the factors that may affect bone alterations following immediate implant installation. The conclusion is that the position in the vestibulo-lingual direction, relative to the vestibular alveolar ridge and the position of the vestibular gingival margin, affected how much resorption there was of the vestibular ridge.

Conclusion
Within the limitations of this study in dogs, we may conclude that:

The neck configuration, specifically the contact region of the implant neck to the crest bone, importantly to the external lateral bone height of the bone.

The BIC is larger in conical implants of type C1.

Within the limitations of this study in dogs, we may conclude that:

- Larger CBL. Implants with an internal connection, had smaller CBL.
- Higher bone loss. (p<0.05)

Table 1. Implant groups and CBL. The * marks the value with highest bone loss. (p<0.05)

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean CBL ± SD (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A, LANCE (n=16)</td>
<td>1.46±0.281mm*</td>
</tr>
<tr>
<td>Group B, SEVEN® (n=16)</td>
<td>2.46±0.281mm*</td>
</tr>
<tr>
<td>Group C, C1 (n=16)</td>
<td>1.21±0.122mm</td>
</tr>
</tbody>
</table>

Table 2. Implant groups and BIC. The * marks the value with highest bone loss. (p<0.05)

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean BIC ± SD (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A, LANCE (n=16)</td>
<td>38.6±22.3%</td>
</tr>
<tr>
<td>Group B, SEVEN® (n=16)</td>
<td>40.0±20.9%</td>
</tr>
<tr>
<td>Group C, C1 (n=16)</td>
<td>46.92±44.4%*</td>
</tr>
</tbody>
</table>

References

5. 34 News 34, October 2013
6. www.mis-implants.com
7. © MIS Corporation. All rights Reserved.
Preservation of marginal bone and bone contact as a function of implant geometry. A comparative study in dogs.

Delgado-Pería JE, Aragón-Lamas JM, Calvo-Guirado JL, Delgado-Ruiz RA, Ramírez-Fernández MP, Mata-Sánchez del Val JE, Negri B

Summary

Introduction

Loss of teeth brings about a progressive resorption with narrowing of the alveolar crestal area, as well as the vestibular subcrestal implant in the apico-coronal direction, as well as the vestibular subcrestal implant in the apico-coronal direction, as well as the vestibular subcrestal implant in the apico-coronal direction, as well as the vestibular subcrestal implant in the apico-coronal direction, as well as the vestibular subcrestal implant in the apico-coronal direction, as well as the vestibular subcrestal implant in the apico-coronal direction, as well as the vestibular subcrestal implant

have based on the surface configuration of the implant’s neck by preserving the periodontal tissue. Thus, when dealing with crestal level immediate implants, it is necessary to consider the implant without necessarily following the highest implants with external connection (B) it was 40.10%±5.3% and for group C it was 44.02%±4.2%. A comparison between all groups A, B and C were not statistically significant (p>0.05). Bone loss, which was highest for group A. Three healing abutments were lost, no implants were found to be in good overall health. Upon clinical examination, the dogs were found to be in good overall health. The study comprised of 6 Foxhound dogs, all of which were found to be in good overall health. The animals were taken to the operating room along the vertical to develop an adequate therapeutic benefit, with the implant neck zone23,25.

Discussion

Surgical Procedure

The animals were pre-anesthetized with intravenous ketamine (10 mg Kg−1, intravenous xylazine (2 mg Kg−1) and atropine (0.04 mg Kg−1). The animals were intubated with a tracheal tube and were maintained under general anesthesia with isoflurane (2%) in an open circuit. The dogs were placed under general anesthesia and intubated with a tracheal tube. The surgical site was prepared aseptically by the author. The animals were intubated with a tracheal tube and were maintained under general anesthesia with isoflurane (2%) in an open circuit. The dogs were placed under general anesthesia and intubated with a tracheal tube.

The animals were pre-anesthetized with intravenous ketamine (10 mg Kg−1, intravenous xylazine (2 mg Kg−1) and atropine (0.04 mg Kg−1). The animals were intubated with a tracheal tube and were maintained under general anesthesia with isoflurane (2%) in an open circuit. The dogs were placed under general anesthesia and intubated with a tracheal tube. The surgical site was prepared aseptically by the author. The animals were intubated with a tracheal tube and were maintained under general anesthesia with isoflurane (2%) in an open circuit. The dogs were placed under general anesthesia and intubated with a tracheal tube.

The animals were pre-anesthetized with intravenous ketamine (10 mg Kg−1, intravenous xylazine (2 mg Kg−1) and atropine (0.04 mg Kg−1). The animals were intubated with a tracheal tube and were maintained under general anesthesia with isoflurane (2%) in an open circuit. The dogs were placed under general anesthesia and intubated with a tracheal tube. The surgical site was prepared aseptically by the author. The animals were intubated with a tracheal tube and were maintained under general anesthesia with isoflurane (2%) in an open circuit. The dogs were placed under general anesthesia and intubated with a tracheal tube.

The animals were pre-anesthetized with intravenous ketamine (10 mg Kg−1, intravenous xylazine (2 mg Kg−1) and atropine (0.04 mg Kg−1). The animals were intubated with a tracheal tube and were maintained under general anesthesia with isoflurane (2%) in an open circuit. The dogs were placed under general anesthesia and intubated with a tracheal tube. The surgical site was prepared aseptically by the author. The animals were intubated with a tracheal tube and were maintained under general anesthesia with isoflurane (2%) in an open circuit. The dogs were placed under general anesthesia and intubated with a tracheal tube.

The animals were pre-anesthetized with intravenous ketamine (10 mg Kg−1, intravenous xylazine (2 mg Kg−1) and atropine (0.04 mg Kg−1). The animals were intubated with a tracheal tube and were maintained under general anesthesia with isoflurane (2%) in an open circuit. The dogs were placed under general anesthesia and intubated with a tracheal tube. The surgical site was prepared aseptically by the author. The animals were intubated with a tracheal tube and were maintained under general anesthesia with isoflurane (2%) in an open circuit. The dogs were placed under general anesthesia and intubated with a tracheal tube.
Preservation of marginal bone and bone contact as a function of implant geometry. A comparative study in dogs.

Delgado-Peña JE1, Aragón-Lamas JM1, Calvo-Guijarro JL2, Delgado-Ruiz RA2, Ramirez-Fernández MP2, Mata-Sánchez del Val JE1, Negri B1

Summary

Lack of teeth brings about a progressive resorption involving the alveolar crestal ridge. The gingiva also cigar in the apical-crestal direction. In the absence of teeth, the gingiva may be lost in the apical-crestal direction. Thinning the gingival crevicular epithelium is associated with a higher incidence of gingival recession and periodontal disease. This process is called “bone loss” and affects people of all ages.

Method and materials

The study included 3 different dog groups, each consisting of 5 dogs. The dogs were divided into groups A, B, and C. Group A consisted of 5 dogs, group B consisted of 5 dogs, and group C consisted of 5 dogs. The dogs were randomly assigned to the different groups. The dogs were kept in a controlled environment for the duration of the study.

Surgical procedure

Surgical procedures included implant insertion, healing period, and histological analysis. Implants were inserted at different positions in the alveolar ridge, including subcrestal placement. Healing periods were standardized for each group. Histological analysis involved the evaluation of bone-implant contact (BIC) and crestal bone loss (CBL).

Results

The results showed that bone loss and bone-implant contact (BIC) were affected by the position of the implants. In group A, the implants were inserted in the normal position. In group B, the implants were inserted subcrestally. In group C, the implants were inserted without any connection. Bone loss and bone-implant contact (BIC) were significantly different between groups A, B, and C.

Discussion

The findings of this study suggest that subcrestal placement of implants may help preserve bone and improve bone-implant contact (BIC). However, further studies are needed to confirm these findings and to explore the long-term effects of subcrestal implant placement.

Fig. 1: View of the three impacted teeth at the study. a) L:N: CLINIC IMPLANT b) CLINIC IMPLANT c) CLINIC IMPLANT

Fig. 2: Surgical procedure.

Fig. 3: Placing of healing abutments.

Fig. 4: Histological image showing the references for the CBL evaluation. a) LANCE Implant b) SEVEN®

Fig. 5: Histological image of BIC. A) SEVEN®

Fig. 6: Histological image of BIC. B) LANCE Implant

1 School of Medicine, Stellenbosch University, Department of Oral Biology, University of the Western Cape, South Africa. 2School of Medicine, Department of Prosthetic Dentistry and Digital Technologies, Stony Brook University, New York, USA.

References


Correspondence

Ramírez-Fernández MP, Stony Brook University, New York, USA. ramirezmp@stonybrook.edu

Acknowledgments

This study was supported by the National Institutes of Health (NIH) and the American Dental Association (ADA). The authors would like to thank the patients for their participation in this study.

Funding

This study was supported by the National Institutes of Health (NIH) and the American Dental Association (ADA).
Preservation of marginal bone and bone contact as a function of implant geometry. A comparative study in dogs.

Delgado-Pería JE, Aragonés-Lamas JM, Calvo-Guirado JL, Delgado-Ruiz RA, Ramírez-Fernández MP, Mata-Sánchez del Val JE, Negri B

Summary

Introduction

Loss of teeth brings about a progressive recession with a noticeable loss of the apical coronal crown, as well as the vestibular and lingual alveolar bone. The sequelae of these changes produce a loss of the tissue that is needed to support the teeth, and affects the appearance and function of the mouth. This is a major concern among patients due to the negative impact on the aesthetics and function of the mouth.

Materials and methods

A total of 6 Foxhound dogs (Canis lupus familiaris) were used for the study. The dogs were divided into three groups: group A, 16 LANCE Implants (MIS® Implant Technologies Ltd., Bar Lev Industrial Park, Israel), with internal conical connection implants; group B, 16 SEVEN® Implants (MIS® Implants Technologies Ltd., Bar Lev Industrial Park, Israel), with internal hexagon and (LANCE Implants, external connection); and group C, 16 C1 Implants (INcotron Implant, Germany). The dogs were randomly inserted at crestal level, one implant per half-arch, and a healing abutment was placed on the implant.

The animals were evaluated after 3 months and samples were taken for histological and histomorphometric analysis (LANCE Implant Level, SEVEN implant, and C1 implant).

Results

All implants were inserted with a crestal contact of 1.0 mm from the level of the bone, which was highest for group A. In group A there was a 2.463±0.231 mm decrease of CBL; in group B there was a decrease of 1.163±0.187 mm, while group C exhibited a decrease of 1.215±0.122 mm. A comparison between all groups showed that there was no difference between groups B and C, differences between groups B and A were statistically significant (p<0.05).

In group A there was a 44.02%±4.2% reduction of bone contact (BIC). Implants with external connection implants in group A had a lower crestal bone loss (CBL) and bone-implant contact (BIC) than implants in group B (40.10%±5.3%) and for group C it was 37.64%±2.4%. A comparison between all groups showed that there was no difference between groups B and C, differences between groups B and A were statistically significant (p<0.05).

Discussion

Demonstrated by improved implant fixation results is a visible changes in the ostomy of the vestibular alveolar bone (BXA, 40-60%), as well as in the lingual one (AYA, 35-55%).

Conflicts of interest

The study received ethical approval from the Institutional Animal Care and Use Committee of the School of Medicine and Odontology at Murcia University, Murcia, Spain.

Statistical analysis

The ANOVA test for independent samples was used, as well as the mean and standard deviation values. The value of p was set at 0.05.

Histological preparation and histomorphometric analysis

The six dogs were sacrificed 3 months after implantation. The section of the alveolar bone was performed using a drill guide (Exakt Apparatebau, Germany). Two sections were obtained, about 4 mm thick. The biopsies were processed for sectioning (EXAKT Apparatebau, Norderstedt, Hamburg, Germany). Each implant site extracted using a diamond saw and medetomidine (7µg/kg). The mixture was given before being given butorphanol (0.2 mg / kg) and medetomidine (7µg/kg). The mixture was given before being given butorphanol (0.2 mg / kg). The mixture was given before being given butorphanol (0.2 mg / kg). The mixture was given before being given butorphanol (0.2 mg / kg). The mixture was given before being given butorphanol (0.2 mg / kg).
Table 1. Implant groups and CBL. The * marks the value with highest bone loss. (p<0.05)

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean CBL ± SD (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A, LANCE n(16)</td>
<td>2.463±0.281mm*</td>
</tr>
<tr>
<td>Group B, OHX n(16)</td>
<td>1.566±0.167mm</td>
</tr>
<tr>
<td>Group C, C1 n(16)</td>
<td>1.216±0.20mm</td>
</tr>
</tbody>
</table>

Table 2. Implant groups and BIC. The * marks the value with highest bone loss. (p<0.05)

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean BIC ± SD (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A, LANCE n(16)</td>
<td>38.6±22.3%*</td>
</tr>
<tr>
<td>Group B, OHX n(16)</td>
<td>44.02±4.6%*</td>
</tr>
<tr>
<td>Group C, C1 n(16)</td>
<td>46.0±4.4%*</td>
</tr>
</tbody>
</table>

The factors that may affect bone alterations during the first 6 months following implant installation and insertion are the neck configuration, the connection type, impact the height of the crestal bone. Implants with an external connection have been shown to have a significant impact on bone preservation compared to implants with an internal connection.

Conclusion
Within the limitations of this study in dogs, we may conclude that:
- The neck configuration, specifically the connection type, impact the height of the crestal bone.
- Implants with an external connection are better preserved compared to implants with an internal connection.
- The implant neck configuration and the connection type are factors that affect bone alterations during the first 6 months following implant installation and insertion.

References
7. www.mis-implants.com
8. News No34, October 2013
9. MIS Implants Technologies Ltd.
Table 1. Implant groups and CBL. The * marks the value with the highest bone resorption (p<0.05).

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean CBL ± SD (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A, LANCE n(16)</td>
<td>3.463±0.187mm*</td>
</tr>
<tr>
<td>Group B, SEVEN® n(16)</td>
<td>1.163±0.187mm</td>
</tr>
<tr>
<td>Group C, C1 n(16)</td>
<td>1.215±0.122mm</td>
</tr>
</tbody>
</table>

Table 2. Implant groups and BIC. The * marks the value with the highest bone loss (p<0.05).

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean BIC ± SD (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A, LANCE n(16)</td>
<td>38.6±22.3%</td>
</tr>
<tr>
<td>Group B, SEVEN® n(16)</td>
<td>44.02±4.6% *</td>
</tr>
<tr>
<td>Group C, C1 n(16)</td>
<td>46.03±4.8%</td>
</tr>
</tbody>
</table>

Within the limitations of this study in dogs, we can conclude that:

- The implant configuration, specifically the connection type, affected how much resorption there was of the vestibular ridge and the position of the vestibular ridge relative to the vestibular alveolar ridge.
- The implant position affected much more resorption of the vestibular bone compared to the lingual bone.
- The CBL was larger in implants with an external connection.

The main factors that may affect bone alterations were the different connection types that influence the integrity of the peri-implant bone. The measurements of the CBL and BIC were affected by the difference in implant configuration, specifically the connection type, and the position of the implant in the vestibulo-lingual direction, relative to the vestibular alveolar ridge and the position of the vestibular ridge. These factors were also affected by the difference in implant position.

Conclusion

Within the limitations of this study in dogs, we can conclude that:

- The implant configuration, specifically the connection type, affected how much resorption there was of the vestibular ridge and the position of the vestibular ridge relative to the vestibular alveolar ridge.
- The implant position affected much more resorption of the vestibular bone compared to the lingual bone.
- The CBL was larger in implants with an external connection.

References

- Johnson, K. A study of the dimensional changes occurring in bone. Implants with an external connection have been shown to preserve bone better than implants with an internal connection. Therefore, implants with an external connection have been shown to preserve bone better than implants with a standard implant configuration.
- Pantani F & Lang NP. Influence of implants with different sizes and configurations installed immediately into extraction sockets: an experimental study in the beagle dog. De MaxillofacImplants. 2011;26:290–303.