

Pseudomesotheliomatous Epithelioid Angiosarcoma in One Dog: a Pleural Lesion that Mimes Malignant Pleural Mesothelioma

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SUMMARY

The pleural surface is often involved in neoplasm that have metastasized from other organs, especially from pulmonary tumors by rupture of visceral pleura and seeding of pleural cavity. Mesothelioma seems to be the only primary tumor of the pleura. Regarding mesothelioma, this is a rare neoplasm of thoracic, pericardial, and peritoneal mesothelium being most commonly encountered in calves. In most cases, mesothelioma is formed by two components, a cellular component, which structurally and functionally consists of epithelial and endothelial cells of mesodermal origin. The second component is connective vascular tissue, whose structure includes fusiform cells, collagen fibers and capillaries (1).

This is a case presentation of a diffuse pleural tumor that mimes malignant pleural mesothelioma in one 13 years old German Sheppard female dog. The subject had been presented to the clinicians due to some respiratory disturbances with sanguinolent pleural effusion in both hemithorax. The necropsy revealed large quantities of sanguinolent exudate in thorax (about two liters) associated with diffuse thickening of the parietal pleura. Excepting this, there were obvious some small polypoid and pedunculated gray-reddish lesions attached to the parietal pleura. Histologically, the general features of the tumor didn't indicate mesothelioma but a very rare type of angiosarcoma (pseudomesotheliomatous epithelioid angiosarcoma) recently described only in humans (2). The tumor was characterized by diffuse thickening of the parietal pleura that presents polymorph endothelial cells generating numerous microvessels. The polypoid structures of the tumor consist of numerous endothelial tumoral cells that generate microvessels. Interestingly there were identified some endothelial cells that have epithelioid feature mimicking mesothelial cells. These polygonal epithelioid cells show rudimentary vascular differentiation. Some of the poorly differentiated epithelioid-like endothelial cells generate some papillary projections into the vessels' lumen, or are free into some tumoral vessels indicating micrometastasis. The neoplastic epithelioid-like endothelial cells are organized in some papillary intravascular structures or they are disposed in solid clusters, tumoral cells showing large vesicular nuclei with occasional prominent nucleoli and abundant acidophilic cytoplasm. Excepting the part of the tumor that indicate diffuse pseudomesotheliomatous (epithelioid) angiosarcoma, there were identified some limited zones with fibrosis of the parietal pleura associated with some large non-tumoral vessels. At the surface, these non-tumoral areas were covered by mesothelial cells comparing with tumoral part of the pleura where mesothelial cells were present only here and there.

We conclude that pseudomesotheliomatous angiosarcoma should be added to the list of pleural tumours capable of simulating malignant mesothelioma, this case being (according to our knowledge) the first one described in veterinary canine literature.

1. Baba A.I., Catoi C., (2007) Comparative oncology, Romanian Academy Ed., 224-226.
2. Fletcher C.D.M., (2007) Diagnostic histopathology of tumors, Pub Elsevier, vol 1, 209-214.