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Neo-angiogenesis in locally advanced squamous cell head and neck cancer correlates with thymidine phosphorylase expression and p53 nuclear oncoprotein accumulation.

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Source

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Abstract

Thymidine phosphorylase (Th.P) is an angiogenic factor shown to induce endothelial cell migration and proliferation. On the other hand, loss of wild type p53 function leads to down-regulation of thrombospondin-1, an inhibitor of angiogenesis. In this immunohistochemical study we investigated the intratumoural angiogenesis and thymidine phosphorylase (Th.P) expression in paraffin-embedded bioptical material from 104 locally advanced squamous cell head and neck cancers. The nuclear accumulation of mutant p53 protein and the cytoplasmic expression of bcl-2 protein was also assessed. High vascular grade was observed in 56% and high Th.P tumour cell reactivity in 48% of cases. High microvessel score was associated with an increased percentage of cancer cells expressing thymidine phosphorylase (P = 0.001). Increased p53 nuclear accumulation also correlated with high vascular grade (P = 0.001). High histological grade and absence of bcl-2 overexpression were associated with lymph node involvement (P = 0.002 and P = 0.02 respectively). No correlation of clinically detected lymphadenopathy with angiogenesis and p53 was observed. We conclude that intense neo-angiogenesis in locally advanced squamous cell head neck cancer is a frequent event, which is associated with nuclear p53 accumulation and thymidine phosphorylase overexpression.