Expression of the extra domain B of fibronectin, a marker of angiogenesis, in head and neck tumors

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OBJECTIVES/HYPOTHESIS: The extra domain B (ED-B) of fibronectin, a naturally occurring marker of tissue remodeling and angiogenesis, is expressed in the majority of aggressive solid human tumors, whereas it is not detectable in normal vessels and tissues. STUDY DESIGN: In view of the diagnostic and therapeutic clinical applications of the L19 antibody, which is specific for the ED-B domain of fibronectin, a prospective immunohistochemical analysis of different head and neck tumors was performed. METHODS: In all, 82 head and neck tissue biopsy specimens were immunohistochemically analyzed using the L19 antibody. They consisted of 53 different malignant tumors, 8 benign tumors, 10 nontumoral lesions, and 11 normal control tissues. RESULTS: A strong positive staining with the L19 antibody could be observed in 87% of the investigated malignant tumors, in only 38% of the benign tumors, and in 20% of the nontumoral lesions (P < .0001). The extra domain B was completely absent in the normal control tissue samples. CONCLUSIONS: The results show that ED-B is abundantly expressed around the neovasculature and in the stroma of the majority of malignant tumors of the head and neck but is undetectable in normal tissues. The ED-B domain of fibronectin is a good-quality tumor-stroma-associated antigen that warrants clinical trials with antibody-based pharmaceuticals, including immunoscintigraphic investigations and radioimmunoguided surgery with the radiolabeled L19 antibody.

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