A retrospective case report series of clinical outcomes with moderately rough, wide-diameter 8-mm implants in the posterior maxilla

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Introduction

• This study is a **retrospective report** of a small number of patients who **were treated with short, wide-diameter, moderately rough implants in their posterior maxillae.**

• Data about both implant survival and marginal bone loss are provided.
Method and materials

1 Treatment
   1.1 Period: **from June 2008 to May 2010**
   1.2 **8-mm**, moderately rough (particle-blasted and acid-treated) implants (*SuperLine*, *Dentium*) in their posterior maxillae were examined retrospectively.

2 **Sixteen patients** (10 men, 6 women)

3 Collected data
   3.1 **Measurement of marginal bone resorption**
      a Extent of crestal bone loss
         a.1 The time of prosthetic delivery compared with the time of the 1-year follow-up
         a.2 The mean resorption amount of the alveolar crestal bone was calculated for both the mesial and distal sides.
   3.2 **Crown/implant ratio**
      a were calculated using panoramic or periapical radiographs.
   3.3 **Implant survival**
      a defined as the absence of mobility, pain, paresthesias, radiolucent lesions, peri-implantitis, and/or progressive bone loss.
Results

1 The patients’ average ages: 50.4 years (ranged from 25 to 69 years)

2 Type of implant placement
   2.1 submerged type: 11 implants
   2.2 nonsubmerged type: 5 implant

3 Combined surgery (Sinus elevation): 10 patients
   3.1 bone graft: 8 patients
   3.2 no bone graft: 2 patients
Results

1 **Implant stability** (Osstell Mentor, ISQ)
   1.1 Primary stability: 66.0
   1.2 Secondary stability: 75.6

2 Healing period: 3.9 months

3 **Final Prosthesis**
   3.1 Single crown: 14 implants
   3.2 Splint: 2 implants

4 **Prosthetic type**
   4.1 cement-retained type: 11 implants
   4.2 screw-retained type: 5 implants

5 Crown/implant ratios: 1.47

6 Follow-up period: 16.2 months

7 **Marginal bone loss** at the last F/U: **0.04mm**

8 No specific complications were observed.
Results

All implants were maintained without any special problems via periodic maintenance.
Discussion

1 Because of the short observation period, the authors were unable to obtain statistically significant results. With two exceptions, the implants had a wide diameter (5 to 6mm), which may have been an important factor because a wider implant diameter has been linked to reduced stress on crestal bone.

2 In the present study, mean initial implant stability was 66 ISQ and remained relatively stable. Sennerby and Meredith reported that immediate loading was possible at ISQ values greater than 60 to 65 in the initial stability assessment using an Osstell Mentor device.
Conclusion

• The data support the conclusions of other authors that wide-diameter, 8-mm-long, moderately rough threaded implants can be successfully used in posterior maxillary sites.