A Needle Designed for Myelography

Technical Note

WILLIAM CUATICO, M.D., WILLIAM GANNON, M.D., AND EMMANUEL SAMOUHOS, M.D.*

State University of New York, Downstate Medical Center, Brooklyn, New York

Since the introduction of positive-contrast myelography, the recovery of radiopaque substance has always been a problem. Complete recovery is desirable, not only because of irritation caused by the substance but also because subsequent diagnostic studies may become obscured and even nullified. The standard technique for recovery has been through a regular, short-bevelled spinal needle. The percentage of recovery is increased by placement of the needle tip in the exact center of the spinal canal under fluoroscopic control. The difficulty most commonly encountered is obstruction of the lumen of the needle by either a nerve root or arachnoid membrane. The former gives rise to intense pain and often forces the myelographer to cease further attempts at removal or to insert a second needle at another level. The needle we have designed obviates many of these difficulties.†

Description

The entire needle assembly consists of three parts (Fig. 1):

1. A regular short-bevelled spinal (lumbar puncture) needle, No. 17 or 18 gauge.
2. A solid, sharp-pointed stylet that fits snugly into the needle shaft.
3. A hollow, blunt-end aspiration cannula that fits the inner bore of the needle. Its tip extends past that of the needle for a distance of 5 mm and is perforated with a total of nine holes; the diameter of each hole is 0.025 mm.

In addition, a thin, solid stylet comes with the set to cleanse the aspiration cannula.

Received for publication June 23, 1967.

* Present address: Veteran’s Administration Hospital, Martinez, California.
† Manufactured by Becton, Dickinson & Company, Rutherford, New Jersey.

Fig. 1. The myelography needle. Left: Photograph of the three components of the assembly with the aspiration cannula in the middle. Right: A. Diagram of the aspiration cannula inserted through the needle. B. The stylet inserted.

Method

A spinal puncture is done in the usual manner using the spinal puncture needle with the solid sharp-pointed stylet. (This is like any spinal needle.)

At the completion of the myelogram, removal of the radiopaque substance by gentle aspiration is first tried. If difficulty is encountered, either because of a nerve root or arachnoid adherent at the bevel, then the aspiration cannula is inserted either to its full extent or to three-fifths of its full length, which is 3 mm beyond the needle tip. By this maneuver, whatever is stuck at the bevel is pushed aside. Gentle aspiration, preferably via a plas-
tic venotube, as advocated by Taveras, moves the radiopaque substance with comparative ease through the holes at the tip of the cannula.

Results

We have performed approximately 100 myelograms in the past 6 months using this assembly. We are now convinced that it is a great help in removing radiopaque substance. In a few instances, difficulty has been encountered when the puncture has been made laterally at the nerve root pouch.

Recently we have used the aspiration cannula for recovery of radiopaque substance without first employing the regular spinal needle. The results have been even more satisfactory in terms of absence of pain and relative ease in recovering the contrast material. We have used this needle in other procedures such as continuous or intermittent cerebrospinal fluid drainage and have found it extremely helpful.

References