Traumatic glioblastoma: commentary and suggested mechanism.

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The role of head trauma in the development of glioblastoma is highly controversial and has been minimized since first put forward. This is not unexpected because skull injuries are overwhelmingly more common than glioblastoma. This paper presents a commentary based on the contributions of James Ewing, who established a major set of criteria for the recognition of an official relationship between trauma and cancer. Ewing's criteria were very stringent. The scholars who succeeded Ewing have facilitated the characterization of traumatic brain injuries since the introduction of computed tomography and magnetic resonance imaging. Discussions of the various criteria that have since developed are now being conducted, and those of an unnecessarily limiting nature are being highlighted. Three transcription factors associated with traumatic brain injury have been identified: p53, hypoxia-inducible factor-1α, and c-MYC. A role for these three transcription factors in the relationship between traumatic brain injury and glioblastoma is suggested; this role may support a cause-and-effect link with the subsequent development of glioblastoma.

KEYWORDS: Ewing's criteria; Traumatic cancer; glioblastoma; glioma; transcription factors; traumatic brain injury

PMID: 29708004 DOI: 10.1177/0300060518771265