Early flap detachment of reverse heterodigital island flaps

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Purpose

The Reverse heterodigital island flap has been widely used for its ability to cover large defects due to fingertip injuries. It is a safe and reliable method of treatment. However, it should have the finger joint immobilized about 2 weeks, which result in joint contracture. To reduce such problems, we evaluated the use of the early detachment technique in the heterodigital island flap.

Methods

Between January 2005 and October 2017, we retrospectively evaluated 23 patients with fingertip injuries who were treated with reverse-flow heterodigital island flap surgery. There were 10 cases that underwent early detachment (Fig. 1) and 13 cases that underwent conventional detachment. Hospital days were defined as postoperative days after the reverse heterodigital island flap surgery.

Results

In the early detachment group, the mean detachment date was 8.5 postoperative days in contrast with the 12.38 days in the conventional group. In the conventional group, joint stiffness was observed in 1 patient, and 1 patient had partial flap necrosis, which was managed by debridement and daily dressing changes. In the early detachment group, 1 patient developed a trigger finger, which was resolved by rehabilitative exercise therapy. There was no observable difference in dehiscence rates, vascular problems, and/or contracture between the two groups. The number hospitalization days were 15.8 days in the early detachment group and 19.77 days in the conventional method group. This difference between two groups was statistically significant. (Table 1.)

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<tr>
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<th>Conventional Detachment</th>
<th>Early Detachment</th>
<th>p value</th>
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<tbody>
<tr>
<td>Detachment day</td>
<td>12.38 ± 0.33</td>
<td>8.5 ± 0.37</td>
<td>&lt; 0.001</td>
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<tr>
<td>Hospital day†</td>
<td>19.77 ± 0.83</td>
<td>15.8 ± 1.29</td>
<td>0.02</td>
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Table 1. Postoperative result between conventional and early detachment group
†Hospitalization day: postoperative days after heterodigital island flap surgery.

Conclusion

This study provides evidence that the earlier detachment of the reverse heterodigital island flap is associated with better outcomes in regards to the duration of hospitalization. In addition, early detachment also means less time spent with the joint immobilized. This has a direct impact on the patient’s improved quality of life and return to their daily activity. We expect that this discovery will make a significant contribution in the field of fingertip reconstruction.