



IS IT A COLT OR FILLY (or both)?

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Even as a newborn foal this horse was noticeably different. Gender is immediately recognized in most newborn foals upon glancing under the tail for the presence or absence of a vulva. The appearance of the external genitalia of this foal drew plenty of glances and generated lots of opinions. The structures in the perineal area beneath the tail of this foal looked mostly like that of a filly, but an enlargement at the bottom of the vulva looked distinctly like the glans penis of a colt.

As an adult, the horse was stocky and had a large chest and neck. The behavior was primarily that of a stallion, as the horse would react to the presence of mares in heat by exhibiting a flehmen response (curling the upper lip while extending the neck upward) and vocalizing. However, a mammary gland was present in the ventral abdominal area instead of a prepuce and scrotum. Examination of the perineal area under the tail revealed a vulva with what appeared to be an enlarged clitoris or glans penis at the bottom edge. The internal reproductive organs of the horse were subsequently examined by palpation and ultrasonography. A pair of gonads that looked like testes was identified in the region of the abdomen that normally housed the ovaries and no uterus or cervix could be detected.

Laboratory tests were then performed. It was determined that the horse had modest levels of testosterone in its blood and that the testosterone levels increased after administration of the hormone human chorionic gonadotropin (hCG). Finally an analysis of the chromosomes, or karyotype, was performed. It was the final proof that the horse was genetically a male.

The horse in question is an intersex, or more specifically a male pseudohermaphrodite. This is a condition in which an individual has the genetics and gonads of a male, but exhibits incomplete masculinization. Genetically, the horse was a male since it had an XY set of sex chromosomes. Cryptorchid testes were present and they produced sufficient testosterone to cause stallion-like behavior once the horse reached puberty at about 18 to 20 months of age. The primary problem for this colt was that normal differentiation of the external genitalia did not occur. An androgen (testosterone-like hormone) called dihydrotestosterone or DHT is normally responsible for conversion of the external genitalia of the male fetus into a penis and scrotum. In this horse, either the level of DHT was insufficient or the tissue was unable to fully respond to the stimulation by the DHT that was present. As a consequence, the external genitalia developed somewhat ambiguously in between that of a filly and a colt. Since

physiologically this horse was essentially a cryptorchid stallion, it was recommended that the abdominal testes be removed due to the potential for unpredictable aggressive behavior. In addition, cryptorchid stallions are also at risk for medical conditions such as torsion of the spermatic cord and testicular tumors.

Intersex conditions are relatively rare in the horse. A true hermaphrodite has both testicular and ovarian tissue present in the same individual and is an exceedingly rare condition in the horse. The male pseudohermaphrodite-type of intersex noted in this horse is the one that occurs most often. The only physical sign of a developmental abnormality in this horse was an enlarged clitoris. Some intersex horses have a partially developed penis that can gain an erection in the presence of a mare in heat.

Intersex horses are sterile, but are otherwise healthy animals. They can make good performance or companion animals, but can be a little awkward to talk about around a campfire.



Photo of the vulva of a male pseudohermaphrodite



Photo of the distended penis of another male psuedohermaphrodite