A CHALLENGING SCALP REPLANTATION FROM THE REMOTE AUSTRALIAN OUTBACK

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Introduction

• Scalp avulsion is a rare disfiguring injury caused by shearing forces acting obliquely at the interface between periosteum and galea.

• Before the advent of microsurgery these injuries were managed by relaying the avulsed segment as a composite graft, or skin grafting, with failure resulting in areas of scarred non-hair bearing scalp.
Introduction

• While it is often reported that chances of successful replantation decrease after 5-6 hours of ischemia time, there have now been reports of good outcomes with longer periods before revascularization.

• This is of particular relevance in Australia, where geographical isolation results in extended periods of ischemia before treatment can be delivered.
Case Study

- We present a 18 year old girl who sustained a crush avulsion of her left temporoparietal scalp after her hair was caught in a bore pump on cattle station
- 130km from the nearest town and 430km from the nearest tertiary hospital
Case study

- She was retrieved by plane to the Royal Darwin Hospital with a warm ischemia time of 5 hours, and total ischemia time of 13 hours.
Case study

• Despite the poor quality of the avulsed segment, it was decided to attempt replantation
• The patient and avulsed scalp were prepared concurrently
• Initially it was only possible to identify a single artery and this was anastomosed to the superficial temporal artery
• Once the flap was perfused a single vein was identified for anastomosis via a vein graft to vein in the occipital region, as the degloving mechanism precluded the use of local scalp veins
At conclusion of replantation
2 weeks postoperatively

Area of distal necrosis at tip of smaller flap which was allowed to heal by secondary intention
1 month postoperatively
3 months postoperatively

Good hair regrowth

Hypertrophic postauricular scar receiving scar management
Conclusion

- Microvascular replantation of the scalp provides the best potential for acceptable cosmetic outcome and should always be considered.
- Despite the unfavorable conditions of crush and avulsion at two different planes, long ischemia time and contamination, a good result was achieved.