Excellent handling is only one aspect

GBR expert considers benefits of creos xenoprotect

Nobel Biocare: What was your initial reaction when you first used the creos xenoprotect membrane?

Dr. Hadi Antoun: That the membrane is easy to handle and, once moistened, does not stick to the site, so you can still change its position after placement.

Why is it so important to have a membrane with easy handling?

During surgery, we cannot afford to spend too much time adapting the membrane to the defect of each individual patient. We need a membrane that we can handle and cut easily, that does not stick to instruments and that can be adapted to the shape of the site after the biomaterial has been placed. Handling properties are important, but good handling alone is not enough.

What then have you found to be the other main advantages of creos xenoprotect?

In its elasticity and high biocompatibility. Biocompatibility is fundamental, while the elasticity means it can be nutured or fixed with pins and still tightened without tearing. It also resorbs slowly, allowing time for the ingrowth of bone cells to the site, remodeling and bone regeneration.

In a case you have shared with our readers online (please see the link at the end of this interview), you used a combination of xenograf substitute and autogenous bone. What benefits does this combination offer?

The cells that survive transplantation in the autogenous graft provide ontogenic potential and growth factors that are released gradually. This complements the bone hydroxyapatite, which is a biomaterial that resorbs very slowly. It acts as a scaffold for bone regeneration, providing the augmented bone with stability.

You stated that, in this particular case, some remnants of the creos xenoprotect membrane could still be seen after six months. Were you surprised by this longevity?

I was pleasantly surprised. Most resorbable membranes resorb after a few weeks or three to four months at most. The core principles of GBR dictate that the longer we keep soft tissue and fibroblasts away from the bone area, the greater the opportunity for new bone to form. As such, a long degradation time like this provides a greater chance of success.

You chose to restore the case under discussion with a NobelProcera Titanium Abutment. Why did you opt for a NobelProcera individualized restoration?

An individualized abutment with a scalloped contour in a biocompatible material like titanium is important for the attachment and adhesion of hemidesmosomes in the transmucosal part of the restoration. Bone preservation is very probably related to this barrier. Moreover, from an economical point of view, we do not have to deal with any additional costs related to a metal cast.

Were you pleased with the results of this case?

I would recommend trying the membrane. The results are very encouraging and, provided that the basic principles of GBR are followed, complications seem very rare. For me, the combination of autogenous and xenogeneic biomaterials with the membrane has worked well. The final trimming of the membrane can be done after augmentation by stretching the membrane before fixating it. Tension-free soft-tissue coverage is a key factor for successful bone augmentation.

More to explore!

Further information about creos xenoprotect can be found at www.nobelbiocare.com/xenoprotect.

The case referred to in this article is available at www.bit.ly/creos-antoun.

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Great bone formation

Significantly greater bone formation in the same portion of the defect at day 21 with creos xenoprotect in vivo.1

<table>
<thead>
<tr>
<th>Membrane</th>
<th>Membrane thickness (µm)</th>
<th>Highest force at break (N)</th>
<th>Highest stress at break (N/mm²)</th>
<th>Highest suture retention (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio-Gide®</td>
<td>150</td>
<td>15</td>
<td>0.7</td>
<td>95</td>
</tr>
<tr>
<td>Creos xenoprotect</td>
<td>150</td>
<td>20</td>
<td>1.2</td>
<td>90</td>
</tr>
</tbody>
</table>

Lower dehiscence rate

Significantly lower dehiscence rate with creos xenoprotect compared with chemically cross-linked as well as other non-chemically cross-linked membranes in patients.2

<table>
<thead>
<tr>
<th>Membrane</th>
<th>Membrane thickness (µm)</th>
<th>Membrane degradation</th>
<th>Slower membrane degradation with creos xenoprotect in vivo</th>
<th>for longer protection of the graft material.3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bio-Gide®</td>
<td>150</td>
<td>20%</td>
<td>10%</td>
<td>80%</td>
</tr>
<tr>
<td>Creos xenoprotect</td>
<td>150</td>
<td>5%</td>
<td>2%</td>
<td>95%</td>
</tr>
</tbody>
</table>

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The results are very encouraging and, provided that the basic principles of GBR are followed, complications seem very rare. For me, the combination of autogenous and xenogeneic biomaterials with the membrane has worked well. The final trimming of the membrane can be done after augmentation by stretching the membrane before fixating it. Tension-free soft-tissue coverage is a key factor for successful bone augmentation.