Condition: Scrotal hernia

Scrotal hernia in a commercial breed young pig – left scrotum enlarged to several times the size of the right testicle - Michigan State University

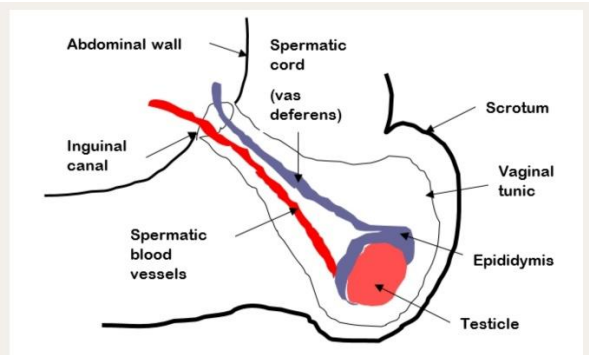

Diagram of the inguinal canal and scrotum

A scrotal hernia is where abdominal organs (usually intestines) protrude into the scrotum due to the inguinal canal opening being too large.

Symptoms: Enlargement of the scrotum due to a hernia. It can be just one side affected or can occur on both sides. Usually the condition is seen in young pigs from birth and up to about 4 months of age.

Cause: The cause is thought to be due to natural openings in the inguinal canal that have not formed correctly. The hernia develops when there is an abnormally large opening in the inguinal canal allowing the abdominal organs to move into the area where the testicles are located.

Occurrence: Research has shown the frequency of scrotal hernias among the general pig population can vary between 0% and 15.7% (Vogt and Ellersieck 1990). The heritability of susceptibility to scrotal hernia development were estimated to be 0.29, 0.34, and 0.34 in Duroc-, Landrace-, and Yorkshire-sired pig groups, respectively (Vogt and Ellersieck 1990).

The true incidence of this problem in Kunekunes is unknown as it is not reported, but anecdotal evidence suggests that Kunekunes may have a similar incidence of scrotal hernias in many bloodlines.

There are a number of contributing factors that may influence the occurrence of scrotal hernias in Kunekune pigs:

- A relatively small gene pool from when the Kunekune was 'saved from extinction' (approx. 50 pigs in the 1980's).
- Inbreeding leading to a higher frequency of genetic based problems.
- Breeders being unaware of the genetic link to the occurrence of scrotal hernias, and their potential seriousness.

Once a scrotal hernia occurs, there is a risk that the hernia may strangulate (intestines in the hernia become twisted), which can cause illness and death. Though there is little specific data on this, one study showed a 15% mortality rate for affected pigs in the finisher and significantly lower growth rates than unaffected pigs (Straw et al. 2009). There is also research that shows that up to 50% of the commercial pigs that survive to reach slaughter weight can be condemned for peritonitis due to the problem (Keenliside 2006).

Surgery to correct the scrotal hernia is possible but it is not without risks and should include castration of the young Kunekune pig so that it can't be used for breeding.

Note that as the condition only really shows up in male pigs it is hard to determine if some sows are more prone to produce piglets with scrotal hernias, but as it is an inherited tendency it is quite likely that the sow genetics may contribute to the occurrence.

Recommendations:

1. Provide information on scrotal hernias to help Kunekune pig owners identify the condition.
2. Provide information on identifying heritable problems, and raising the issue with Kunekune breeders of the risks of inbreeding (which can increase the frequency of genetic problems).
3. Advise breeders not to sell boar piglets with scrotal hernias, and not to use breeding boars that have had close relatives or offspring with scrotal hernias.

Sources of information:

Diseases of Swine (10th Edition)

D W Vogt , M R Ellersieck **Heritability of susceptibility to scrotal herniation in swine;** *Am J Vet Res* 1990 Sep;51(9):1501-3.

Straw B, Bates R, May G. **Anatomical abnormalities in a group of finishing pigs: prevalence and pig performance.** *J Swine Health Prod.* 2009;17(1):28–31

Keenliside J. **Belly and scrotal ruptures (aka umbilical and inguinal hernias).** *8th Ann Swine Technol Workshop*. Red Deer, Alberta, Canada. 2006.