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REVIEW ARTICLE

FINE NEEDLE ASPIRATION PUNCTURE (FNAC)

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ABSTRACT

Objectives: The present study aims to describe and discuss the technique and relevance of FNAC application in clinical practice. Method: This is an integrative literature review. Results: Fine Needle Aspiration Puncture (FNAC) can be indicated in cysts, benign and suspicious solid nodules, complex solid-cystic lesions, axillary lymph nodes and postsurgical seromas. Papillary effusion cytology should be requested and interpreted with caution, only in selected cases, due to the low positive predictive value of the method, with false negative rates around 50%. When associated with clinical and imaging exams, FNAC offers a specificity rate of 100% and a sensitivity of 90%.

KEYWORDS: FNAC; BIOPSY; BREAST; DIAGNOSYS

INTRODUCTION

Fine needle aspiration cytology (FNAC) allows the cytological diagnosis of the lesion. It is a simple, low-cost method performed in an outpatient setting. FNAC can be performed without the aid of imaging methods (free hand), when the lesion is palpable, or guided by ultrasound, mammography (stereotaxis) or resonance, when the lesion is not palpable1 (Figure 1).

Figure 1. Fine needle aspiration puncture. A. Free hand. B. Guided by ultrasound.

LITERATURE REVIEW AND PROCEDURE TECHNIQUE

To perform the method, antisepsis and local anesthesia are used with 2% lidocaine, a cytoaspirator, to which a 10 or 20 ml syringe with a fine gauge needle is attached. Longer needles, 30 mm and fine gauge, which can be 0.6 (blue), 0.7 (black) or 0.8 mm (green) are preferred. Larger gauge needles, such as 40 x 12 (pink) or 40 x 16 mm (white) are reserved for punctures of lesions with dense (thick) content, large seromas and abscesses. For anesthesia, needles, similar to insulin needles, measuring 13 x 0.45 mm are used. The transducer must be protected with a condom due to the possibility of contamination by blood and other secretions2 (Figure 2).

Figure 2. Fine needle aspiration puncture. Cytoaspirator coupled to a 20 ml syringe, 30 x 0.8 mm needle. 5 ml syringe and 13 x 0.45 mm needle for local anesthesia. Blades and fastener. Larger gauge needles, 40 x 12 (pink) and 40 x 16 mm (white) for punctures of lesions with dense (thick) content, large seromas and abscesses.

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Figure 2. Fine needle aspiration of a cyst. A. Needle placement. B. Post-puncture.

The aspirated material is prepared on slides by thin smear. Fixation can be done in absolute alcohol (96°) or cytofixers, when staining by the Papanicolaou or Hematoxylin-Eosin (HE) method, or air-dried smears, without any fixation, when another special stain is used, such as, for example , Giemsa, Rapid Panoptic® or Diff-Quik®. Another option would be liquid-based cytology, which is processed and homogenized in specific systems, with cell enrichment, improving visualization on a clean background. Slides are made that will be stained later by the aforementioned methods[3].

FNAC may be indicated in cysts, benign and suspicious solid nodules, complex solid-cystic lesions, axillary lymph nodes and postsurgical seromas.

Papillary effusion cytology should be requested and interpreted with caution, only in selected cases, due to the low positive predictive value of the method, with false negative rates around 50%[4].

CONCLUSION

Fine Needle Aspiration Puncture (FNAC) is a simple, low-cost method that allows the evaluation of palpable and impalpable nodules and lesions. Therefore, in view of the integrative review of the literature, the PAAF method demonstrated ease in its application methodology and materials necessary for the procedure to be carried out in an accessible and practical way in outpatient clinics, bringing good performance of the method in everyday life. Thus, FNAC allows the cytological diagnosis of the lesion, and can be performed without the aid of imaging methods or guided by ultrasound, mammography (stereotaxis) or resonance. However, it is limited in terms of differentiating between in situ and invasive tumors[1-4].

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