
TESTICULAR NEOPLASIA IN A WHITE RHINOCEROS (*Ceratotherium simum*): FERTILITY AND ASSISTED REPRODUCTIVE MEASURES TO MINIMIZE GENETIC LOSS

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Abstract

Reproductive assessment has become an established method to evaluate breeding fitness in male white rhinoceros (*Ceratotherium simum*). Ultrasonography and electroejaculation are routinely used to characterize the reproductive organs and evaluate semen quality. Despite reported increased connective tissue in the testicular parenchyma in aged males, no substantial reproductive disorder has been described to date that could potentially compromise male fertility. Reduced semen quality and limited breeding activity were mostly accounted to mate choice problems and social stress of the males in captivity.

This case report describes diagnosis of a unilateral testicular neoplasm in a 20-yr-old white rhinoceros. Ultrasonography characterized the accessory sex glands and left testis with dimensions as seen in male rhinos with good semen quality. In the right testis, neoplasia compromised one third of the testicular volume. The abnormal structure was solid, with a well-defined border and moderate blood flow. Histopathology confirmed the neoplasia as a seminoma. Adjacent zones of tissue necrosis and mineralization suggested a malignant character of the neoplasm. However, despite the size and invasiveness of the mass, the collected ejaculate contained appropriate concentration and high percentage of motile sperm. Sperm was cryopreserved in 0.5 ml straws using a DMSO egg yolk extender before further neoplastic growth might have ceased spermatogenesis. Post thaw motility of >50% demonstrated that the testicular neoplasia in this individual did not preclude the production of good quality semen as it had been detected at an early stage. This case of a testicular neoplasia describes that reproductive lesions in male rhinoceros may be an underlying cause in single individuals for absent reproductive success.