Failure of anti-Müllerian hormone to diagnose cryptorchidism in a pot-bellied pig

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Cryptorchidism is common in domestic swine with a prevalence of 12%.1 Most production pigs are castrated at a very young age and issues may arise if a cryptorchid animal is not identified. Little research has been done on endocrine diagnosis of cryptorchidism in swine. The objective of this case report is to determine if anti-Müllerian hormone (AMH) could be used as a diagnostic marker for cryptorchidism in a companion pot-bellied pig.

A one-year-old castrated pot-bellied pig was presented to the Veterinary Teaching Hospital at WSU with a history of increased sexual behavior including mounting, aggressiveness and the typical boar odor. The owner reported that a diagnosis of right unilateral cryptorchidism was made at birth. The left descended testicle was removed at three weeks of age by the breeder. The cryptorchid testis was reportedly surgically removed at five weeks of age at a veterinary clinic. On presentation all physical examination parameters were normal. The prepuce and penis were normal and no testicles were visible or palpable externally. An abdominally located testicle was visualized on transabdominal ultrasonography. The owner declined surgical removal of the abdominal testis. To study the endocrine profile in this case, blood samples were collected and sent to an endocrinology laboratory for testosterone, inhibin and AMH assays. Serum samples from a known castrated pot-bellied pig were submitted as a negative control. The hormone panel revealed high testosterone (1277.3 pg/mL) and high inhibin (1.6 ng/mL) consistent with the presence of testicular tissue. Anti-Müllerian hormone was low and equal in both the cryptorchid and control pig (0.01 ng/mL).

Contrary to other species, AMH was not helpful in the diagnosis of cryptorchidism in this pot-bellied pig. Possible reasons for this finding are low endogenous AMH in postpubertal boars or species incompatibility for the equine AMH kit that was used. Unpublished data from the laboratory used in this case show that AMH levels are elevated in prepubertal cryptorchid pigs.2 Further studies are needed to determine the normal AMH levels at the different stages of sexual maturity in swine.

Keywords: Anti-Müllerian Hormone; endocrinology; sexual behavior; pot-bellied pig

References
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