Use of infrared vein viewer to prevent complications from perivascular injection of dermal fillers: Clinical experience

Georgia Lee S.K.
TLC Lifestyle Practice, Singapore

Vascular side effects of Filler

- Bruising is a possible complication of all filler injections and may be exacerbated by inadvertent trauma to superficial veins.
- Tissue necrosis is due to vascular occlusion through direct arterial embolization or venous occlusion through compression
- This risk can be reduced
  I. good knowledge of anatomy
  II. localisation of the arteries through palpation
  III. familiarity with patient
  IV. by blunt cannula techniques,
  V. limiting injection sites with pre treatment planning through visual and assisted vein finder.

The use of the vein finder device, which utilizes near infrared technology to map out superficial veins in order to improve the safety of aesthetic dermal filler injections has previously been described [Lee SK, 2014][Highton L, Ewolde C, 2011].

Patients who seek minimally invasive procedures like fillers expect minimal downtime. There is a need to upgrade our techniques to reduce risks; some associated with temporary social downtime like bruising and some more serious causing vascular compromise through inadvertent vascular compression or intravascular injection of dermal filler.

Practice Review of Patient Profile & Outcome Using Infra Red Vein Finder Injection Technique

- 216 patients (Age: mean, range: 41.8, 19-72 yr, Sex: F: M=200: 16) were treated over 8.5 months period (24 Feb 2014 – 5 Nov 2014). A total of 453 sites were injected on the face, using total volume 490 ml hyaluronic acid based fillers (Restylane® and Juvederm®).

<table>
<thead>
<tr>
<th>Sites</th>
<th>Forehead</th>
<th>Temple</th>
<th>Under eyes</th>
<th>Cheeks</th>
<th>Nose</th>
<th>Nasolabial</th>
<th>Lips</th>
<th>Chin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number</td>
<td>6</td>
<td>10</td>
<td>84</td>
<td>149</td>
<td>28</td>
<td>122</td>
<td>95</td>
<td>19</td>
</tr>
<tr>
<td>Average volume per site (ml)</td>
<td>0.83</td>
<td>1.3</td>
<td>1.05</td>
<td>1.11</td>
<td>1.07</td>
<td>1.05</td>
<td>1.14</td>
<td>1.05</td>
</tr>
</tbody>
</table>

Adverse Reactions

- The incidence of immediate needle entry point bruising was less than 10 over 453 treatment sites.
- There was one instance of filler migration from a cheek injection, probably from patient’s over massaging which settled.
- There were no cases of infection and no instances of local swelling beyond three days.

Discussion

This technique has been found to be especially useful in darker skin types where veins are difficult to identify.

Social downtime due to bruising is significantly reduced and this is relevant for the growing male patients [American Society for Aesthetic Plastic Surgery, 2014] seeking treatments where makeup is not usually used for coverage for any post treatment bruising.

It is feasible to consider routine use of these devices to improve the accuracy and safety of dermal filler injections.

References

- Mysore Venkataram, Applied surgical anatomy in relation to facial rejuvenation Ch. 2