A case series on the use of topical Imiquimod 5% for severe and recurrent keloid scarring

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Introduction
Keloids are benign fibroproliferative tumors caused by excessive collagen deposition. They can result in itch, pain, cosmetic deformity and distress. Imiquimod, a topical Toll-like receptor agonist, may be used on surgically excised keloid scars to reduce recurrence. Imiquimod is thought to act by enhancing cytokine production, altering gene expression, reducing collagen and glycosaminoglycan production.

Aim of the Study
To determine if post-operative adjuvant therapy with topical imiquimod 5% cream reduces keloid recurrence.

Method
We analyzed the outcomes of patients with severe and recurrent keloid scars treated with surgery and adjuvant imiquimod therapy via a retrospective case note review.

Results
Nineteen keloids (median size 55mm; range 10-90) were excised from 16 patients with type 6 skin. The keloids were located on various anatomical sites with 58% present on the ear. The median age was 25 years (range 15-53).

All patients received intraoperative triamcinolone injection into the wound edge followed by imiquimod therapy post-operatively three times a week for a median of 2 months (range 1-6). Patients were followed up for a median of 18 months (range 9-38). Those who received 5-6 months of imiquimod had more favourable outcomes compared to those who only received 1-2 months of therapy (Graph 1). Side effects included pain (37%), hypopigmentation (26%), superficial erosion (21%) and bleeding (5%), which resulted in treatment cessation in 37% of patients. On a satisfaction scale 65% were either ‘satisfied’ or ‘very satisfied’ (Graph 2).

Conclusion
Currently there is no single effective treatment for keloid scarring. However, published data¹ has demonstrated imiquimod to be an effective adjuvant therapy for reducing keloid recurrence compared to traditional treatment modalities (Table 1).

Our series has the longest duration of imiquimod therapy and follow-up to date. Adjuvant topical imiquimod is effective at reducing keloid scarring, with longer duration of therapy further reducing the size of recurrence and resulting in patient satisfaction.

Table 1

<table>
<thead>
<tr>
<th>Treatment modality</th>
<th>Recurrence rate</th>
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<tbody>
<tr>
<td>Surgery alone</td>
<td>45 – 100%</td>
</tr>
<tr>
<td>Surgery + Triamcinolone</td>
<td>30 – 70%</td>
</tr>
<tr>
<td>Surgery + Imiquimod</td>
<td>25 – 40%</td>
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</tbody>
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Table 1 illustrates published data¹ on recurrence rates for adjuvant imiquimod therapy and traditional treatment modalities.


Graph 1 - Size of recurrence compared to original keloid size at discharge

Graph 2 - Patient satisfaction scores

Received 6 months imiquimod therapy with no recurrence at 38 months

Received 6 months imiquimod therapy with mild recurrence at 18 months