

Attachment 1
Expert Panel: Manatee Papilloma Virus Conference Call Minutes

Manatee Papilloma Conference Call Notes April 14, 2004

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General Comments:

- It is acceptable to put manatees that are exposed to manatee PV back in areas where manatee PV is located/documented.
- Some PV have geographic restrictions (e.g., turtles in Hawaii)
- If we can show that lesions resolve themselves in the wild then it would be ok to release animals in that area where PV has been observed.
- Captivity is stressful, make sure facilities are not serving as hot spots for PV
- PV may not have the same type of “latency” as other viruses such as herpes
- Caution that ELISA may show positive for many animals; could have many “subtypes” of PV; there are downfalls with ELISA.
- If short term/long term effect is not lethal than this (PV) may not be worth the hype, however, it may just be the tip of the iceberg to what is happening in the environment.
- Could release exposed animals in other areas where they are not from (i.e., location where they were not rescued); let genetics mix as the population has already gone through a “bottleneck”; this should be done over keeping an animal in captivity.
- Should be screening continually for other diseases.
- Believe vertical transmission is unlikely, as compared to land animals.
- PV should not kill animals as long as other environmental stressors do not increase.
- PV has been in land animals for hundreds of years (e.g., cattle, coyotes, etc.) and has never been the cause of death.
- At this time literature and information reveal no concern over serious negative effects at a population level.
- Little evidence to show that PV is an emerging pathogen; it appears that it is not new or of diverse origin.
- Papillomatosis maybe an indicator or marker that a more serious health problem may be developing.
- If papillomatosis is revealed to be widespread, does not cause serious health problems by itself, or does not presage mortality due to some other cause, then concerns over releasing infected animals would not be warranted.
- Caution should be taken when developing vaccines with animals that have immunologic problems or testing the vaccine on healthy animals that will be applied to animals with other health problems.

Unanimous/Frequent Comments:

- Move animals out of the spring run at HSSP.
- Develop an ELISA to test for virus, antibodies, immunities; use pair titers for individuals.
- Must know/document epidemiology of the PV in Florida manatees; standardize surveillance.
- Can release “exposed” animals to areas where PV s known to exist.
- Would not release exposed animals to other areas outside of CR/HSSP until ELISA or additional information became available.
- Management plans should be based on some type of “exposure test”.

Recommendations:

- Monitor animals in the wild with PV (10-20) from various age classes, break down into Kaplan-Meier curves
- Compare manatee PV with the PV found in other cetaceans
- Exposed animals/animals with lesions should be moved to another facility to see if move/new environment will stress animal/reduce stress and change appearance of lesion or viral load; identify a quarantine period and add additional stress to see if lesions occur.
- Keep captive quarantine and keep “clean” facilities as well.
- Do a two-pronged approach for testing PV (tissue and ELISA)
- The progression and regression of lesions in infected animals should be documented and understood before changes in management decisions.
- Maybe screen for retrovirus (as it could be the underlying cause as to my papillomatosis is clinically expressed).
- Develop a test to assess exposure to PV
- Look at disease induced by PV to determine if it manifests itself differently in wild vs. captive manatee; determine if disease manifests itself differently in captives once they are released
- Determine if disease affects survivorship, and if so, what co-factors may influence survival
- Determine if PV measurable affects recruitment by age-prevalence data, disease manifestation in various age groups, recruitment to dams infected with PV or manifesting the disease.

Questions:

- 1) What is the difference between manatee PV and killer whale PV? Does manatee PV jump to other marine mammals?
- 2) What is the epidemiology of PV in Florida manatees? What happens to manatees with PV as they get older?
- 3) Lesions may be indicating changes in the environment and showing overall changes in the animal's environment/population. Is there some environmental stressor that is surfacing which is causing immune suppression?
- 4) Can a skin test for PV be done post-mortem using PCR be done in the path lab?
- 5) Do PV lesions regress partially or completely as most papillomas do?