Pseudohermaphrodite

Submitted by Dan Van Arsdall on Wed, Jul 6 @ 9am

Description:

The term pseudohermaphrodite is used to describe the intersex condition in which an animal has gonads (ovaries or testicles) of one sex but external genitalia that resemble the opposite sex to a varying degree. Pseudohermaphrodites are described as being either female or male depending on the type of gonads present. The male pseudohermaphrodite (Often referred to as suffering from testicular feminization) is much more common than the female pseudohermaphrodite. A male pseudohermaphrodite is an animal with testicular tissue within the abdomen but with some form of female external genitalia. Overall, pseudohermaphrodism is rare in cattle and is not associated with any other congenital defects. However, pseudohermaphrodism is thought to be an X-linked trait in cattle.

Etiology:

The cause of pseudohermaphrodisim in cattle is often not specifically identified because there are a number of different causes. In the cast of male pseudohermaphrodism (sometimes referred to as testicular feminization), the causes of the defect include translocation of the Y chromosome, chimerism, sex chromosome aneuploidy, and gene mutation. Most of the time, these are random events. It is possible that male pseudohermaphrodism is inherited as an X-linked trait in cattle. Male pseudohermaphrodites have the normal XY chromosomal arrangement. In the case of female pseudohermaphrodism, the defect is the result of a gene mutation, which is inherited as an autosomal recessive trait.

Symptoms:

A male pseudohermaphrodite is often mistaken for a heifer because it will have female external genitalia. The animal will often be identified as a male pseudohermaphrodite when it fails to show estrus. These animals will often exhibit bull-like behavior due to the testosterone being produced in the unapparent testicles. This has resulted in the term “buller” being applied to male pseudohermaphrodites.

Diagnosis:

Classification of intersex conditions such as pseudohermaphrodisim requires anatomical, chromosomal, and endochrinologic examination. Often, the anatomical examination is carried out during a post mortem. It is possible to misclassify an animal as a freemartin (infertile female twin of a male calf) if the diagnosis is based exclusively on physical findings. On physical examination, a male pseudohermaphrodite will often have a shortened vagina, the cervix will be absent, and the uterus will be small or absent. There will be testes where the
ovaries are normally found.

**Prevention:**

It is difficult to prevent pseudohermaphroditism because it often occurs as a result of random genetic mutation or chromosomal translocation during development. Given that pseudohermaphroditism is thought to be an X-linked trait, it is best to avoid breeding any animal that produces a pseudohermaphrodite (the cow contributes one X chromosome to a calf and the bull contributes either an X or a Y chromosome).

**Treatment:**

There is no treatment for the pseudohermaphroditic condition.

**Sources:**
