

Samples taken for puncture studies and their report according to the instrument used to obtain the material

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Editorial

Access to organic material from different parts of the human economy is vital to achieving the «Gold Line» in diagnostics today. This «gold line» is none other than the confirmation of the suspicion with the Cyto/Histological study of the lesion. Although there are a large number of algorithms obtained with strict rules of comparison between images, effects, presentations, different colors and smells, they all pass through the calibration point with the final result of the Cyto/Histological studies.

- a. It is important to note that these Cyto/Histological studies are currently not limited to the optical results obtained with the visualizations from different instruments, whether low or high definition, but are directly related to biochemical reactions and in opportunities of different electrical potentials and chromosomal evaluations by runs in order to confirm the origin of the material studied and whether it corresponds to a normal presentation or with some type of alteration, whether cellular or architectural, or in response to some biochemical or induced reaction.
 - b. This whole chain of actions leads us to define two terms that very often tend to be confused when performing a specific organ sample taking procedure in the human body.
 - c. It is important to clarify that every area of our body is exposed to the taking of samples for Cyto/Histological studies, only that we must define from early on, when a sample is for Cytological study and when it is for Histological study. Approaching the etymology of the expression, we can understand that cytological studies (Cito: Gr. Cell) only cover the structures and ultrastructure of cells, their level and characteristics of maturation in their cell line, as well as their individual responses to different biochemical reactions, electrical or genetic runs, which are previously characterized for a given cell as normal belonging to a certain tissue and with a certain function. When we refer to the word or Histological studies (Histo: Gr. Tissue; Logos: Gr. Studies), these must include the architectural arrangement of the cells grouped in special formation to allow the activity of the organ to be formed, as well as the new formation, regeneration and permanence in each chromosomal turn of the functional structure considered as normal of the organ in question, allowing the growth of the different cell groups without allowing the cellular invasion of tissue spaces pre-established by determined function and activity. The coexistence of different cell groups with related or dissimilar functions but with independence in cell/tissue development and repair sequences is what we know as viable and healthy tissue.
 - d. When we carry out a study of these characteristics of a cell group, we call it CITOTOLOGY.
 - e. When we carry out a study of the characteristics described in a formed tissue, we call it a BIOPSY.
 - f. If we manage to understand these differences, we enter into the determination where big mistakes are made when communicating experiences or results of studies that can lead us to make wrong decisions or at least ineffective or excessive.
- We must refer to studies of material obtained by puncture.
- Puncture basically has two important characteristics, and they are physical:
- Fine needle puncture (NFP) and Core needle puncture (CNP).
- a. **Fine needle puncture (NFP):** This refers to the taking of a sample from a certain organ, but due to the thinness of the needle used to obtain the study material, it does not allow its extraction while preserving its original architecture. It is only possible to obtain with great clarity, groups of cells belonging to the specific tissue and where all the micro and ultra-characteristics, as well as reactionary and genetic characteristics of the particular cells can be studied. This study does not allow the assessment of the architectural state of the tissue, so it can and should only be classified as: **FINE NEEDLE ASPIRATION CYTOLOGY (FNAC)**

b. Core needle puncture (CNP): It refers to the taking of samples of a particular tissue, where due to the large caliber of the needle used; fragments of the tissue in question can be extracted, preserving its normal or altered structure as the case may be, for extended comprehensive study. This assessment of the cellular architecture and characteristic can and should be classified as: CORE NEEDLE ASPIRATION BIOPSY. (CNB)

Once these concepts have been reviewed, we can conclude in simple differences that will allow us to inform in a clear way for the receivers of information and who have the responsibility to takes decisions based on those reports. We conclude that Final Needle Punctures (FNAC) only provides cytological studies, and that Core

Needle Punctures (CNB) allow us to study tissues and become biopsies. The use of one or the other procedure is determined by the researcher's need for the data he or she wants to obtain from the organic material, although sometimes it may be limited by the size and/or location of the lesion.

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Conflicts of interest

The authors declare that there are no conflicts of interest.