

Leiomyosarcomas in two wild captured meadow voles (*Microtus pennsylvanicus*) associated with the strobilocercus (*cysticercus fasciolaris*) of the cestode *Hydatigera taeniaeformis*

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Forty-two wild free-ranging meadow voles (*Microtus pennsylvanicus*) were live-trapped in Larimer County, on the out skirts of Fort Collins, Colorado, USA, and placed in captivity at the National Wildlife Research Center animal facilities, United States Department of Agriculture, Fort Collins, Colorado in 2013. In March 2013 one of the voles died and was necropsied. This vole had a neoplasm in the liver which was diagnosed as a leiomyosarcoma associated with a strobilocercus (*cysticercus fasciolaris*) of the cestode *Hydatigera taeniaeformis* (syn. *Taenia taeniaeformis*). This diagnosis was confirmed by applying multiple special stains to this tumor which included Masson's trichrome, Verhoeff-van Gieson, Alcian Blue pH 2.5, Periodic acid-Schiff and two immunohistochemical stains (smooth muscle actin and desmin). The following week the remaining 41 meadow voles were humanely euthanized and necropsied. Of these 41 voles five (prevalence of 12%) had strobilocercus of *H. taeniaeformis* and one of these meadow voles (2%) also had a neoplasm that was diagnosed as a leiomyosarcoma using the same methods as described above.

Neoplasia is rarely associated with parasitic infections. Fibrosarcomas associated with the strobilocercus of *H. taeniaeformis* are well documented in free-ranging and laboratory rats (*Rattus norvegicus*). However, to the knowledge of the authors this is the first time leiomyosarcomas (a tumor of smooth muscle) has been documented to be associated with the strobilocercus of *H. taeniaeformis* in wild free-ranging rodents. The pathogenesis of these tumors is most likely the result of the chronic inflammation and inflammatory mediators associated with the zone of inflammation mounted by the host around the cyst wall of the strobilocercus.