruction and 17 patients were treated with a removable bridge in the upper and lower jaw. The fixed superstructures were mainly restored on 8 or more implants in the maxilla and on at least 5 implants in the mandible. The removable superstructure were restored on 6 implants at the maxilla and 4 implants in the mandible.

Methods

The orthodontic profile analysis was used to determine the change of the position of the following points: Subnasale, Labrale superior, Labrale inferior, Stomium superior, Stomium inferior, Supramentale. As reference points Skin Nasion (WN) and Skin Pogonion (WP) were used after the determination of the bite. The analysis were performed with the WinCeph 4.19.1.13 software. For the statistical analysis SPSS 11.0 statistic software was used.



Prosthetic Design

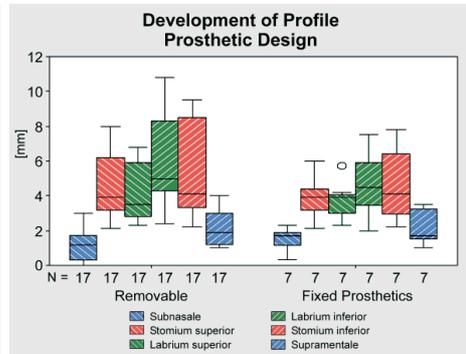
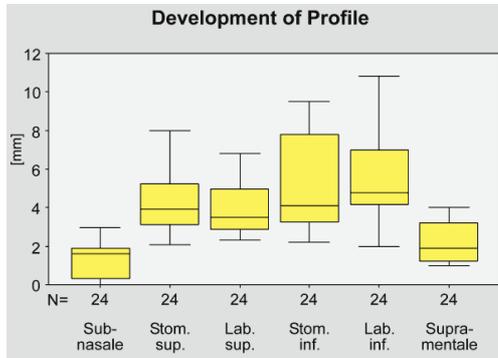
Subnasale Stomium sup. Labrium sup. Stomium inf. Labrium inf. Supramentale

Removable prosthetics

Minimum	0.00	2.10	2.30	2.20	2.40	1.00
Maximum	3.00	8.00	6.80	9.50	10.80	4.00
Mean	1.12	4.45	3.99	5.55	5.97	2.17
Median	1.20	3.90	3.50	4.10	5.00	1.90

Fixed prosthetics

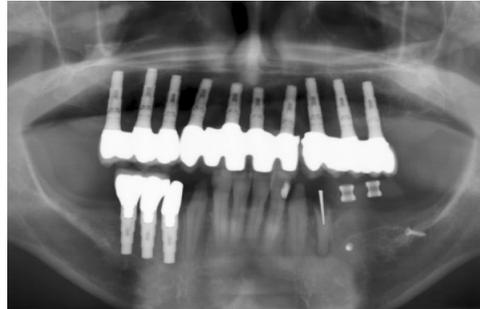
Minimum	0.30	2.10	2.30	2.20	2.00	1.00
Maximum	2.30	6.00	5.70	7.80	7.50	3.50
Mean	1.48	3.88	3.71	4.68	4.67	2.24
Median	1.70	3.90	3.90	4.10	4.50	1.70
Total						
Minimum	0.00	2.10	2.30	2.20	2.00	1.00
Maximum	3.00	8.00	6.80	9.50	10.80	4.00
Mean	1.23	4.28	3.91	5.30	5.59	2.19
Median	1.60	3.90	3.50	4.10	4.75	1.90



Fixed Prosthetics



Individual mesiostructure for the fixation of the frame work



Radiograph of fixed restoration on 10 FRIALIT®-2 implants in the maxilla



Fixed superstructure with porcelain fused crowns and soft tissue



Profile prior and after prosthetic rehabilitation

Removable Prosthetics



Reconstruction on two bars with three implants each side in maxilla



Bar reconstruction in mandible with four XIVE® implants



Final view of bar retained bridge-like prosthesis

Profile prior and after incorporation of superstructure

Conclusions

- After implant prosthetic rehabilitation in all cases the profile was developed ventral.
- Implant-borne superstructure leads to a support of the lip profile.
- The reconstruction with fixed restorations showed a reduced increase of the profile in comparison to the removable bridges.
- An individual resin base on the removable superstructure improves the vestibular contour.
- The phonation showed better results with the removable superstructures.
- Fixed bridges required more lab technician adaptations to achieve a acceptable phonetic and esthetic result.

Bibliography

1. Dibai N, Caro S. Aesthetics and osseointegration for the completely edentulous. J Dent Que 1990 ;27:407-11.
2. Tript P.A. Maximizing aesthetics, fit, and maintenance of the full-arch implant-supported porcelain-fused-to-metal restoration. Pract Proced Aesthet Dent 2002, Jun-Jul;14(5):395-400; quiz 402.
3. Schwarz A.M. Lehrgang der Gebissregelung Band I Untersuchungsang. Urban & Schwarzenberg Wien 1961.

This poster was submitted by Dr. Jörg Neugebauer.

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Poster Faksimile:

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Methods

Nasion (N) and Skin Pogonion (NP) were used after the determination of the bite. The analysis were performed with the WinCeph 4.19.1.13 software. For the statistical analysis SPSS 11.0 statistic software was used.

Conclusion

- After implant prosthetic rehabilitation in all cases the profile was developed ventral.
- Implant-borne superstructure leads to a support of the lip profile.
- The reconstruction with fixed restorations showed a reduced increase of the profile in comparison to the removable bridges.
- An individual resin base on the removable superstructure improves the vestibular contour.
- The phonation showed better results with the removable superstructures.
- Fixed bridges required more lab technician adaptations to achieve a acceptable phonetic and esthetic result.

Prosthetic Design

	Sub-nasion	Stomion sup	Labiale sup	Stomion inf	Labiale inf	Stomion mentale
Removable prosthesis						
Minimum	0.00	2.10	2.30	2.20	2.40	1.00
Maximum	3.90	4.00	4.00	3.30	3.90	4.30
Mean	1.20	3.80	3.90	4.10	3.90	3.80
Median						
Fixed prosthesis						
Minimum	0.30	2.10	2.30	2.20	2.00	1.00
Maximum	2.30	4.00	3.70	2.80	3.20	3.90
Mean	1.48	3.08	3.11	4.08	4.01	2.28
Median	1.20	3.90	3.90	4.10	4.00	1.70
Total						
Minimum	0.00	2.10	2.30	2.20	2.00	1.00
Maximum	3.90	4.00	4.00	3.30	3.90	4.30
Mean	1.20	4.00	3.91	4.00	3.90	3.80
Median	1.00	3.90	3.90	4.10	4.00	1.90

Fixed Prosthetics

Removable Prosthetics

Development of Profile

References

1. Dibai N, Caro S. Aesthetics and osseointegration for the completely edentulous. J Dent Que 1990 ;27:407-11.
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