Painless Wound Injection Through Use of a Two-finger Confusion Technique

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Injection of local anesthetic into an open wound, in preparation for suturing, is in some ways like adding insult to injury. The procedure is painful and generally dreaded by patients. In recent years, physicians have turned to topical preinjection solutions in hopes of eliminating such discomfort.[1] Although these solutions are often effective, especially in shallow wounds, their efficacy is limited in deeper wounds that require extensive debridement and layered closure. There is also the suggestion, albeit from animal studies, that tetracaine-adrenaline-cocaine (TAC) solution may predispose to wound infection.[2] This author has achieved reasonable success in this regard by using topical proparacaine, 0.5% solution. Here, the absence of a vasoconstricting effect would argue against the likelihood of promoting infection. Nevertheless, results with both proparacaine and TAC have been imperfect.

Work with hypnosis led to the development of the present technique. No additional drugs are required, nor does the procedure require additional time. Instead, the patient's attention is focused away from the wound and distributed elsewhere. A discrimination task is assigned, and confusion is engendered by giving instructions ambiguously. The patient's consciousness is thus sufficiently preempted to permit injection without the perception of pain.

METHOD

A sterile field is prepared around the wound, and the patient is instructed that it would be best to direct his or her vision elsewhere. The physician, who usually engages in small talk while setting up, then says: "Now here's a **distinction** you can **learn**," emphasizing the boldfaced words. One finger of the physician's left hand is then placed to one side of the wound, a second finger to the other side. (Where the wound is long, a finger is placed on either side of the wound and gradually moved along its length as the injection proceeds.) With the physician using the right hand, the wound is then injected. All the while, the physician is delivering the following instructions and questions so as to maintain the state of distraction (notice that the play is on two words: "one," referring to finger #1 and to one finger—as opposed to two fingers—and "two," referring to finger #2 and to both fingers):

Now, I'm going to place finger #1 here [*on one side*] and finger #2 here [*on the other side*]. And you can **feel finger #1** [*wiggle finger*] and finger #2 [*wiggle finger*], can't you? Now when I say **feel**, I mean the light **touch**, not the wiggle, so that whether I am moving finger #1 [*wiggle #1*] or finger #2 [*wiggle #2*] or two [*wiggle both*] or just moving one [*wiggle #2*], you can still sense the touch of #1 [*wiggle #1*] or two [*wiggle both*]. Now at some time either one [*wiggle #2*] or both [*wiggle both*] will **go numb**, and what I want you to **pay attention** to is when one [*wiggle #1*] or two [*wiggle #2*] begins to **feel less**. And it's kind of like the old one [*wiggle #1*]–two [*wiggle both*].

At this point, the injection usually begins. The physician tries to keep the patient in a mild state of confusion while simultaneously directing the patient's attention to the side of the wound not being injected. It is best, therefore, to alternate the side one is injecting, being careful to do so unpredictably. For example, while injecting side #1, the physician may say:

Now I know you can **feel** the movement of **finger #2**, and I also know that if I stop moving one [*stop #2*] so that both one [*wiggle–stop #1*] and two [*wiggle–stop #2*] are still, you can still feel the touch of two [*wiggle #2*]; is that correct? Now what I don't know, and what I need you to tell me, is which finger, #1 or #2, is beginning to become more numb?

A similar tack may be taken when injecting side #2, with emphasis on the sensation under the contralateral finger.

At this juncture, the patient will generally comment. Whatever is said, the physician should respond sincerely and honestly. Common remarks by the patient are:

"I'm sorry, which is number one and which is number two?" The physician should respond by reiterating the initial instructions, more or less.

"Neither is becoming numb, I think." The physician should respond: "Neither is becoming numb, and yet you can **feel** finger #2 [*wiggle #2*] and two [*wiggle both*] and finger #1 [*wiggle #1*] . . ." and so on.

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"I'm feeling something else. . . ." The physician might respond: "You're feeling something else, yes, and yet what I want you to do is **pay attention** too to exactly when one of these fingers, #1 [*wiggle #1*] or #2 [*wiggle #2*] or two [*wiggle both*], is beginning to **go numb**. Now which finger [*wiggling one after the other alternately*] is beginning to **feel less**?"

Any two-point discrimination of this sort will eventually accommodate to the perception of a single point. Moreover, instillation of local anesthetic in proximity to the two fingers will often effect some measure of numbness under either or both. So the target phenomenon will actually occur. Therefore, the physician can, and should, be earnest in his or her directions; the patient, sensing this, will be attentive and gratified upon discovering the effect.

To ensure success, the physician should attend scrupulously to three additional considerations. 1) The word *needle* is never volunteered: unless the patient asks specifically, the word is not used. Instead, one might ask for "a 30 gauge," a truncated phrase which always communicates the need sufficiently. 2) The needle is never shown. Lidocaine is drawn up into the syringe with the physician's back to the patient, thus concealing the dreaded point. These simple measures eliminate the verbal and visual cues that would otherwise recall previous unpleasant experiences and thus incite tense anticipation of the same. 3) The physician must be careful to avoid such negative suggestions as "now this is going to hurt" or "just a little prick now." As Erickson and Rosse[3] have pointed out, "Every suggestion . . . requires that [the patient] act it out for himself to some degree." The suggestion, however well-intentioned, that pain is about to occur is self-fulfilling.

DISCUSSION

Thorough evaluation of the two-finger confusion technique would, of course, require a prospective, randomized, controlled experiment. Proparacaine 0.5% (or TAC) alone, for example, could be compared as preinjection anesthesia to proparacaine 0.5% (or TAC) plus the confusion technique. Initial results, however, warrant this preliminary report, for I have found that when administered in earnest, the two-finger method rarely allows for even the barest perception of the injection. In well over 50 cases where the technique has been used, no patient has ever described the injection of local anesthetic into a wound as painful; the vast majority have felt nothing and have been surprised to learn that an injection has been given. Thus, whereas an exact comparative study of available techniques would be nice, there is no question that use of the two-finger confusion technique can result in painless wound injection.

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