

Tanjung Reproductive Post-Mortem Report to Sabah Wildlife Department

“Tanjung” Male Sumatran rhinoceros (*D. s. harrissoni*)

Date of Death: July 12, 2006

Cause of death: Broken back from tree fall (pic. 1)

Post-mortem findings: Broken spine and internal injuries. Sever bloat (pic.2).

Reproductive post: August 21, 2006

Personnel: Drs. Schaffer, Thaya, Rosa

Location: Zoo Hospital

Reproductive post: Penis and testicles were removed intact from ventral abdomen and frozen until exam could be made of gross structures. Accessory glands were not included. Examiners were particularly interested in whether evidence of cyst or blockage of the epididymis would be evident since a previous testicular aspirate had demonstrated arrested spermatogenesis at the spermatid stage, no sperm were produced with electroejaculation with two attempts months past and ultrasound of a longitudinal swelling just caudal to the testicle revealed a fluid filled area. The swelling appeared to be independent of testicle and extended from the tail of the epididymis to half the length of the testicle. The swelling was not evident with observations earlier in the year on living animal. Bloat obliterated observation at the time of postmortem. Aspirate of testicle was made by IZW team during visit of October 2005.

Post mortem: bloating pressure was evident from protruding penis (pic 2). Both testicles in their tunics were dissected from skin and connective tissue of scrotum. Connective tissue of scrotum was edematous. No cysts were noted within connective tissue. Vaginal tunic was cut from inguinal to distal end vaginal tunic. All tissue was red from soaking in blood. Red fluid was in tunic cavity. No grossly visible sacs or cysts were associated with vaginal tunic or along vas, within or associated with epididymis or on parietal tunic or within testicle or epididymis of either right or left side. On both sides there appeared to be a constriction of the vaginal tunic about two cm from the distal end creating a sac similar in shape to the shape of the tail of the epididymis (pic 3,4,5) The epididymis was at the opening of the sac, but not in it, and would not reduce into it under pressure due to this constriction (picture 7). The tunic around the testicle was wrinkled longitudinally suggesting excessive expansion of the tunic. Surface of testicle was smooth throughout. Both left and right vas deferens coursed from tail of epididymis across caudal surface of testicle. Both sides demonstrated a brief section of coiling at level of spermatic plexus (picture 3). Picture 3 and 6 also demonstrates the epididymis- scrotal ligament (gubernaculum) extending from distal end of the epididymis to the distal end of the sac. This was evident both left and right.

Both testicles and epididymides were cross-sectioned and impression smears were made.

Measurements:

Right

Tunica Vaginalis – distal sac L 3.0 cm x W 2.0 cm

Tail of the epididymis L 3.4 cm x W 1.5 cm

Body epididymis L 9.0 cm x W 2.0 cm

Head epididymis L 3.0 cm x W 2.0 cm
Testicle L 8.0 cm x W 4.4 cm

Left

Tunica Vaginalis – distal sac L 3.5 cm x W 2.5 cm
Tail of the epididymis L 3.5 cm x W 1.5 cm
Head epididymis L 3.0 cm x W 2.0 cm
Body epididymis 8.5 cm x 1.5 cm
Testicles L 8.3 cm x W 4.6 cm

On all impression smears taken of testicle, head and tail of epididymis. High concentrations of normal sperm were present. (pic.8)

Picture 1



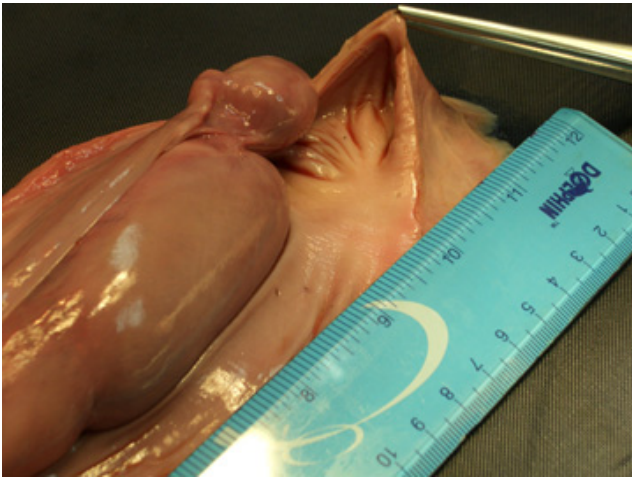
Picture 2



Picture 3



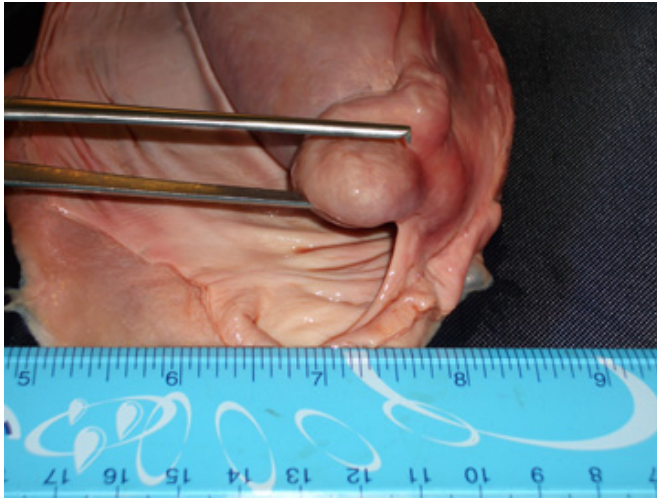
Picture 4



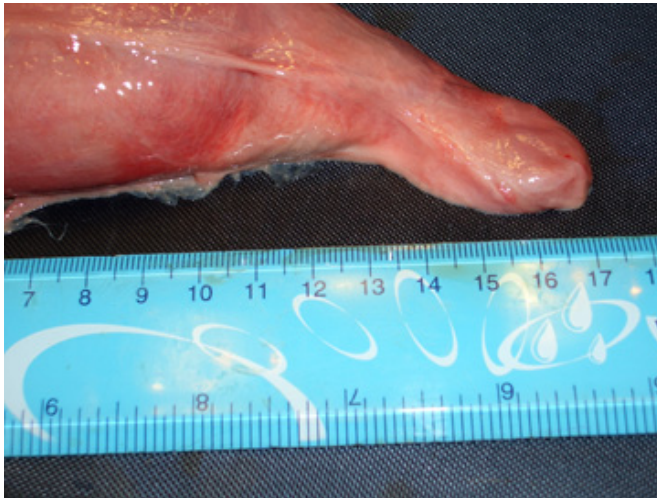
Picture 5



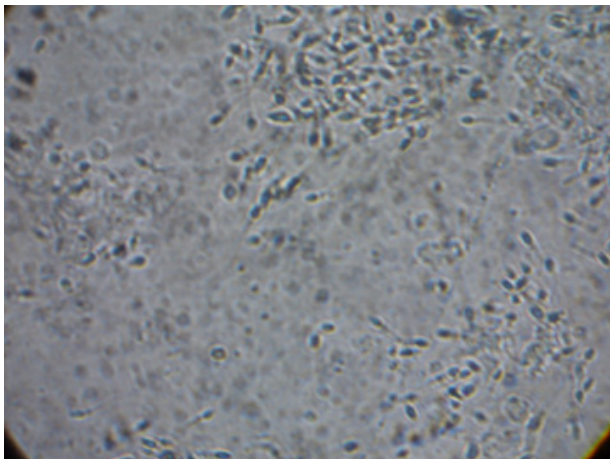
Picture 6



Picture 7



Picture 8



Picture 9



Discussion: Within the tissue provided from Tanjung reproductive system, no gross anatomical evidence indicated pathology (pic. 3-7). All structures were bilaterally symmetrical and having characteristics similar to other species of rhino. The distal constricted sacs were also symmetrical and contiguous with scrotal sac. Their structure suggested a manifestation of post-mortem shrinkage of the scrotum and not an abnormality. Fluid accumulations around the tail epididymis have been noted in other males (10-12 pictures). One of these males, Shah at Sungai Dusun, Malaysia had the same swelling above the testicles as Tanjung when he came into captivity. Shah's penis was swollen at the time and had to be treated. His ultrasound image also demonstrated the little tag floating in the fluid of the distal sac, which on post of Tanjung appeared to be the gubernaculum ligament. Another male Ipuh the now breeding male at Cincinnati Zoo had some accumulation just around epididymal tail. He was not eating at the time and losing weight.

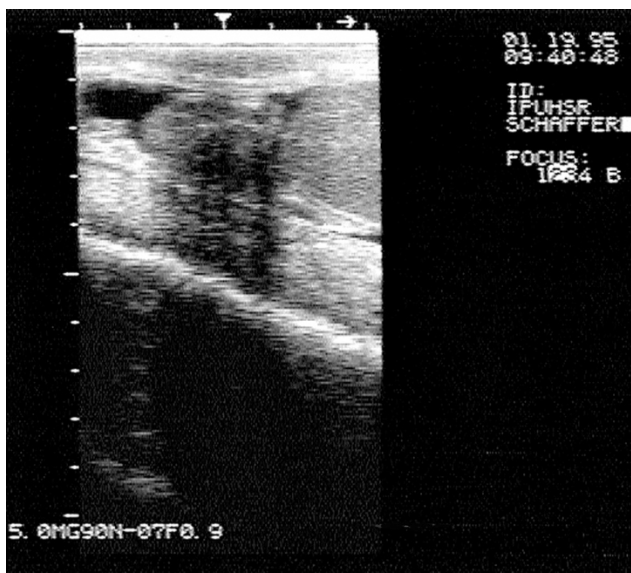
Tanjung also had some accumulation on ultrasound in '98 distally around the epididymal tail, but not around the body of the testicle. Tanjung had plenty of normal sperm when he died indicating his arrested spermatogenesis had resolved. Earlier observations suggesting a hydrocele had also resolved. Hydrocele are not know for causing infertility or arresting sperm production. They can cause an elevation in temperature in the testicle and indicate a problem such as trauma, infection or tumor. Tanjung was vigorously mating with a stump in the year of 2005 and then stopped, which could have caused the trauma (pic. 9).

Conclusion: Tanjung appeared to be an intact and vital male when he died.

Picture 10 Shah



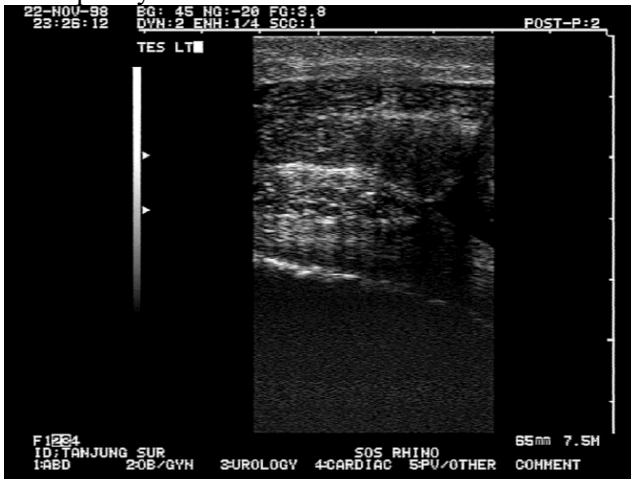
Picture 11 Ipuh



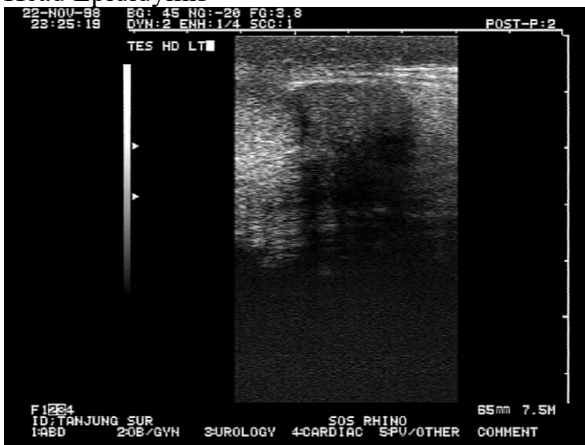
Picture 12 Series Tanjung
Tail Epididymis



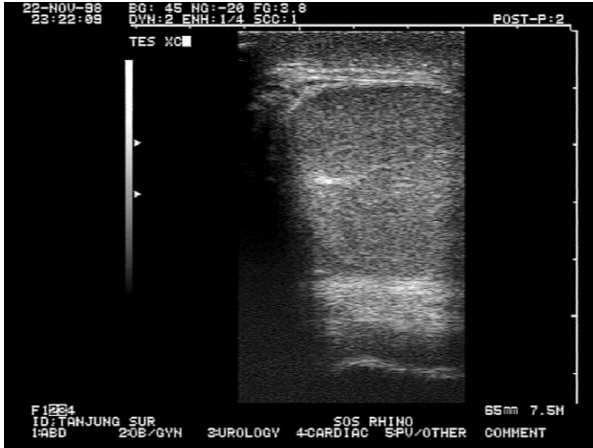
Tail Epididymis



Head Epididymis



Cross-sect Testicle



Gubernaculum

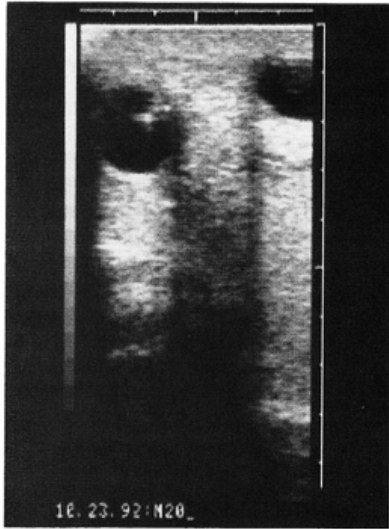


Figure 5. Epididymides of a Sumatran rhinoceros. **Left.** Bilateral nonechoic cross-sectional ultrasound images in association with the body of each epididymis. **Right.** Line drawing: NI = nonechoic image