Immediate implant placement and peri-implant augmentation with a porcine-derived acellular dermal matrix (mucoderm) and synthetic bone (maxresorb) in the aesthetic area

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Objective: Over the years, several bone substitutes have been utilized for GBR procedures and, recently, a porcine derived acellular dermal matrix (mucoderm®, botiss) has been proposed as autogenous graft substitute in order to avoid palatal harvesting. The aims of this study are to present the one-year follow-up results of early implant placement with simultaneous peri-implant augmentation using this matrix and a synthetic bone substitute material (maxresorb®, botiss) in the aesthetic area.

Materials and Methods
• Placement of one dental implant in the upper anterior area
• No more than 8 weeks from tooth extraction
• A width and a thickness of the attached gingiva of less than 2 mm in the implant site at baseline
• Good oral hygiene (FMPS and FMBS <25%)
• No uncontrolled systemic diseases
• No smokers (> 10 cigarettes/die)
• No previous failed implant placement

Variables
• Keratinized mucosa width
• Gingival Thickness
• Pink Esthetic Score
• Marginal Bone Level
• Probing pocket depth
• Implant survival
• Implant Success
• Bleeding on probing
• Plaque Index

Study variables Descriptive statistics
Sample size (n) 15
Male 6
Female 9
Age (y) ± SD (range) 47.8 ± 4.45 years (range= 30-67 years)
Maxillary central incisor 8
Maxillary lateral incisor 7
Diameter 4.1 mm 9
Diameter 3.3 mm 6
Length 10 mm 7
Length 12 mm 8

<table>
<thead>
<tr>
<th>Examination Time Point</th>
<th>Mean KMW (mm)</th>
<th>Mean GT (mm)</th>
<th>Intragroup comparison (p &lt;0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-Operative</td>
<td>1.47 ± 0.43</td>
<td>1.87 ± 0.89</td>
<td></td>
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<tr>
<td>1 month</td>
<td>4.86 ± 1.22</td>
<td>4.56 ± 1.11</td>
<td>p&gt;0.05</td>
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<tr>
<td>3 months</td>
<td>4.52 ± 0.98</td>
<td>4.23 ± 1.53</td>
<td>p&gt;0.05</td>
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<tr>
<td>6 months</td>
<td>4.13 ± 1.38</td>
<td>4.05 ± 0.42</td>
<td>p&gt;0.05</td>
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<tr>
<td>12 months</td>
<td>4.02 ± 0.45</td>
<td>3.97 ± 0.56</td>
<td>p&gt;0.05</td>
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</tbody>
</table>

Conclusions
Gingival contour and peri-implant attached gingiva can be successfully augmented by using a mucoderm matrix in combination with a synthetic bone graft, with mean gains of 2.5 mm for KMW and 2.1 mm for GT after 12 months. A shrinkage was experienced in the first 6 months and, then, all grafts remained stables.