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Marker dots emanating from chromosomes can be helpful in early detection of malignancy

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Way back in 1973 a few chromatin dots of variable sizes were reported in squashes of brain tumour tissues viz. medulloblastoma, ependymoma and tuberculoma along with hyper and hypoploid chromosome counts. Follow up studies on various malignancies recorded presence of these marker dots in all of them and intriguingly only selective chromosomes were involved (chromosomes 1, 4, 5, 9, 11 and 16) in emanating marker dots. Studies on genotoxic assessments by lymphocyte cultures on 600 persons exposed to methyl isocyanate (MIC) gas and various control subjects and family members in Bhopal had also established that chromosomal damages have been installed among seriously exposed persons. This was a remarkable find to record in slides from lymphocyte cultures of exposed persons and confirms the presence of chromatin marker dots which were seen emanating from specific chromosomes. Obviously this becomes imperative to reemphasize that these chromatin dots seen emanating from chromosomes are decidedly early indicators of chromosomal mutagenesis. We have confirmed by G, and C banding as well as by Feulgen staining and fluorescence procedures that these are chromatin bodies found in patients of cancers (bone, breast, lung and colon in particular) and sometimes in a few of their family members. Family members prone to cancer were found to exhibit marker dots and developed clinical signs of cancer after 07 to 10 years after our report. Marker dots measuring 2-to-3 micron emanate from different chromosome in several metaphases in preparations from cancer patients. Obviously, it appears that the molecular attenuation of chromatin structures movable from chromosomes is related with triggering neoplastic transformations. These dots appear in those metaphases which exhibit translocations and acrocentric associations, which are precursors to installation of chromosomal mutagenesis as established since the time of Boveri. Marker dots can be reliable early indicators of precancerous patients; may help in early detection. We have evidences for this pronouncement.

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