An instrument for cerebral biopsy

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It is occasionally important to obtain a portion of cerebrum from a living patient for histological or other kinds of investigation. The common way of doing this is to make a burr hole or trephine opening in the skull and to aspirate through a small brain cannula. This produces a small fragment of tissue which is often inadequate for the purpose for which it was sought, and in any case, there can be no way of determining from what depths in the cerebrum the specimen is obtained. An alternative method is to make a larger opening, e.g., with a 2 in. trephine, and excise a block of tissue by open operation. The specimen may be damaged by the operative manipulations, and this kind of procedure leaves a considerable scar which is potentially epileptogenic.

With these problems in mind, we have devised an instrument and a technique which we feel has certain advantages over existing methods. The instrument (Fig. 1) is essentially a hollow metal cylinder 7 cm. long with a bore of 0.7 cm. The entering end is chamfered to facilitate insertion into the brain, and a small cutting blade (A) is fitted to the end, operated by a lever (B) in the handle of the instrument. A sliding collar (C) limits the depth to which the cannula can be inserted, and this determines the depth of the specimen.

The cannula is inserted through a burr hole or a 2.5 cm. trephine opening. The dura is opened and a small incision, e.g., 0.5 cm. long, is made in the leptomeninges over an avascular area of cortex. The cannula is advanced to the required depth with a gentle twisting movement, and the cutting blade is brought across the end of the cannula by moving the lever (B) through its full range, and back again to restore the blade to the resting position. A finger is then placed over the proximal end of the cannula, and it is withdrawn. The specimen is removed from the cannula by inserting the plunger (D) in the proximal end and advancing it slowly.

We have encountered no difficulty from haemorrhage, nor have there been any complications of this simple procedure, which can usually be done under local anaesthesia.

FIG. 1. The cerebral biopsy instrument (actual size).

1 The biopsy instrument can be obtained from Sano-Técnica Lda., Rua Nova do Almada 61, Lisbon, Portugal.
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