Biography:
Dr. Colin Palmer is an Associate Professor of Theriogenology (Animal Reproduction) at the Western College of Veterinary Medicine. Originally from Nova Scotia, Dr. Palmer worked in mixed practices in Ontario and British Columbia and has owned/operated a practice in Saskatchewan. Dr. Palmer along with his wife Kim and children Lauren, Emily and Carter run a herd of purebred Red Angus cattle under the KC Cattle Co. name.

A Breeder's... Veterinary Perspective

Warts on Your Bull's ____

A Nasty Little Problem

Penile warts on a bull should never be anything to lose sleep over - they are really nothing more than a nasty little problem or a minor inconvenience. Trouble is - if your bull sale is next week there really is not enough time to deal with the warts and you may be forced to remove him from the sale or risk selling a Decision Deferred bull. Fortunately, cattle warts are not contagious to humans and with minor surgical intervention and a tincture of time even the ugliest mess of penile warts can be resolved allowing you to save an otherwise valuable bull.

Warts (papillomas) are caused by a virus called papillomavirus (PV). Papillomaviruses are specific to each animal species – humans, cattle, even rabbits; with almost no cross-species infection. In cattle there are at least 6 distinct types. Most cause benign infections of skin cells; however, one – bovine PV type 4 (BPV-4), infects the cells of the upper gastrointentinal tract and may lead to the development of cancer in cattle consuming bracken fern. Human PVs (HPVs) vary in their presentation too. The vast majority are nothing more but nuisance growths on the skin yet a few have been linked to the development of cancer. Most notable is the now solidly proven link between HPV-16 and 18 in the development of cervical and other genital cancers. The only cross-species infection that is known of is that of equids (horses, donkeys, zebras) with BPV- 1 and BPV-2 shown to have a causal link to the most common skin tumour of horses – sarcoids: a non-malignant, scar-like growth on the skin. The bovine virus will not replicate in the horse, but causes changes within cells deeper within the horse's skin which may lead to the development of a sarcoid.

Penile warts in bulls are exclusively caused by BPV-1. Bovine PV-1 also causes warts on the nose and teats which probably plays a role in the spread as skin to skin contact, or skin contact with contaminated facilities and equipment is the primary means of disease transmission. Bulls, especially young ones, spend a lot of time riding, promoting the spread of the virus from bull to bull. Bovine PV-1 infection is not associated with cancer, sperm death or abortion and in nearly 20 years as a reproductive specialist I cannot find evidence that it will cause warts in the vagina or on the vulva of female cattle. Some believe that young bulls with warts will be reluctant to breed cows due to pain. In most cases, it is unlikely that bulls with normal libido will be deterred by minor pain associated with warts; more severe cases – perhaps pain could be an issue. Mounting and intromission can irritate and disrupt warts resulting in bleeding. Blood in the ejaculate will kill sperm.

Warts are most common in young animals less than 2 years of age and are very contagious. Finding warts on yearling bulls undergoing a breeding soundness examination is a frequent occurrence. Over the last couple of decades our industry has changed from the sale of 2-year olds to yearlings; therefore, the prevalence of warts may at first glance appear to be on the rise. If penile warts are a new problem in your young bulls then you should look to the potential for contact with young bulls from other outfits. Many herds will have no affected bulls, whereas some may have an occurrence rate as high as 15 - 20%. My own estimates of the prevalence of warts in bulls gathered from several sources and housed at test centres would be 1 to 2% in 2-year olds and 5 to 7% in yearling bulls.

The immune system is slow to respond to the papillomavirus despite the presence of very large warts producing large quantities of virus. This is because the entire lifecycle of all BPVs is restricted to the most superficial cells with little to no contact with immune cells. Animals with disrupted or bleeding tumours have a more substantial immune response as do animals undergoing natural regression of the warts. When animals are vaccinated with BPV proteins harvested from their own warts (autogenous vaccination) the immune system responds quickly and remains active for a long time. Preparing autogenous vaccines is not practiced nowadays because of the cost and risk of severe reactions in comparison to the benefit. In other words, given time the immune system will handle the warts, and at a much lower cost.

Small warts are easily removed chuteside by the veterinarian performing the breeding soundness evaluation. Larger masses or multiple tumours require much more time, but usually can be removed with patience. Most large and confluent penile warts appear worse than they are. Penile warts typically have a broad head and a much narrower stalk like a cauliflower. Warts around the urethra are more troublesome and may require catheterization so as to avoid significant damage. The blood supply to larger warts can be substantial so bleeding must be controlled. Vets try to remove as much wart as possible because recurrence may occur; however, it is likely that damaging warts and causing bleeding probably stimulates the immune system and leads to a more rapid resolution than if nothing were done at all.

Once warts are removed sexual rest for 2 to 3 weeks is a good idea. Severe cases where numerous warts have been removed should be rechecked and any regrowth removed. I would never, ever recommend slaughter of a young bull based solely on the presence of warts. Even the worst looking mess can be resolved even if it takes a couple of tries.