A Technique for Selective Blockade of the Medial Antebrachial Cutaneous Nerve

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Indications for selective block of the medial antebrachial cutaneous nerve are uncommon. We recently were presented with a request to do this nerve block and could find no description of a suitable technique in the available textbooks.

ANATOMY

The medial antebrachial nerve arises from the medial cord of the brachial plexus within the axilla. At the junction of the middle and lower thirds of the arm the nerve pierces the deep fascia in company with the basilic vein and divides into an anterior and an ulnar branch. The anterior or volar branch is the larger; it passes anterior or dorsad to the median basilic vein, and divides into several twigs running down the forearm, supplying the integument that covers its anterior and medial aspects as far as the wrist. The ulnar or posterior branch passes distally and dorsally anterior to the medial epicondyle of the humerus; it divides into branches which supply the skin on the posteromedial aspect of the forearm. There are, however, some variations of anatomical distribution which must be considered. The nerve may exit from the fascia in any position relative to the vein although it is most frequently described as being lateral to it. Also, the nerve may divide before becoming

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superficial, in which case the volar branch is lateral, and the ulnar branch medial, to the vein, as depicted in figure 1.

**TECHNIQUE**

The ideal place to block this nerve selectively, therefore, is at a point immediately below the junction of the middle and lower third of the arm, but the only landmark to its location is the basilic vein, a structure which is neither visible or palpable.

To overcome this problem a venipuncture can be made in the antecubital fossa with a large 14-gauge Intracath† and the catheter threaded into the basilic vein where it is readily palpable. Under the palpating finger at the junction of the middle and lower third of the arm small quantities of the anesthetic solution can be deposited on both sides of the basilic vein to circumvent an anomalous distribution and insure a successful block of both branches.

**CASE HISTORY**

The patient was a 36-year-old white female, 65 inches tall, who weighed 102 pounds. In January 1965 she dropped a medium-sized can of soup on her right forearm from a height of three feet, experiencing immediate pain in the area of trauma, and developed a 2 x 2 cm purpuric area with a small hard center. This resolved within two weeks but the patient then realized that the area involved had become increasingly sensitive to touch. In addition, she described an exquisite pain which bothered her primarily at night and interrupted her sleep. She was seen by several physicians and was treated by the Physical Therapy Department with a plaster cast without relief of symptoms.

In May, 1967, the patient underwent exploration of the right forearm. It was noted that the fascia was contracted about the previously injured area, but all other tissues appeared normal. A fasciotomy was performed but had no discernible effect. In April, 1968, results of a complete physical examination were essentially within normal limits except for an area of hyperesthesia which delineated the distribution of the medial antebrachial cutaneous nerve. The patient was referred to the Anesthesiology Service by the Neurology Service with a request to block this nerve; if relief was obtained they were prepared to proceed with a neurectomy.

The catheter was inserted into the basilic vein as described and 2 ml of 2 per cent lidocaine with epinephrine 1:200,000 was deposited on each side of the vein, producing almost immediate anesthesia of the involved area and resolution of the hyperesthesia.

Rather than subject the patient to a surgical neurectomy we proposed that an ammonium salt block be tried. This suggestion was agreeable to both the patient and the neurologists. On the following day the catheter was reinserted and the nerve reblocked with 2 per cent mepivacaine, followed in 30 minutes by the instillation of 2 ml of 7 per cent ammonium chloride on each side of the basilic vein. The patient experienced the usual burning sensations at the site of injection and in the area innervated by the nerve. This dysesthesia reached a peak the following morning and gradually subsided during the next 24 hours. The patient was discharged from the hospital a week later, still free or her presenting complaints.

**REFERENCE**