Cytohistological correlation of prognostic factors in breast cancer in low to mid income country like india with ai based method for detection of tumour budding

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Abstract

Diagnosis of Breast lesion has leaped rapidly from Fine Needle Aspiration Cytology (FNAC) to molecular methods. In some institutes, the best possible cost effective diagnosis is given, whereas in others, molecular studies are done to provide the diagnosis which influences the therapeutic and prognostic outlook. Grading of cytological features on FNAC smear is useful in categorizing the breast lesions. One of the novel method is MMS (Modified Masood Scoring). This when correlated with Modified Scarf- Bloom- Richardson scoring (BRS) on histopathology (HPE) will grade the breast lesion accurately in case of malignancy. There are various methods studied to assess the metastatic potential of breast cancer and two of them are lympho vascular invasion (LVI) and tumor budding (TB). ER (Estrogen receptor) serves dual roles in breast cancer by predicting favorable disease outcome and by facilitating tumor progression. Digital histopathology is the one among the state-of-the-art method in tissue diagnosis. Deep Learning Algorithms (DLA) have emerged as a promising artificial intelligience (AI) solution for Histopathological study. Convolution Neural Networks is a well know DLA in AI. Mostly used in lot of Medical Image analysis for the classification, detection and segmentation of the cancerous tissues. Recently, AI based methods have emerged as a promising tools for the detection of tumor buds and other biomarkers. Our study correlates MMS, BRS, lymph node invasion, ER status and tumour budding (conventional and automated methods) in assessing the prognosis of breast cancer.

Biography

Prajwala Nagaraju has completed her MBBS from Mandya Institute of Medical Sciences, Karnataka, India. She is currently puruing MD Pathology from JSS medical college, A constituent of JSS AHER, Mysuru, Karnataka, India.