Diagnostic Value of Fine Needle Aspiration Cytology (FNAC) and Cell Block Preparation for Breast Lesions
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[Abstract]
Objective To investigate the diagnostic value of fine needle aspiration cytology (FNAC) and cell block preparation in the qualitative diagnosis and classification for breast lesions.
Methods FNA was performed using a 22/23-gauge needle attached to 10ml syringe without the aid of a syringe holder. First 1-2 slides were prepared, and then the residual aspirates were rinsed in a fixed fluid slowly for cell block preparation. All FNA cases were prepared by conventional smear and cell block. Corresponding immunocytochemistry (CK, vim, LCA, ER, PR, HER-2, Ki67, P53, CK34βE12, CK5/6, P63, CP, SMA, CK14, CK17, GATA-3, CD44v6, TOPIIα, PS2, etc.) and gene detection (HER-2, 21-gene RT-PCR assay, IGH1, IGH2, TCR α) were chosen for needle aspiration cytology specimens. Then the results of cytology were correlated with histology results.
Results The total accuracy of FNAC was 94.8% (272/287) about the breast lesions. The accuracy of benign lesions was 92.1% (139/151), and the accuracy of malignant lesions was 97.8% (133/136).
Conclusion The diagnostic accuracy of the combination of FNAC smear with cell block is high for breast lesions. Although there are not obvious cytological characteristics in some breast malignant tumour cell smears, such as lymphoma, infiltrating lobular carcinoma and metastatic malignancies, the accuracy of the diagnosis and classification can be improved by immunocytochemistry and gene detection on the basis of cell block. In addition, the immunocytochemistry and gene detection performed on cell block can provide reliable pathological diagnostic foundation for clinical targeted precision medical treatment and theoretical basis for prognosis.
Key words: Fine needle aspiration cytology; Breast lesions; Cell block; Gene detection; Immunocytochemistry