

Optimizing Cancer Diagnosis: Methods for Obtaining Tumor Tissue with Minimal Invasiveness

Shicong Shaopei*

Department of Oncology, Moffitt Cancer Centre, Taipei, Taiwan

Commentary

Received: 28-Nov-2023, Manuscript No. MCO-23-122247;

Editor assigned: 01-Dec-2023, PreQC No. MCO-23-122247(PQ);

Reviewed: 14-Dec-2023, QC No. MCO-23-122247; **Revised:** 21-Dec-2023, Manuscript No. MCO-23-122247(R); **Published:** 28-Dec-2023, DOI:

10.4172/medclinoncol.7.3.009

***For Correspondence:**

Shicong Shaopei, Department of Oncology, Moffitt Cancer Centre, Taipei, Taiwan

E-mail:

shicongshaopeiye55@gmail.com

Citation: Shaopei S. Optimizing Cancer Diagnosis: Methods for Obtaining Tumor Tissue with Minimal Invasiveness. Med Clin Oncol. 2023;7:009.

Copyright: © 2023 Shaopei S. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

DESCRIPTION

The treatment of cancer typically involves extensive procedures with significant toxicity, and the diagnosis itself carries profound psychological, social, and physical consequences for patients. Given these implications, it is imperative to ensure a precise diagnosis before informing the patient or initiating therapy. This process may involve a straightforward biopsy or a more invasive approach, such as a laparotomy or craniotomy. Generally, the least invasive method of obtaining tissue should be employed, but there are instances where clinical judgment and common sense must prevail.

Research & Reviews: Medical and Clinical Oncology

In some cases, attempts to obtain tissue from an ill-defined or poorly accessible tumor may prove unsuccessful, or a patient may be deemed unfit for an essential procedure due to age or overall health condition. In such circumstances, it becomes crucial to weigh the benefits of extensive investigation against the potential outcomes, particularly when no treatment or change in management would be considered.

Various techniques are available for obtaining tumor tissue, each with its own set of advantages and limitations. These include:

Cytology of bodily fluids

A small specimen of body fluid can be collected and examined under a microscope within minutes. This approach allows for an immediate and accurate diagnosis by an experienced cytologist. While false negatives may occur, the low false positive rate and outpatient-friendly nature of the procedure make it advantageous. However, the obtained cellular material may be insufficient for further immunohistochemical analysis without additional processing.

Cytology of tissue scrapings

Superficial cells are scraped or brushed from a body surface, stained, and examined under a microscope. The advantages and limitations are similar to those of fluid cytology.

Fine Needle Aspiration (FNA)

Fine Needle Aspiration (FNA) is a common and effective biopsy procedure used to obtain a small sample of cells from a mass or nodule for further investigation and diagnosis. It is a safe and cost-effective method that can be performed by various healthcare professionals, including pathologists, clinicians, radiologists, and pulmonologists, depending on the location of the lesion. FNA can be used to sample any palpable or visualized mass, as long as valuable information is expected to be obtained. The procedure involves collecting clinical data, sampling with small needles, specimen preparation and staining, interpretation, and reporting. FNA allows for the assessment of cell morphology, tissue architecture, and extracellular matrix, aiding in the diagnosis of various conditions. It is commonly used in the evaluation of thyroid nodules and pancreatic cancer. FNA is generally well-tolerated, with minimal complications such as bleeding, hematoma, or pneumothorax. This involves using a fine-gauge hypodermic needle to aspirate cells from a suspected tumor. Ultrasound or CT guidance may be necessary for deep-seated tumors. While FNA is less invasive than some alternatives, the cellular material obtained faces similar advantages and disadvantages as fluid cytology.

Needle biopsy

More invasive than FNA, this procedure entails taking a core of tissue with a biopsy needle under local anesthesia. Results are not available for several days, but the larger specimen reduces the likelihood of false negatives. Needle biopsy allows for tumor grading and architectural subtyping, particularly beneficial for lymphoma, which may not be effectively diagnosed by cytology alone.

In conclusion, selecting the appropriate method for obtaining tumor tissue involves a careful consideration of factors such as invasiveness, speed of results, and the potential for further analysis. Balancing these considerations ensures that patients receive timely and accurate diagnoses, paving the way for effective cancer management.