Outpatient carpal tunnel decompression without tourniquet: a simple local anaesthetic technique

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Carpal tunnel release was performed under local anaesthesia in 108 wrists of 98 patients. The local anaesthetic (bupivacaine 0.5% and adrenaline) was injected into the subcutaneous tissue down to the flexor retinaculum in the line of the incision. The median nerve was not anaesthetised. No tourniquet was required and analgesia was complete in all but four patients, who complained of some minor discomfort on cutting the flexor retinaculum.

Protracted postoperative analgesia was obtained.

Local anaesthesia for median nerve release is simple, suitable for outpatient surgery, and can be performed by the surgeon himself without an assistant (1–3).

This study was designed to examine the efficacy of this particular technique, which can be performed without a tourniquet and with minimal patient discomfort. Previous studies have involved the combination of local anaesthetic and tourniquet with associated tourniquet discomfort.

Patients

Carpal tunnel release was performed under local anaesthesia in 108 wrists of 98 patients over a period of 2 years. Ages ranged from 19 to 83 years. The ten patients with bilateral involvement had decompression performed on the most symptomatic wrist first and then on the other wrist approximately 6 weeks later.

The diagnosis of carpal tunnel syndrome was based on clinical history and physical signs, provocative tests (Tinel’s sign and Phalen’s test) and on nerve conduction studies which were carried out in 31 patients. All patients underwent simple carpal tunnel decompression and no patients were excluded from the study.

Method

Anaesthesia is induced on the ward before the start of the operating list. A 25G needle is used and bupivacaine 0.5% with adrenaline 1 in 200 000 is infiltrated along the line of the proposed incision over a width sufficient to allow placement of sutures to close the wound. Local anaesthetic is infiltrated down to the level of the flexor retinaculum from the proximal skin crease distally to the level of the thumb web. When the patient reaches the operating theatre the anaesthetised area is obvious by its pallor. The incision is made. If the patient is left for a period of 20 min after administration of the anaesthetic minimal bleeding occurs. Residual ooze is controlled by using two small screw-operated Alm (Thackery) retractors. Exposure is made with minimal bleeding and tissue staining (Fig. 1).

Routine carpal tunnel decompression is performed using a McDonald dissector to protect the median nerve. Although no local anaesthetic is placed either in or deep to the flexor retinaculum, only four patients complained of slight discomfort on incising the flexor retinaculum.

The wound is closed using interrupted sutures to the skin. The wrist is bandaged and the limb is elevated for 1 h. The patient is then discharged home with a sling and not seen again until the sutures are removed.

Results

With the exception of the aforementioned four patients, analgesia was complete. No further anaesthetic injections
were required during the course of the operation. At operation there was no evidence of median nerve contusion due to anaesthetic injection.

At a second postoperative visit, only two patients were dissatisfied with the anaesthetic technique, stating that they would have preferred to have been asleep. The remainder would have been happy to have the other carpal tunnel decompressed in the same manner, if necessary. All patients reported total postoperative analgesia for 6 h and 25 patients (23%) reported the duration to be up to 12 h.

**Discussion**

This technique has clear advantages over other anaesthetic techniques, as a dry operative field is achieved without the use of a tourniquet, and postoperative analgesia is assured for at least 6 h. Previous work shows that the use of a tourniquet limits the time available for surgery and can cause the patient excessive discomfort (3,4).

Local infiltration with adrenaline containing anaesthetic is also superior to intravenous regional anaesthesia, as there is no ooze of local anaesthetic into the operative field, prolonged postoperative analgesia, and no tourniquet pain. It is a more simple technique to perform than brachial plexus block.

All procedures were simple carpal tunnel decompressions, no flexor synovectomy was performed. The median nerve is not approached or directly anaesthetised, thus avoiding damage to the nerve (3).

**Reference**


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