

Immunohistochemical Expression of C-Kit in Fibroepithelial Tumors of Breast

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Abstract:

Fibroadenomas are the most common breast tumors. Phyllodes tumors are a fibroepithelial tumor composed of an epithelial and a cellular stromal component. They may be considered benign, borderline, or malignant depending on histologic features. CD117, also called KIT or C-kit receptor, is a proto-oncogene that its expression or mutations can lead to cancer. C-kit shows stromal expression in malignant phyllodes tumors. The present study included thirty fibroepithelial breast tumor cases. This work aimed to study the expression of C-kit in fibroepithelial tumors of the breast and its relation with their clinicopathological parameters. According to our results, there was a progressive increase in C-kit expression from benign to malignant tumors, all cases of fibroadenomas were negative for C-kit [except for one case showed weak staining (score 1)]. All cases of phyllodes tumor showed positive staining with variable degrees of intensity. The difference in results of the immunostaining between fibroadenomas and phyllodes tumors were statistically significant ($P=0.001$). Within the phyllodes tumor cases score 1 immunostaining was seen in 80 % of the benign cases, only one benign phyllodes tumor case showed moderate staining score 2. The malignant cases showed moderate immunostaining (score 2) in 40 % of the cases and strong staining (score 3) pattern in 60 % of the malignant cases. The borderline cases showed score 2 in 60 % of cases and score 3 in 40 % of these cases. In conclusion, the notable increase in C-kit expression in the mammary fibroepithelial tumors provides strong evidence that C-kit receptor mediated tyrosine kinase involvement in the pathogenesis of phyllodes tumors and the therapeutic agent, tyrosine inhibitor (Glivec) may be a potentially useful drug for management or preventing their recurrence.

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