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Cyclooxygenase-2 expression in Primary Sebaceous Carcinoma of the Eyelid.

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Purpose: Sebaceous carcinoma (SC) of the eyelid is a very unusual and aggressive neoplasm. Moreover, the delay in the correct diagnosis combined with the lack of an effective and innovative treatment collaborates for SC poor outcome. Consequently, a better understanding about the molecular mechanism in the role of SC carcinogenesis is needed to open up new methods and opportunities for modern therapies. Cyclooxygenase-2 (Cox-2) is an enzyme that is induced in various cell types by oncogenes, mitogens, inflammatory cytokines, growth factors and UV radiation. Recently, there are relevant evidences that COX-2 is related with the carcinogenesis mechanism by converting pro-carcinogens to carcinogens, modulating inflammation and immune-suppression, stimulating tumor growth, inhibiting apoptosis, promoting angiogenesis and contributing for tumoral invasion and metastasis. Additionally, COX-2 expression has been extensively studied in several carcinomas such as Colorectal, Breast, Pancreas and Prostate. However, little is known about COX-2 expression in SC. The objective of this study is to verify if COX-2 is expressed in Primary Eyelid Sebaceous Carcinoma. Methods: 34 formalin-fixed paraffin-embedded SC specimens were collected from The Henry C. Witelson Ophthalmic Pathology Laboratory at McGill University. Immunohistochemical staining was performed in all cases using a monoclonal mouse antibody against COX-2 (Clone COX229). Two independent pathologists reviewed all slides to determine the intensity and pattern of COX-2 immune-expression. Results: 29 specimens (85%) showed COX-2 positive staining. Within these 29 positive cases, strong staining intensity was observed in fifteen (52%), moderate staining intensity in eight (27%) and weak staining intensity in six cases (21%). Moreover, in only one case there was focal COX-2 positivity (COX-2 expression in 20% of the cells); in the remaining positive cases, it was observed diffuse COX-2 staining (COX-2 expression in more than 70% of the cells). Conclusion: Most of SC specimens studied revealed moderate to strong and diffuse COX-2 expression. These findings prompt future studies to possibly correlate the SC COX-2 expression and the applicability of anti-COX-2 medications as an adjuvant treatment for this tumor.