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Fine needle aspiration cytology from screening to definite diagnosis: Role of molecular diagnosis

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Fine needle aspiration cytology (FNA) is a simple inexpensive and non-traumatic technique used to assess tumors all over the body; usually prior to surgical removal. The brisk advances in imaging techniques and interventional radiology add a lot to the feasibility and accuracy of FNA. FNA samples can be processed either through conventional or liquid based techniques. Our experience through reviewing sections processed by both techniques favors conventional method over liquid based cytology in many aspects. To what does FNA help in reaching accurate diagnosis? FNA will be of great help in giving guidance for appropriate approach to handle tumors. In the current practice FNA will be of help in selecting cases of surgical removal of tumors and monitoring tumor spread as definite diagnosis can only be achieved by surgical biopsy. Cytological samples are appropriate for many molecular techniques such as Real-time polymerase chain reaction, Fluorescent in situ hybridization, flow cytometry and others. Actually, FNA samples are better in handling and easier in processing for molecular techniques than tissue samples from biopsies. Molecular techniques can add a lot to accuracy of the diagnosis of FNA samples through identification of molecular changes that are specific for particular cancer. Specific molecular alteration are now documented for hemopoietic, lymphoid, breast, lung, colon, thyroid, renal and prostate malignancies which their identification in FNA samples together with morphologic changes in cytological smears will aid in confirming the diagnosis and facilitates abrupt treatment which will affect significantly the disease outcome. In conclusion, Molecular techniques will make FNA cytology more decisive and conclusive as well as will direct molecular treatment more accurately which will be translated into better prognosis.

Biography

Suhail Al-Salam has completed his MD in 1981 from Baghdad University, then MSc pathology in 1988 from Glasgow University, UK, then Board degree in Pathology 1998 from Baghdad Iraq, then European board of pathology in 2005 Paris France, Member of International Academy of Cytology 2005 Germany, and Fellow of Royal College of Pathologists United Kingdom 2010. He is Associate Professor in Pathology in the department of Pathology, College of Medicine & Health Sciences, and Consultant Pathologist at Tawam Hospital in Affiliation with John Hopkins Medicine, ALAIN UAE. He has published more than 77 papers in reputed journals and has been serving as an Editorial Board Member of repute.

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