

CURRENT COMMENT AND CASE REPORTS

CURRENT COMMENT is a section in ANESTHESIOLOGY in which will appear invited and unsolicited professional and scientific correspondence, abbreviated reports of interesting cases, material of interest to anesthesiologists reprinted from varied sources, brief descriptions of apparatus and appliances, technical suggestions, and short citations of experiences with drugs and methods in anesthesiology. Contributions are urgently solicited. Editorial discretion is reserved in selecting and preparing those published. The author's name or initials will appear with all items included.

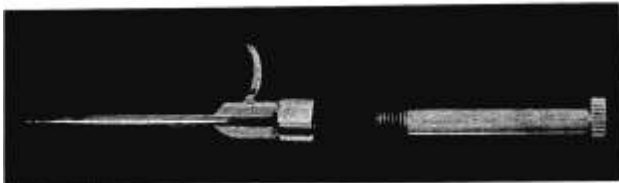
A MODIFICATION OF THE MOORE INTRODUCER FOR THE ADMINISTRATION OF CONTINUOUS SPINAL ANESTHETIC AGENTS

In order to render easy the introduction of a spinal needle into the subdural space, it is essential that the patient should be held steadily with his knees well drawn up onto his abdomen and his chin pressed down toward his chest, and that the line connecting his shoulders should meet the level of the table at 90 degrees. The correctness of this posture is even more important when Lemmon's ingenious continuous spinal anesthesia is used, as the malleable German-silver needle bends easily unless it is introduced in a perfectly straight direction. Regardless of the patient's position, even experienced anesthesiologists often encounter difficulty in introducing the needle, especially if the patient is the thin, sinewy type, with extremely fibrous ligaments. In this case the point of the needle easily deviates from the desired direction, as it does not permit any strong pressure without bending. Lemmon's introducer only pierces the skin, and does not influence the path of the needle.

The Moore introducer is a definite im-

provement, since once it is in the proper position the malleable needle can be slid along the groove. Its shortcoming is, however, that one cannot get a good grip on it and, therefore, the introducer itself often deviates from the proper direction. This makes for frequent withdrawal and re-introduction of the instrument, which not only consumes time but also aggravates the patient's apprehension and keeps him in a most uncomfortable and exaggerated position for a long time.

In order to introduce the needle in the right direction at the first thrust, I have had the following change made in the Moore introducer: a small bolt has been added to the top of the instrument. The center of the bolt and the slit in it correspond with the center and slit of the groove respectively. A 2-inch screw fits into the bolt (fig. 1), and acts as a strong handle. When introducing the instrument to the desired level the attachment can be held firmly in the hand and if the tip of the introducer does not reach the right point immediately, adjustments can be





made by correcting the direction of the screw. As soon as one feels that the introducer is in the right direction, the screw is removed (fig. 2), the malleable German-silver needle is introduced along the groove and, if spinal fluid flows freely, the introducer itself is withdrawn.

I have used the modified instrument with success in a great number of cases, and have not experienced even as much difficulty or delay as with the introduction of the rigid steel needles used for the admin-

istration of the "one shot" spinal anesthesia.

In fig. 1, the slit of the bolt does not appear to be in line with the groove, but this is because the instrument is slightly rotated in the picture so that the "wing" of the Moore introducer is also visible, in a foreshortened manner.

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A NONRESISTING, NONREBREATHING VALVE

Increase of carbon dioxide in the blood during lengthy operative procedures in adults (1) and during any procedure on children is one of the "bugbears" of anesthesia. Even when the simple open drop ether technic is used with children, carbon dioxide quickly builds up in the dead space under the mask and in the blood stream unless the mask is frequently lifted from the face.

In addition, respiratory fatigue during anesthesia for infants and children must be avoided at all costs. Such factors as respiratory acidosis, already mentioned, and resistance in the system used to produce anesthesia should be reduced as much as possible. Of course, many will say that minimal resistance is provided by the open drop ether technic, and that it is the "new-fangled" gadgets that provide all the resistance. Perhaps there is some truth in that statement, but surgeons today are demanding anesthesia for children for operations about the mouth and face and for thoracic procedures in which positive pressure control of the pulmonary system is essential. Such demands cannot be met with the open drop ether mask.

In an attempt to solve some of these problems, particularly in anesthesia of children, the type of valve about to be described was developed. Its gradual evolution has been a composite effort, a growth from ideas of many passing through the graduate school of McGill University (2). As can be seen in the figures 1 and 2, the essential part of the simple mechanism is the thin molded rubber valve disk which is fitted securely by its center prolongation into the rubber seat (3). This provides an efficient and leakproof valvular mechanism. The inlet valve is in close proximity to a Foregger reservoir bag (2.5 liters for children, 5 liters for adults), and the exhalation valve is close to the endotracheal tube, which is essential in this method.

The advantages of such a mechanism are:

1. Carbon dioxide build-up is reduced to a minimum. In the first place, the position of the two valves prevents any rebreathing. The patient inhales only from the reservoir bag, and exhales only into the surrounding atmosphere. Secondly, dead space is cut down to the least