Treatment of scalp lacerations with a hair apposition technique reduced scarring, pain, and procedure duration compared with suturing


QUESTION: Is a new technique of treating scalp lacerations (the hair apposition technique [HAT]) as effective as standard suturing for wound healing, complications, and pain?

Design
Randomised (allocation concealed†), unblinded,‡ controlled trial with follow up at 1 week.

Setting
The emergency departments (EDs) of 2 tertiary care hospitals in Singapore.

Patients
189 patients of any age (mean age 32 y, 74% men) with linear non-stellate lacerations of the scalp that were <10 cm in length and with scalp hair >3 cm in length. Exclusion criteria were severely contaminated wounds, actively bleeding wounds that did not stop bleeding after ≥5 minutes of applied pressure, and unstable vital signs or neurological status requiring priority resuscitation. 188 patients (99%) were included in the analysis.

Intervention
96 patients were allocated to the HAT. Wounds were cleansed according to standard procedure, and no local anaesthetics were given. The wound was closed by bringing together the hair on both sides of the wound and making a single twist; no actual knot was made. The twist was then secured with tissue glue. Patients were instructed to wash their hair after the third day and told that the glue would gradually fall off. 93 patients were allocated to standard suturing, whereby the wound was cleansed, an injection of local anaesthetic was given, and hair was shaved or trimmed according to local practice. The wound was then sutured, and removal of sutures was done 1 week later. Hair washing was discouraged for 1 week. Oral sedation was sometimes required for very young children.

Main outcome measures
Main outcomes were complications (infection, scarring, bleeding, and wound breakdown) and satisfactory wound healing. Secondary outcomes included pain (10 point visual analogue scale with 0 being no pain) and duration of the procedure.

Main results
Analysis was by intention to treat. At 1 week, fewer patients in the HAT group than in the standard suturing group had any complications or had scarring (table); the groups did not differ for infection (1.1% v 1.1%, p=1.0), bleeding (0% v 1.1%, p=0.49), wound breakdown (0% v 4.3%, p=0.057), or satisfactory wound healing (100% v 96%, p=0.057). Patients who received the HAT reported less pain than those who had standard suturing (median score 2 v 4 out of 10, p<0.001). The HAT was performed more quickly than standard suturing (median 5 v 15 min, p<0.001).

Conclusion
Treatment of scalp lacerations using a hair apposition technique reduced scarring, overall complications, pain, and procedure duration compared with standard suturing, but did not differ for satisfactory wound healing, infection, bleeding, or wound breakdown.

†Abbreviations defined in glossary; RRR, NNT, and CI calculated from data in article.

Outcome at 1 week

<table>
<thead>
<tr>
<th>Outcomes at 1 week</th>
<th>HAT</th>
<th>SS</th>
<th>RRR (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Any complication</td>
<td>7.4%</td>
<td>21.5%</td>
<td>66% (25 to 85)</td>
<td>8 (5 to 24)</td>
</tr>
<tr>
<td>Scarring</td>
<td>6.3%</td>
<td>20.4%</td>
<td>69% (29 to 87)</td>
<td>8 (5 to 22)</td>
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</tbody>
</table>

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