

# ADVANTAGE OF A PARTICULAR METHOD IN CYTODIAGNOSIS BY ASPIRATION WITH A FINE NEEDLE

G. L. ONNIS - V. TERRIBILE WIEL MARIN (\*)

Institute of Pathological Anatomy - University of Padua (Italy)

(\*) Chair of the Institute of Anatomy and Pathological Histology  
(C.L. in Odontology and Dental Prothesis)

*Summary:* The indisputable utility of needle aspiration in early diagnosis induced us to improve a personal method of withdrawal.

This is based on the use of an apposite mounting studied and patented by us, in order to maintain the single-use syringe in constant aspiration; also in some needles modified by a longitudinal split with a cutting edge.

The ever-increasing use of cytology obtained by needle aspiration with fine needles, variously modified according to the preference of the pathologist (<sup>1, 2, 6</sup>) in clinical instrumental enquiries into the most frequent pathologies has induced us to devise an aspiration mechanism aimed at facilitating this delicate task for the doctor.

Within certain limits (<sup>5</sup>) (insufficiency of material extracted, possible technical errors which lead to the loss of cells, extraction from outside the area to be examined, errors of over or under evaluation of the sample), this method still remains an essential link between the clinical diagnosis and the precisely histological one.

While the fact remains that the histological examination is often the last to be carried out there is no doubt that cytology is recognised as useful and indicative in early diagnosis, having the advantages of minimal cost and of causing much less trouble to the patient.

Among present methods of withdrawal by a fine needle, the classical example of Zajdela (<sup>5</sup>) and Franzen (<sup>4</sup>) are well-known. These methods, considered singly, are, in our opinion, lacking under certain aspects some concerning the technique of withdrawal, others for the exiguity of the material withdrawn.

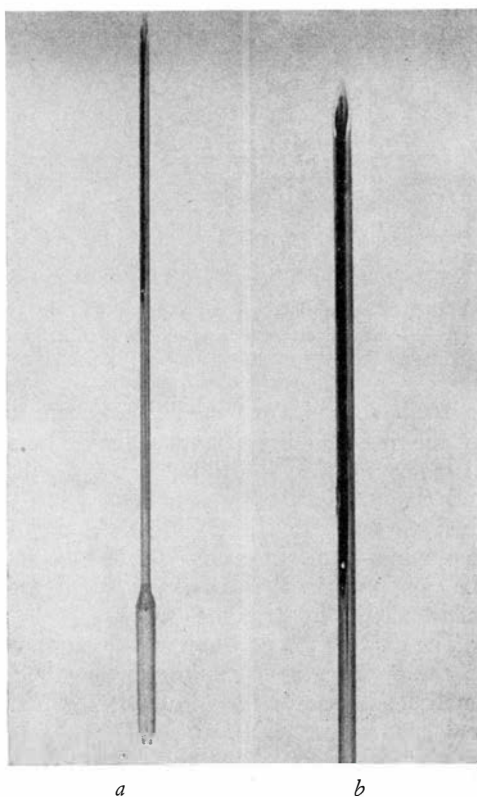


Fig. 1. — *a*) Details of the split in the needle, with the Right margin having cutting edge. *b*) Modified needle with longitudinal variant split to enable it to be inserted into the rubber probe.

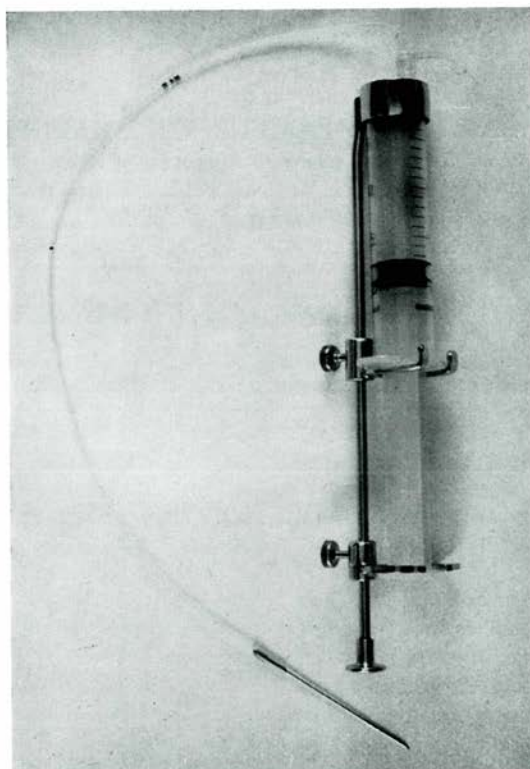


Fig. 2. — Stainless steel syringe-holder for single-use syringes in aspiration. A rubber probe (K 31) is inserted with a specially modified needle attached.

We have had some modifications made to the needle. Preserving a length and diameter variable according to the depths and characteristics of the area to be reached we made a slit 2 cms long and 1 mm wide from the point of the needle; the right margin of the slit was raised and made cutting by grinding (fig. 1a).

The part of the needle normally applied to the syringe was substituted by a very small steel tube of the diameter of a normal gastric-nose probe (fig. 1b) so as to be able to insert it into the extremity of the tubes after having cut the tip. The extremity of the probe is, in its turn, inserted into the syringe in plastic mounted on the appropriate structure (Patent No. A/86) (fig. 2).

The method we use is as follows: the doctor takes between the index and thumb of the left-hand — for example the node of the breast — holding it firmly; then the needle is inserted so as to hold the slit that is found within the node, then the extraction with the syringe begins, using the appropriate mounting laying it on the patient's abdomen, taking the node again between the index and thumb of the left hand, causing a slight and increasing pressure on the node. At the same time the needle is turned anti-clockwise by the fingers of the right hand, according to Zajdela's method<sup>(6)</sup>.

By such manoeuvring the cutting edge of the slit collects a certain quantity of the cellular material which runs along the

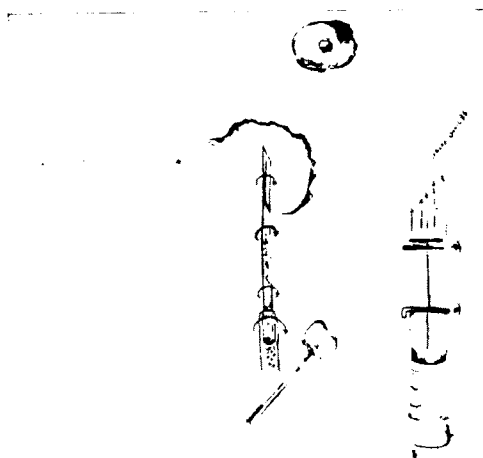


Fig. 3. — Schematic drawing reproducing all the stages of withdrawal (rotation of the needle and consequent scraping on the inside of the node; uninterrupted flow into the syringe, mounted on the single-use holder; closure of the probe with pean).

probe, at the same time maintaining the aspiration of the syringe. When the quantity of material rising along the probe is considered sufficient the aspiration is interrupted by applying a small pean onto the probe itself so that once the needle is removed from the node the flow of cells into the syringe is stopped (fig. 3).

The needle is then withdrawn from the node, pressure on the syringe is also withdrawn and, the pean removed, the probe may be emptied onto a glass tray without removing the needle.

In comparison with previous methods this one offers the advantage that the slit of the needle increases the amount of ma-

terial withdrawn, helped by the pressure of the finger which presses on the node, both by the rotating movement which exploits the part sharpened by the slit and again by capillarity and the negative pressure of the syringe. These expedients allow, in the majority of cases, for the avoidance of eventually insufficient preparations as, maybe, when the point of the needle overtakes the "tumor" and withdraws irrelevant material.

Besides, this method permits the operation to be performed without assistance, both hands are free, allowing for a notable increase in sensitivity in manoeuvring both the needle and the node.

## RESULTS

By this method the manual sensitivity in carrying out withdrawals is increased, with a constant reduction in false negatives. Besides, the steady withdrawal and the modified needle notably increase the quantity of cellular material which is collected.

## BIBLIOGRAPHY

- 1) Azzarelli A., Di Pietro S., Pilotti S.: *Argomenti di Oncologia*, 29, 40, 1981.
- 2) Cornillo M., Verhaeghe M., Cappelara P., Clay A.: *Lille Med.*, 1027, 1031, 1971.
- 3) Elias Gassible: *Obst. Gyn. Lat. Am.*, May-Jul., 1985.
- 4) Franzén S., Zajicek J.: *Acta Radiol.*, 241, 262, 1968.
- 5) Hajdu S. I., Melamed M. R.: *Am. J. Clin. Pathol.*, 350, 356, 1973.
- 6) Zajdela A., Ghossein N. A., Pilleron J. P., Ennuyer E.: *Cancer*, 499, 506, 1975.
- 7) Zajdela A., Benyaha B., Magdelent H., Vilcoq Jr.: *Boll. Cancer Paris*, 456, 460, 1982.
- 8) Zajdela A.: *Arch. Anat. Fath.*, 85, 87, 1963.
- 9) Zajdela A., Laurent M., Durand J. C.: *Bull. du Canc.*, 401, 410, 1975.