INTRODUCTION

Painful neuromas form on cutaneous nerves as a result of trauma, pressure, stretch or entrapment. Since the earliest descriptions of neuromas, proposed treatments have been met with poor results and controversy. Furthermore, the issue of compensation and litigation complicate outcomes. The myriad of treatments described include: simple division of an affected nerve, implantation into muscle or bone, silicon sleeves and caps, repeated injection of steroids, end-to-side neurorrhaphy, medication and vein caps to name a few. The physiology of neuroma formation and subsequent axonal hyperexcitability is being studied and increasingly understood. Sodium channels accumulate abnormally within the axons of neuromas and this alteration may underlie the generation of hyperexcitability. The myriad of treatments described include: simple division of an affected nerve, implantation into muscle or bone, silicon sleeves and caps, repeated injection of steroids, end-to-side neurorrhaphy, medication and vein caps to name a few. The physiology of neuroma formation and subsequent axonal hyperexcitability is being studied and increasingly understood. Sodium channels accumulate abnormally within the axons of neuromas and this alteration may underlie the generation of hyperexcitability. The authors describe a simple technique to achieve this surgical goal. As veins are readily accessible due to their proximity in the neurovascular bundle, they serve as a ready source for grafting. The advantages include minimisation of trauma to bone and muscle as compared with previous treatment techniques and the relative ease of the method.

TECHNICAL NOTE

The authors have trialed several techniques for nerve implantation into a vein including a single and dual incision approach. With the single incision technique, the vein is clamped and divided with an open ending. The nerve is then inserted into the open end and sutured closed with an appropriate sized non-absorbable suture. The clamp is then removed. This technique is similar to that described by Herbert and Filan. The problem that the authors encountered was that the nerve may retract and pull out of the vein, leading to failure and potential re-neuroma formation. Thus a dual anchoring technique has been developed to help reduce tension on the nerve and subsequent failure.

CONCLUSION

The choice of treatment for painful peripheral nerve neuroma depends on the surgeon’s experience and what they have attempted previously with success. Although the literature does not give us a definitive answer on the technique of choice, vein implantation has received many encouraging anecdotal reports and successful short series reports. The simple technique described here helps answer the problem of failure that previous authors have encountered with vein implantation.

REFERENCES


