Tumor-platelet interactions: Glioblastoma growth is accompanied by increasing platelet counts.

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OBJECTIVES: We have recently shown that pre-operative thrombocytosis is associated with significantly shorter survival in patients with glioblastoma (GBM). The interaction between platelets and growth of GBM is not clear yet. One hypothesis suggests that platelet-released growth factors support growth and migration of malignant glioma and endothelial cells and thus may increase angiogenesis in these tumors. Another hypothesis would be that larger tumors are associated with poorer survival and produce more factors inducing thrombocytosis. In this study we investigate whether GBM growth induces thrombocytosis.

PATIENTS AND METHODS: We compared pre-operative platelet counts of 24 patients with GBM with platelet counts taken 46.3±29.2 months (mean±1S.D.) prior to diagnosis of GBM.

RESULTS: We found immediate pre-operative platelet counts to be significantly higher than the older platelet counts (p=0.02). Furthermore, patients with GBM at time of diagnosis presented with increased platelet counts (314±86 platelets/nl) compared to the normal population.

CONCLUSION: Our results suggest that elevation of platelet counts in glioblastoma patients is caused by growth and development of GBM. Whether tumor secreted cytokines are the underlying mechanism for this finding, remains to be elucidated.

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