Study of MYB-NFIB chimeric gene expression, tumor angiogenesis, and proliferation in adenoid cystic carcinoma of salivary gland

Junya Ono, author

Abstrak

ABSTRACT
Adenoid cystic carcinoma (ACC) is one of the common malignant tumors in salivary glands, and the clinical prognosis is poor with frequent distant metastasis which may lead to death. Expression of the MYB-NFIB chimeric gene in ACC has been reported recently. MYB is an oncogene with transcription regulating functions, and NFIB encodes nuclear transcription factor although detailed functions are unknown. This study investigated whether MYB-NFIB chimeric gene expression affects tumor angiogenesis and proliferation in salivary gland ACC. In 26 salivary gland ACC cases, MYB-NFIB chimeric gene expression was analyzed by RT-PCR and direct sequencing. Immunohistochemical studies for CD31, vascular endothelial growth factor (VEGF) and Ki-67 were performed. Tumor angiogenesis was evaluated by blood vessel (CD31-positive) density and tumor proliferation by Ki-67 labeling index, and the relationship with MYB-NFIB chimeric gene expression was analyzed. MYB-NFIB chimeric gene expression was detected in nine of 26 ACC cases. Blood vessel density was significantly higher in chimeric gene-expressing cases compared to non-expressing cases. VEGF score tended to be higher in chimeric gene-expressing cases than in non-expressing cases, while Ki-67 labeling index was not significantly different. The number of chimeric gene-expressing cases increased with age, peaking in the sixties age group and declining thereafter, while the number of non-expressing cases increased with age continuously. In ACC, blood vessel density was significantly higher in MYB-NFIB chimeric gene-expressing cases compared to non-expressing cases, which may be due to higher VEGF production capability. MYB-NFIB chimeric gene expression may also be related to the onset age of ACC.