



# Technical considerations in replantation of total scalp avulsions

S. Raja Sabapathy\*, H. Venkatramani, R. Ravindra Bharathi, James D'Silva

*Department of Plastic Surgery, Hand Surgery and Reconstructive Microsurgery, Ganga Hospital, 2, Swarnambika Lay Out, Ramnagar, Coimbatore 641 009, India*

Received 6 December 2004; accepted 6 April 2005

## KEYWORDS

Scalp replantation;  
Scalp avulsion

**Summary** Total scalp avulsions are devastating injuries and replantation is the best form of reconstruction. We present our experience of replantation of six totally avulsed scalps done between 1996 and 2004. All were technically successful, but one was lost in the post-operative period due to accidental shearing of the scalp during nursing care. A single team performed the surgery in all cases and the average operating time was 6 h. No vein grafts were used. Hair growth was satisfactory in all cases. None underwent formal nerve repair but there was adequate sensory recovery in all of them by 6-9 months. A small area of skin necrosis in the occipital area (three cases), telecanthus and epiphora (two cases) were the minor complications.

The available literature highlights the need for multiple teams to reduce the long operating time, the use of multiple vein grafts and the complexities involved. Since, they are rare injuries, gaining wide experience is difficult. In this article we offer recommendations in pre-op preparation, vessel identification, technique of anchoring the avulsed scalp prior to vessel anastomosis and post-op care to make this rare procedure quicker, easier and successful.

© 2005 The British Association of Plastic Surgeons. Published by Elsevier Ltd. All rights reserved.

Replantation is the best form of reconstruction following total avulsion of the scalp. If the scalp is not replanted, the patients undergo skin grafting of the raw area. Multiple drill holes need to be made in areas without periosteum followed by skin grafting when granulations appear. It may take many months for complete healing to occur and still most patients are left

with areas of unstable skin cover. Hence, every attempt must be made to replant total scalp avulsions. Numerous single case reports<sup>1-4</sup> and few series<sup>5,6</sup> are available in the literature. These reports express difficulty in preparing the part and identifying the vessels, the need for multiple vein grafts and a long duration of surgery. The largest series of 20 cases reported by Kaixiang et al.<sup>5</sup> highlights the need of multiple teams to reduce the operating time. This might make scalp replantation appear to be a difficult if not an intimidating procedure for the beginner.

\* Corresponding author. Tel.: +91 422 223 5050/51/52;  
fax: +91 422 223 5608/2652.

E-mail address: [rajahand@vsnl.com](mailto:rajahand@vsnl.com) (S.R. Sabapathy).