Immunohistochemical expression of cyclooxygenase-2 (COX-2) in equine melanomas

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1. Introduction

Equine melanomas present an uncommon benign behavior in comparison to other species, with low invasiveness and metastatic rates. However, tumoral mass growth is usually a concern that can have life-threatening consequences.

COX-2 is related to pathologic conditions such as oncogenesis promoting neoplastic cell proliferation, invasion and metastasization.

The aim of the study was to evaluate COX-2 immunohistochemical expression in equine melanomas.

2. Methods

38 equine melanomas were processed by immunohistochemistry to COX-2 and classified by extension of labelled cells in 0) negative; 1) 1-5%; 2) 6-20%; 3) 21-50%; 4) >50% and intensity of labelling in 0, 1) weak, 2) moderate, 3) strong. A final score was calculated by multiplying the extension by intensity of labelling with ≤6 being classified as weak and >6 as strong expression of COX-2.

3. Results

Accordingly to the final score, 27.8% of melanomas had high COX-2 expression (>6) and 72.2% had low expression (≤6). Regarding extension of labelling 15.8% presented a score of 4; 50% of 3; 18.4% of 2; 5.3% of 1 and 10.5% of 0. Regarding intensity 21.1% were scored as 3; 28.2% as 2; 39.5% as 1 and 10.5% as 0.

4. Conclusions

The overall low COX-2 expression in horses is in accordance with biological behavior of these tumors. Authors suppose that low levels of COX-2 are contributing for the typical mass growth of equine melanoma instead of contributing to invasiveness that is related to high COX-2 levels.

5. Clinical relevance

COX-2 selective nonsteroidal anti-inflammatory drugs could be a possible therapeutical approach for dermal melanomas/melanomatosis that are achieving concerning dimensions and invasiveness and that can make difficult a future surgical excision. NSAID will act by reducing the proliferation rates and the mass growth.

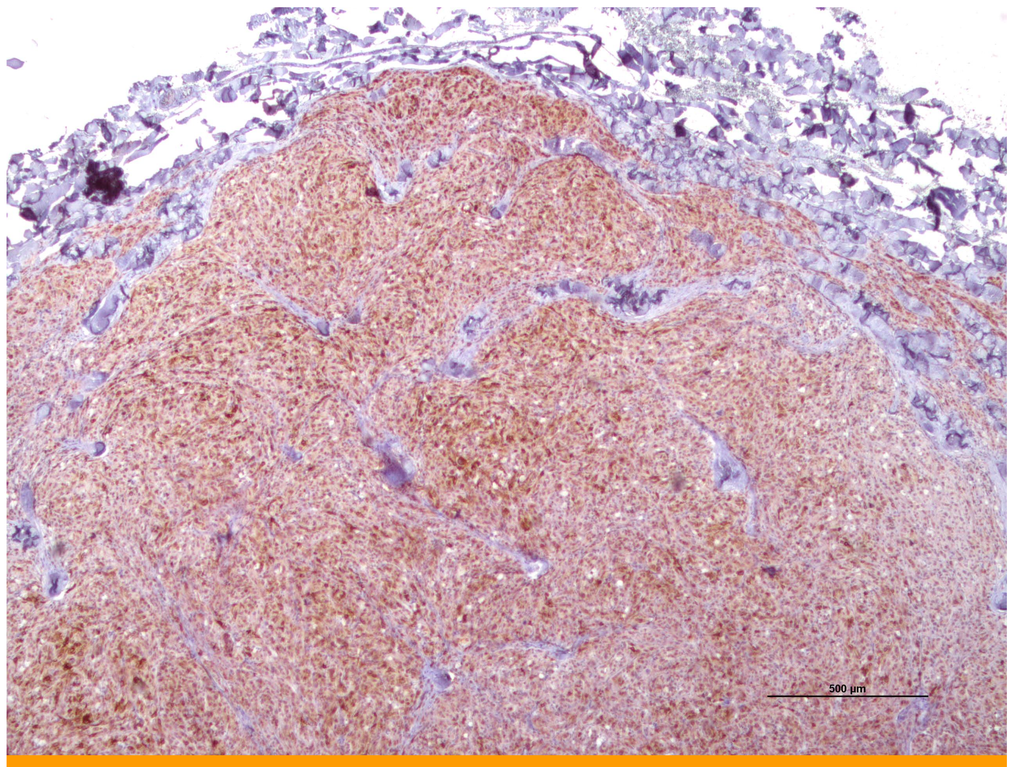

Figure 1. Immunohistochemistry COX-2. Extension 4, Strong intensity, cytoplasmatic location (brown staining)

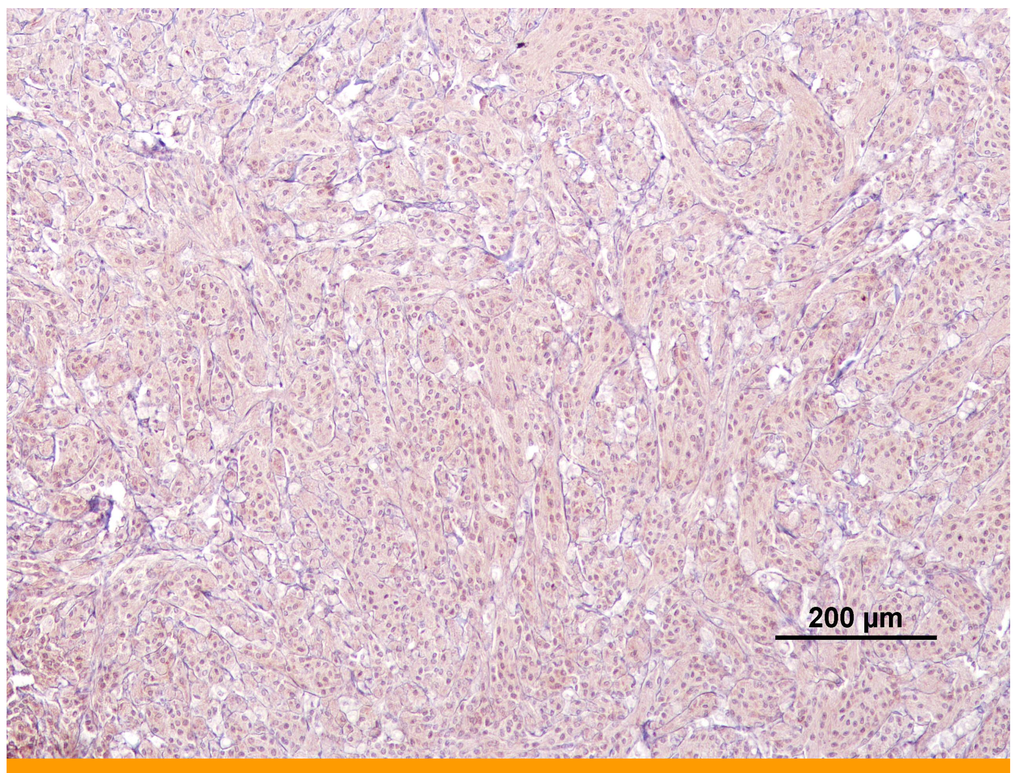

Figure 2. Immunohistochemistry COX-2. Extension 3, Moderate intensity, cytoplasmatic location (brown staining)

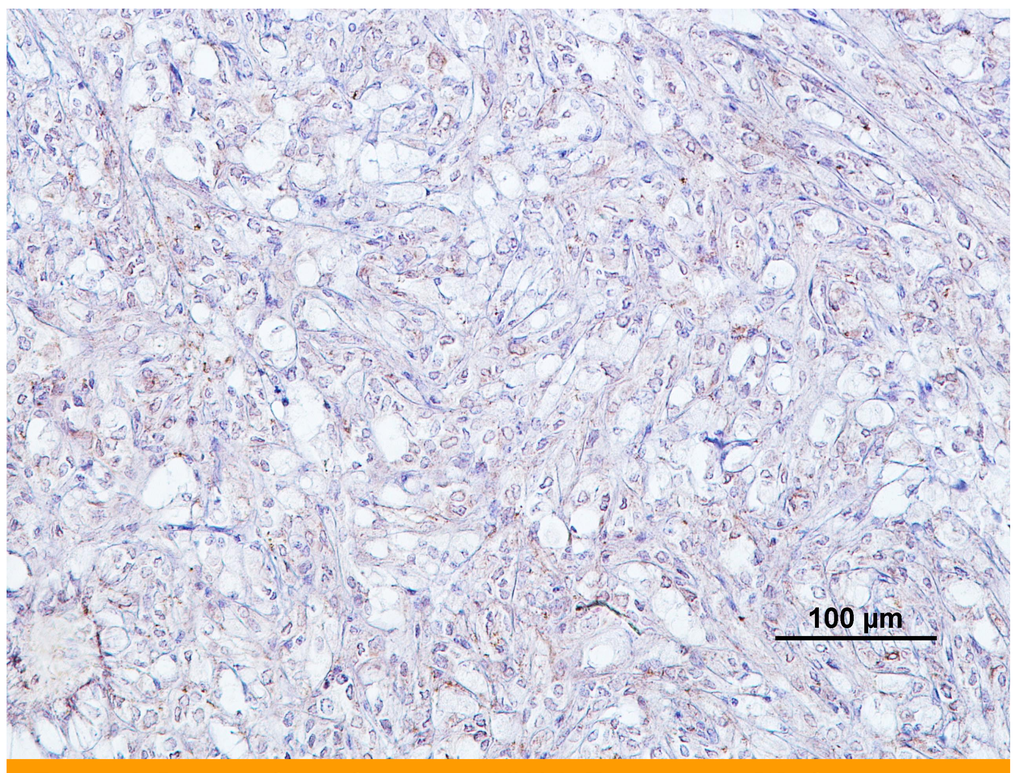

Figure 3. Immunohistochemistry COX-2. Extension 2, Weak intensity, cytoplasmatic location (brown staining)

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