DIAGNOSING RANAVIRUS IN REPTILES AND AMPHIBIANS: PATHOLOGY AND TESTING

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ABSTRACT

There is increasing awareness that emerging infectious diseases are impacting herpetofauna worldwide. Consequently, there is a need to develop diagnostic tests that accurately identify disease-causing agents. Indeed, many of the diseases affecting reptiles and amphibians can cause similar lesions, requiring pathogen-specific testing to identify the etiology. Ranaviruses have been identified as the etiologic agent in amphibian and reptile mortality events. Routinely, biologists and diagnosticians use non-specific sample collection for ranavirus testing, including blood, cloacal or oral swabs, toe or tail clips, or liver or kidney samples. Although these sample types can yield rewarding results in amphibians, this is often not the case for chelonians. Indeed, blood and cloacal swabs often test negative, even in turtles that died from ranaviral disease. In turtles, it is necessary to test the specific lesions to verify the etiology. Common lesions observed in amphibians are hemorrhages and necrosis of the liver and kidney. In chelonians, lesions associated with ranavirus infection are typically described in the skin, shell, GI tract and oral and nasal cavities, and typically are collected from dead individuals for diagnosis. Although non-lethal sampling techniques have been identified in amphibians, we have not identified a reliable technique for routine surveillance of ranavirus in reptile populations. Without an effective means for surveillance, monitoring tends to be retrospective following a disease outbreak. Thus the conservation of threatened and endangered chelonians may be severely impacted by this emerging pathogen.

LITERATURE CITED
