Core Needle Biopsies

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Core Needle Biopsies

Core needle biopsies are a commonly used sample collection technique with a wide range of applications, including the diagnosis of solid tumors, assessment of tumor margins, evaluation of inflammatory lesions, and guidance for therapeutic decisions. They can be performed in various anatomical sites, such as breast, prostate, lung, liver, and kidney.[2] A core needle biopsy is collected by inserting a long hollow tube to collect a small cylinder of tissue around 0.5 in or 1.3 cm long.[1,2]

Since they are minimally invasive, core needle biopsies can be performed on an outpatient basis, usually with local anesthesia. This results in less patient discomfort, shorter recovery time, and lower risk of complications compared to more invasive biopsy methods, which is especially useful given the sensitive areas involved in breast and prostate cancers.[1]

Despite their small size, core needle biopsies provide a high diagnostic accuracy, allowing for precise identification of the nature and characteristics of the sampled tissue. Core biopsies yield larger tissue specimens compared to fine-needle aspiration (FNA), which can enhance the accuracy of histological and immunohistochemical analyses.[5] The larger sample size can also facilitate the assessment of tumor grading, molecular testing, and prognostic evaluation.[3]

However, core needle biopsies may still have limitations in sampling certain types of lesions, such as lesions with heterogeneous distribution, small lesions, or lesions in difficult-to-reach locations. In such cases, additional biopsy methods, such as FNA or surgical biopsy, may be required to obtain a more representative sample.[6]

Two of the most common applications of core needle biopsies are prostate cancer and breast cancer diagnoses. Core needle biopsies are the standard method for diagnosing prostate cancer, as they allow for sampling of multiple areas of the prostate gland. When stained via histological methods, such biopsies can provide information on tumor grade, extent, and multifocality, which are essential for determining the appropriate management strategy.[1]

In breast tissue, core biopsies are commonly used for the diagnosis of breast lesions in cases of suspicious mammographic findings and palpable masses. When stained, they can provide accurate information on tumor type, grade, hormone receptor status, and HER2 status, which are crucial for treatment planning.[2]
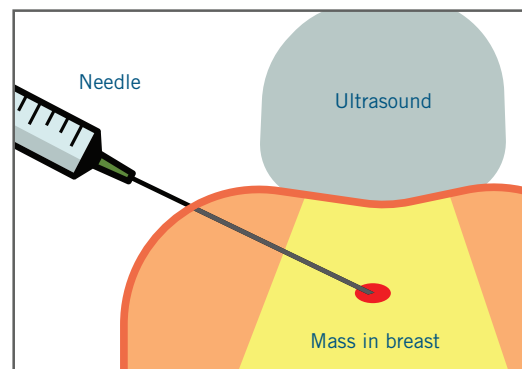
Types of Biopsies

Fine-Needle Aspiration   Core-Needle Biopsy   Syrgical Biopsy

Needle   Ultrasound   Mass in breast

To learn more about Biocare Medical's product offerings for prostate and breast markers, please visit our website at www.biocare.net or call our Technical Support line for more information at 1-800-799-9499, Option 3.

1. Mayo Clinic. (2021). Prostate Biopsy. About Prostate Biopsy. Retrieved from https://www.mayoclinic.org/tests-procedures/prostate-biopsy/about/pac-20384734

2. American Cancer Society. (2021). Breast Biopsy: Core Needle Biopsy of the Breast. Retrieved from https://www.cancer.org/cancer/breast-cancer/screening-tests-and-early-detection/breast-biopsy/core-needle-biopsy-of-the-breast.html

3. Frydenberg, M., Collins, J. P., & Deane, R. F. (1984). Fine needle aspiration biopsy of the breast: the advantages and disadvantages compared with core biopsy in the diagnosis of breast lesions. Pathology, 16(3), 257-261. doi:10.3109/00313028409081178

4. Guo, X., Wang, Z., Zhang, J., Xu, H., & Xu, Z. (2014). Core needle biopsy is a safe and accurate method for the diagnosis of breast cancer: a meta-analysis. Breast Cancer Research and Treatment, 143(3), 311-321. doi:10.1007/s10549-013-2791-7

5. Malhotra, R., & Srinivasan, R. (2019). Update on breast core needle biopsies: histologic, immunohistochemical, and molecular perspectives. Cancer Cytopathology, 127(2), 85-96. doi:10.1002/cncy.21742

6. Wells, C. A. (2011). Advantages and disadvantages of FNA and core biopsies: diagnostic accuracy and precision for aspiration biopsy in the diagnosis of lesions of the breast. In Breast Cytohistology (pp. 43-45). Cambridge University Press. doi:10.1017/CBO9780511676555.009