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Tumor budding in breast cancer

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Tumor budding is referred to as the phenomenon in which tumor cells detach from the cohesive tumor mass. Tumor buds are generally regarded as single tumor cells or small cell clusters. Tumor buds can detach from the main tumor at the periphery or within the tumor. Tumor buds are best characterized in colon cancer but are increasingly recognized in other tumor types including breast cancer. It was shown that tumor buds express proteins involved in epithelial-mesenchymal transition (EMT) such as e.g., snail or vimentin while losing adhesion molecules such as e.g., e-cadherin. Therefore, tumor budding is regarded as a phenomenon of EMT. It was shown that tumors with a high number of tumor buds are associated with lympho-vascular invasion and metastasis indicating that tumor buds might be the culprits of the early metastatic process. In some tumors including breast cancer is shown that a high number of tumor buds were associated with worse survival. If tumor buds represent a highly invasive and migratory cell population then it would be important to target these cells effectively. However, other aspects need to be taken into account that can influence EMT and subsequently tumor budding such as e.g., the tumor microenvironment. In breast cancer e.g., the ratio between tumor stroma and fibrosis seems to play a role.

Biography

Coya Tapia is a Research Pathologist with a joint appointment at the Department of Translational Molecular Pathology and the Department of Investigational Cancer Therapeutics (Phase I program) at UT MD Anderson Cancer Center in Houston, Texas. After her board certification she became a Post-doctorate Fellow at the Translational Genomics Research Institute in Phoenix, Arizona. She was then appointed as an Attending Pathologist at the University of Basel in 2008 and University of Bern in 2011, Switzerland. In 2015, she decided to join MD Anderson Cancer Center as a Faculty.

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