Two-Operator Needle Biopsy of the Liver

A New, Easier and Safer Version of the One-Second Technic

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THE GOOD RESULTS reported in various countries\textsuperscript{1-6} with our liver biopsy method\textsuperscript{7,8} have encouraged us to restudy its different instrumental and methodological aspects so as to further improve its results and eliminate possible drawbacks. This paper presents some modifications that have been widely tested and have given excellent results in our clinic. They do not alter the basic principles of the one-second technic, but they introduce many new elements of practical importance.

The new method, without excluding the use of the old technic, transforms the liver biopsy from a highly specialized procedure to a diagnostic test that may be performed without difficulty by any physician.

PROBLEMS OF PROCEDURE

There are two technical factors governing the risk of liver biopsy, the duration of the intrahepatic phase, and the caliber of the biopsy needle. It is our conviction that these are always the most important factors, but another element less manageable and more difficult to evaluate must always be borne in mind—the experience of the operator. The only way to reduce its importance is to systematize and simplify as much as possible the different phases of the operation.

This is the objective we proposed by our first technic, which had signified real progress. There remained, however, certain manual difficulties that in some cases constituted an appreciable \textit{impasse} for beginners and especially for those operating without guidance. The following difficulties were observed:

\textit{Coordination of Movements}. The greatest difficulty for the beginner was coordinating the quick movement of plunging-extraction while at the same time maintaining the syringe in the aspirat-
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ing position. In the course of practical demonstrations in our clinic and elsewhere I have been able to verify that even those who had never performed a biopsy by the latest technic, described here, were able to learn it immediately and to apply it correctly without inconvenience to the patient.

Control of the Intercostal Space. Another deficiency of the former method, and common to the other liver biopsy methods, arises from the impossibility of controlling the intercostal space during the biopsy maneuver. It is not always sufficient to note the chosen point, to be certain of hitting the interspace. An inadvertent movement of the patient, or sometimes even the changing of the respiratory phase, can move the thoracic cage enough to displace the outer cutaneous sign from the interspace onto the rib. This is usually without consequences except the patient experiences sharp pain and the needle may be damaged. It is more likely to happen with the inexpert, but may also occur with an experienced operator because both his hands are occupied with the biopsy instrument.

Further, it is possible that an unexpected and very dangerous movement of the right patient’s hypochondrium during the intrahepatic phase may completely escape control of the operator fully occupied with handling the instrument.

Perforation of the Skin. Owing to the peculiar shape of the needle’s tip, the insertion through the skin was sometimes difficult. For this reason we have adopted the use of a small stylet for the preliminary perforation (Fig. 1); the biopsy needle then finds the way open and does not encounter any difficulty in passing through the skin.

BASIS OF THE NEW TECHNIC

The syringe is no longer connected rigidly to the needle, but is secured to a rubber tube of about 35 cm. in length (Fig. 2).

It is thus possible to divide the most difficult phases of the procedure into two or more elementary movements performed by different persons. While the operator handles the needle with the right hand and at the same time with his left hand controls the hypochondrium and the interspace, the assistant regulates the syringe and operates it under the orders of the operator (Fig. 4). Each one is thus responsible for only a few elementary movements.

The basic principles are not substantially changed, but the execution is expedited and is considerably safer.