

SPONTANEOUS PULMONARY ADENOMAS IN LABORATORY MICE. Streber-Jimenes Ma. De la Luz ¹, León-Contreras Juan Carlos ² (1)Depto. de Investigación Experimental y Bioterio, (2) Patología Experimental y Microscopía Electrónica, Instituto Nacional de Ciencias Médicas y Nutrición Salvador Zubirán, Vasco de Quiroga No. 15 esq. San Fdo., Col. Secc. XVI, Tlalpan, C.P. 14000, México, DF. mstreberj@yahoo.com, jleon@correo.unam.mx

Introduction: Primary neoplasms of the lung are common in aged animals of most strains of laboratory mice. Lung tumors could be found in animals between 12 and 18 months of age. Strains like A, Swiss and BALB/c have a high incidence, but C57BL/6 seems to be resistant. The most common primary lung tumors in mice are bronchioloalveolar tumors that arise in the distal parenchyma. Other tumors like squamous cell, adenosquamous carcinomas and neuroendocrine tumors are extremely rare in mice. The purpose of this study is inform the characteristics of 22 mice cases that were found in the diagnostic files from the Veterinary Diagnostic Laboratory between 1997 and 2004. Cases summary: The lungs with tumors were processed for routine histological methods and some samples were processes for transmission electron microscopy and observed in a Zeiss ME-10 electron microscope.

The results are shown in Table 1.

Case Number	Strain	Sex	Side
1	BALB/c	Male= M	Left= L
2	BALB/c	Female= F	L
3	CD1	M	Right= R
4	C57BL/6	F	?
5	CD1	F	R
6	C57BL/6	F	R
7	NIH	F	?
8	C57BL/6	M	R
9	CD1	F	?
10	BALB/c	M	R
11	CD1	F	L
12	CD1	F	R
13	CD1	F	L
14	CD1	F	R
15	CD1	F	R
16	CD1	F	R
17	CD1	F	R
18	C57BL/6	F	R
19	CD1	F	R
20	CD1	F	L
21	BALB/c	F	R
22	CD1	F	R

In 7 years we found 22 cases. Most of them were the CD1 strain and females. The right side predominate over the left. Gross appearance: they were pearly white, well demarcated spherical tumors, visible beneath the pleural surface. The majority measure 2-5 mm (case 5 measure 14 mm). They were typically firm to rubbery, solid and homogenous. Microscopic features: cell population were homogenous, individual cells were spherical with hyperchromatic nuclei. The cytoplasm were eosinophilic with characteristic lamellar bodies represented by fine vacuoles. The histological pattern were trabecular with anastomosing cords forming solid nests. Cell cords were separated on one side by basal alveolar capillaries and sparse reticulin fibers. Mitoses were sparse. No inflammatory cells were seen. Ultrastructure: the cells resemble the normal alveolar cells type II. They contained lamellar bodies, large mitochondria and prominent Golgi zones. The luminal surfaces beared central microvilli, which were covered laterally by citoplasmic flaps of adjacent tye I cells, as in normal lung. In the literature, the tubular nuclear inclusions have been described, but in our cases we did not saw them.

Discussion: the prevalence of this tumor is referred as high in male mice than female, we observed the opposite. In previous studies they report that the age is an important factor. In our cases the mice were over 12 months but the exact age was not recorded. This type of tumors could be used as a spontaneous model of human adenocarcinoma of the lung, but studies about how genes regulate lung tumor susceptibility should be done.

References:

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