Fig. 1. Cisatracurium OR solution and ICU solution.

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Bowing of the Needle Technique for Nerve Blocks

To the Editor:—We have discovered a simple technique for guiding 20- to 22-gauge needles in soft tissue under fluoroscopy. This technique has proven helpful for placing the tip of the needle at the anterolateral aspect of vertebral bodies when performing lumbar sympathetic and celiac plexus blocks. Such blocks are challenging, even under fluoroscopic guidance because the target lies 5–7 inches beneath the skin, making the initial trajectory of the needle critical.

Bowing of the needle allows the tip of the needle to be "walked" into the proper location quickly with minimal trauma to tissues. For example, if the initial trajectory of the needle during a lumbar sympathetic block is too medial, causing the needle to make contact with the lamina of the vertebral body, the tip of the needle can be easily relocated more laterally. This can be accomplished by withdrawing the needle about 1 inch. Then, as shown in figure 1, a horizontal force (parallel to the surface of the skin) is applied to the shaft of the needle in the medial direction at the surface of the skin. While maintaining this horizontal force on the shaft of the needle, the needle is advanced 1 inch back to its original depth in the tissue. Fluoroscopy confirms that the needle has a slight bow and that the tip of the needle has been moved laterally. This process is repeated until the needle is advanced to the anterolateral aspect of the vertebral body (fig. 2).

Similarly, if the initial trajectory of the needle places the tip of the needle too laterally, cephalically, or caudally to the target region, a horizontal force applied to the shaft of the needle at the surface of the skin, in a direction opposite to the desired direction of the tip of the needle, will result in the displacement of the tip of the needle

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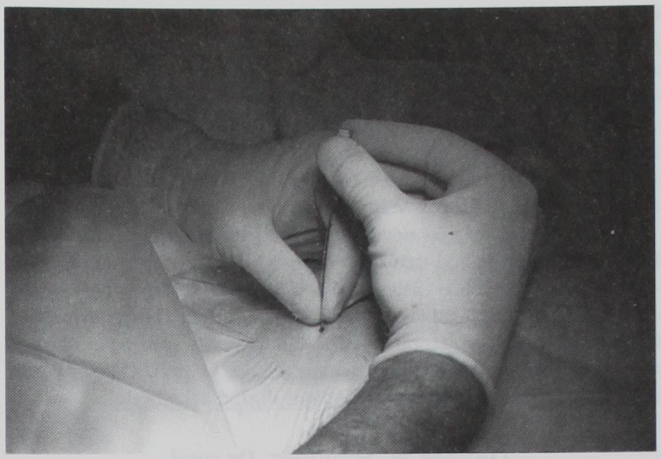

Fig. 1. "Bowing" of the needle is accomplished by advancing the needle while applying a horizontal force to the shaft of the needle at the surface of the skin. The horizontal force is applied in a direction opposite to the desired direction of the tip of the needle.

Fig. 2. A lumbar sympathetic block is performed at L2 by "walking" the needle laterally using the bowing technique. A slight bow in the needle can be seen in the radiograph on the far right.

in the desired direction. The lateral displacement of the tip of the needle can be up to 2 cm with each forward advance of the needle.

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Unreasonably Low Bispectral Index Values in a Volunteer with Genetically Determined Low-voltage Electroencephalographic Signal

To the Editor:—The bispectral index (BIS) developed by Aspect Medical Systems is increasingly used as a clinical tool for monitoring the hypnotic state during general anesthesia.[1–3] The BIS ranges from 100 (awake) to 0 (deep hypnosis).[4] During baseline recording in an experimental pain study, we obtained BIS values using an A-1000 EEG monitor (BIS version 3.11, Aspect Medical Systems, Natick, MA) in fully conscious volunteers before administration of nitrous oxide or xenon. The EEG signal was recorded from leads F3 − Cz, F4 − Cz, P3 − Cz, and P4 − Cz (International 10/20 System). One volunteer had a BIS of 40 as his awake baseline. Electrode impedance was less than 500 Ω, and the signal quality index (SQI) was in the "good" range. On administration of nitrous oxide, the BIS further decreased, although the volunteer was still responding promptly. Experimental pain tests resulted in an increase of the BIS value. The raw EEG signal differed from other volunteers in this study only in having a slightly smaller amplitude. Similar baseline BIS values were observed in the same volunteer

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