Pathomorphological and immunohistochemical study of selected markers of tumour cell proliferation in equine sarcoids

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Abstract

The purpose of the study was a pathomorphological and immunohistochemical analysis of tumour cells and connective tissue in equine sarcoids. Investigations were performed using histopathological, ultrastructural, immunohistochemical (PCNA, p53, cytokeratin, vimentin) and histochemical (Ag-NORs) methods. The study was conducted on 50 sarcoids originating from 36 horses and classified as occult, verrucous, fibroblastic and a mixed type of sarcoid based on their clinical appearance. Most of the tumours were located on the girth (30%), neck (24%), head (12%), and legs (12%). The average age of the horses at the first clinical examination was 5.7 years. The sarcoids occurred on the skin of mares (61%), geldings (31%) and stallions (8%), the predominant was Wielkopolska breed (41%) and mixed breeds with Wielkopolska breed (41%). The predominant colour was bay (80%). The data showed that the presence of characteristic, microscopic features was variable but it was not consistent enough to allow differentiation of the clinical types based on histopathology. PCNA expression was not characteristic for the clinical type of sarcoid but it appeared to be a useful tool for the determination of the biological activity of the tumour and the probability of its recurrence. No relationship was found between AgNORs and cell proliferation. The study demonstrated the presence of p53 positive cells in the epidermal and fibroblastic portions. Numerous p53-positive cells were observed in the sarcoids and tended to recurrence. The staining for cytokeratin and vimentin makes the diagnosis of tumour easier. The immunohistochemical studies of PCNA, and p53 are of great significance to the prognosis.

Key words: sarcoid, p53, PCNA, AgNORs, cytokeratin, vimentin

Introduction

Sarcoid is a locally invasive cutaneous tumor of horses that does not metastasize to remote organs (Ragland et al. 1970, Marti et al. 1993), and rarely occurs in regional lymph nodes (Carr et al. 2001b). It often appears in the form of numerous tumours in a single horse and demonstrates a tendency to reoccur after their surgical excision (Ragland et al. 1970, Baker and Leyland 1975, Marti et al. 1993). Occasional spontaneous regressions of the tumour have also been reported (Ragland et al. 1970, Broström et al. 1988, Broström, 1995). Usually, sarcoi...