A Simple and Effective Scalp Tourniquet for Controlling Scalp Hemorrhage

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The scalp is supplied abundantly with blood with a peculiar arrangement of vessels running in the dense connective tissue layer. The amount of blood scalp receives is larger than any other portion of the skin of equal area [1]. The main source of blood is from supraorbital, supratroclear arteries and branches of external carotid artery, viz., superficial temporal artery, posterior auricular artery and occipital artery. Such high volume of hemorrhage during scalp surgeries is highly disturbing to the operating surgeons and also puts the patient at risk. A bloodless operative field facilitates the surgical procedure hence shortening operating time subsequently reducing the anesthetic risk to the patient, furthermore the necessity for blood transfusion.

Various devices have been tried in the past which includes use of rubber bands [2], soft rubber tubing and various inflatable cuffs, including bicycle tire inner tubes [3] not only to control hemorrhage but also to prevent hair loss by diminishing the contact of chemotherapy drugs in the scalp hair [4]. All these measures require preoperative preparations and are time-consuming.

We suggest use of sterile surgical glove as a scalp tourniquet which is a simple, less time-consuming technique and provides adequate control of hemorrhage intra-operatively. A sterile glove is cut from its wrist portion (Fig. 1) and is stretched and tied over scalp just above eyebrows, external auricle and just below the external

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Fig. 1 Photograph showing surgical glove cut from wrist portion

Fig. 2 Photograph showing application of scalp tourniquet

Fig. 3 Photograph showing adequate hemorrhage control after using tourniquet

occipital protuberance. The glove is placed over cotton-padded gauge to prevent any injury to underlying tissue. Locking artery forceps is used to hold the stretched glove to maintain adequate pressure (Fig. 2).

We have used this technique in 35 patients, and it successfully provided with hemorrhage control (Fig. 3). The mean time for application of this tourniquet in all cases was 5.68 min, and it can be safely kept for a period of 60–90 min over the scalp during surgery. The advantages of this technique are being inexpensive, simple, less time-consuming, and no additional material or preparation is required. The two main disadvantages of this technique are (a) the pressure applied by the glove cannot be monitored and (b) it cannot be used for surgical procedures performed at the peripheral aspects of scalp.

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no competing interests.

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