Minced Nerve Tissue in Vein Grafts Used as Conduits in Rat Tibial Nerves

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Nothing to Disclose
A total of 21 female Wistar rats were used in the study. Three groups, including seven rats each, were created:

(I) nerve graft,
(II) vein graft, and
(III) minced nerve graft.
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Materials & Methods

Nerve Graft Group
Vein Graft Group
Minced Nerve Graft Group

1/3 cm nerve used
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Assessment

- Walking track analysis
- Myelinated axon count
- Light microscopy
- Electron microscopy
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Results

Walking Track Analysis

Group 1 = Group 3 < Group 2 (p < 0.05)
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Results

Axon Count Results

<table>
<thead>
<tr>
<th>Weeks</th>
<th>Nerve Graft</th>
<th>Vein Graft</th>
<th>Minced Nerve Graft</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4952</td>
<td>4397</td>
<td>5367</td>
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<tr>
<td>2</td>
<td>4764</td>
<td>4698</td>
<td>4986</td>
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<tr>
<td>3</td>
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<td>4856</td>
<td>3595</td>
<td>3033</td>
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<td>5</td>
<td>4913</td>
<td>1810</td>
<td>5478</td>
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<tr>
<td>6</td>
<td>4885</td>
<td>2013</td>
<td>5142</td>
</tr>
<tr>
<td>7</td>
<td>5154</td>
<td>3264</td>
<td>4874</td>
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<tr>
<td>Average</td>
<td>4858 ± 202</td>
<td>3296 ± 1089</td>
<td>4743 ± 843</td>
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</tbody>
</table>

Group 1=Group 3 < Group 2 (p<0.05)
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Results
• Vein grafts:
  ♦ Nonimmunogenic
  ♦ Rich in laminin
  ♦ Easy to harvest
  ♦ Available in a wide variety of sizes
  ♦ Resilient enough to scar ingrowth
  ♦ Permeable enough to nutrient diffusion
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**Discussion**

- Functional & Morphological Assessment:
  
  Group 1 = Group 3

  1 cm  1/3 cm nerve graft
Discussion

- Clinical applications of the technique
  1: nerve graft from the distal part of the defect
  2: any nerve tissue that cannot be used as a nerve graft
  3: nerve graft which does not exceed 3 cm
  4: one nerve graft instead of two or more

This technique can be used in the repair of nerve defects after further experimental evidence and clinical trials.