The Challenges with Biosafety Processes when Dealing with Rabies Suspects at a Veterinary Teaching Hospital

Andrea Smida, M.Sc., RBP
Biosafety Manager, Workplace Safety Environmental Protection
Andrea.smida@usask.ca
(306) 966-8496
Overview

- Introduction to the Veterinary Teaching Hospital (VTH)
- Current Biosafety Processes at the University of Saskatchewan (U of S) and the VTH
- History of Rabies in Saskatchewan
- Review of a Major Rabies Exposure in January 2010
- Summary of the Oversights Made and the Recommendations
Veterinary Teaching Hospital (VTH)

- University veterinary facility that conducts clinical, surgical, and diagnostic work.
  - Instructional clinic for veterinary program; and
  - Research facility for animal health and disease prevention.

- Consists of three units:
  - Small Animal Clinic;
  - Large Animal Clinic; and
  - Field Services.
Veterinary Teaching Hospital (VTH)
Small Animal Clinic
Large Animal Clinic
Current U of S Biosafety Processes

- Biosafety Code
  - Biosafety Code describes administrative and operational procedures and requirements for acquisition, use, storage, transportation, and disposal of biological materials.
  
  - Reflects current best practices in biosafety on Public Health Agency of Canada (PHAC) and Canadian Food Inspection Agency (CFIA) regulations and guidelines.
Current U of S Biosafety Processes

- **Biosafety Code - continued**
  - Administration of biosafety program through permitting system.
  - Outlines the responsibilities of the permit holder and authorized workers.
  - Outlines roles of institutional biosafety committee.
Current Biosafety Processes at the Veterinary Teaching Hospital (VTH)

- VTH holds a current U of S Biosafety permit
  - Permit covers the veterinary clinic, use of animals for vet teaching program, and research activities;
  - Designated as a containment level 2 area; and
  - Standard operating procedures.

- Training for the faculty, staff, and students in basic fundamentals in Biosafety
Current Biosafety Processes at the Veterinary Teaching Hospital (VTH)

- Each VTH unit has an Infection Control Manual
  - Developed to standardize procedures to prevent transmission of zoonotic diseases and disease between animals, including:
    - Handwashing, standard dress code, disinfection methods, waste disposal, sample submission, patient hospitalization, isolation, etc.
  - Outlines exposure control plan for various zoonotic diseases, including rabies
History of Rabies in Saskatchewan

- Rabies is a viral disease that attacks the central nervous system of warm-blooded animals.
History of Rabies in Saskatchewan

- In Saskatchewan, bats, skunks, foxes, and raccoons have been most commonly identified to transmit rabies.
  - In 2011, 23 animals were POSITIVE for rabies (1 cat, 1 horse, 17 skunks, and 4 bats).

- Vaccinations help with prevention and act as a treatment.
Current Rabies Procedure at the VTH

**Rabies Suspect Case**

1. Notify VTH main office and provide exposure list and medical records of rabies suspect.
2. Compile a list of all individuals who came in contact with rabies suspect.
3. If neurological symptoms persist or worsen or animal euthanized, notify and submit to necropsy.

- **PPE and Wash hands**
- **Isolation procedures**
- **Notification and Signage**

www.usask.ca/wsep
Current Rabies Procedure at the VTH - Continued

VTH Office notifies and submits exposure list and medical records to Biosafety Manager

Public Health Services (PHS) and CFIA investigates level of exposure and determine if the animal is sent out for testing

If **POSITIVE**, PHS contacts exposed individuals and administers post-exposure prophylaxis

Fill out U of S online incident report

www.usask.ca/wsep
Major Rabies Exposure in January 2010

- **History of the Rabies Suspect**
  - 7 year old German shepherd cross living on an acreage south east of Saskatoon and stayed outside
  - Dog initially went to a private veterinary clinic in Saskatoon to have a tumour removed on its eyelid on January 15, 2010
  - Owners took dog back to vet for follow up appointment on January 18, 2010, who was given a *rabies vaccine for the first time* and sent home
Major Rabies Exposure in January 2010

- History of the Rabies Suspect - Continued
  - Owners noticed that the dog fell ill on January 22, 2010
  - Owners pulled dog out of dog house and took dog to emergency at the VTH on January 25, 2010
  - Initial assessment by vets at VTH suspected metastases of the tumour and placed dog into regular kennel
Major Rabies Exposure in January 2010

- History of the Rabies Suspect - Continued
  - Upon initial assessment, initial clinician asked if dog was vaccinated and owner stated dog was vaccinated for rabies
  - Initially, the dog did not show any obvious symptoms of rabies, such as copious amounts of saliva
  - Over next 24 hours, condition of the dog deteriorated to seizures, grew aggressive tendencies, very sensitive to noise, and other neurological signs
Major Rabies Exposure in January 2010

- **History of the Rabies Suspect - Continued**
  - During this time, the dog ended up biting one veterinary animal technician
  - Dog was euthanized on January 26, 2010 and submitted to necropsy as a rabies suspect
  - After dog was euthanized, owners mentioned to necropsy staff that they found a dead skunk by dog at the end of November, 2009
Major Rabies Exposure in January 2010

- History of the Rabies Suspect - Continued

- On January 26, 2010, necropsy notifies the Biosafety Manager about the rabies suspect dog

- Biosafety Manager then notifies Public Health Services (PHS) and CFIA that one individual was bitten by the dog and others may have been exposed to the dog as well

- PHS completed normal follow up procedures for post animal bite injury and contacts the individual who was bitten
Major Rabies Exposure in January 2010

- History of the Rabies Suspect - Continued
  - During January 26 to 29, 2010, the Biosafety Manager compiles a list of all individuals who potentially came in contact with the dog and type of exposure (if any)
  - Biosafety Manager contacts the veterinary college’s Rabies Coordinator to obtain titres of the individuals’ who came in contact with the dog and notifies university medical consultant of the exposure
  - The Biosafety Manager than forwarded all information to PHS
Major Rabies Exposure in January 2010

- History of the Rabies Suspect - Continued
  - During this time, PHS focused on an in-depth risk assessment with each individual:
    - To verify the type of exposure;
    - Reviewed previous rabies vaccination status; and
    - Made recommendations for post-exposure vaccination as recommended by the medical health officer, The U of S medical consultant, and the Canadian Immunization Guide.
Major Rabies Exposure in January 2010

- **History of the Rabies Suspect - Continued**
  
  - PHS concluded the following:
    
    * 29 staff and students from the VTH came in contact with the dog;
    
    * One person suffered a bite injury;
    
    * All others classified as exposure to dog’s saliva to non-intact skin or spray of dog’s saliva to face; and
    
    * All individuals involved in exposure did not use any personal protective equipment.
History of the Rabies Suspect - Continued

- On January 29, 2012, the results from CFIA Lethbridge Laboratory reported that the specimens received were **POSITIVE** for rabies by R.T.C and F.A.T.

- As soon as the results were determined, PHS administered post-exposure prophylaxis to 24 individuals from the VTH
Identified Oversights

- Individuals do not wear appropriate PPE (e.g. gloves)

- A complete risk assessment for patient was not conducted
  - Case was quickly processed
  - Information about history that the dog was vaccinated was accepted at face value and investigated further (e.g. date of vaccination)
Identified Oversights

- Staff were rushed when conducting initial assessment of dog due to the clinic being abnormally busy.

- Staff initially did not recognize the case as a rabies suspect.

- Staff who initially assessed the case did not notify others about the potential rabies suspect initially.
Identified Oversights

- Staff and students did not follow the rabies protocol documented in the VTH Infection Control Manual.

- Great difficulty to identify all exposed individuals in a timely manner.

- Individuals did not know the post-exposure procedure.

- The owner do not disclose all information to the clinicians during the initial assessment at the VTH.
The Recommendations

- Review all procedures and policies to prevent contact with rabies virus within the workplace
  - Have workplace procedures posted for handling of new animals admitted into facility, include verification of any rabies vaccinations
  - Have workplace procedures include proper disinfection methods for areas contaminated with the rabies virus
The Recommendations

- Provide better notification that a rabies suspect is present within the clinic through signage and email

- If rabies is on the differential on the case, animal must be identified and treated as a rabies suspect
  - All staff and students must be trained on how to handle the rabies suspect
The Recommendations

- Use personal protective equipment (PPE)
  - Identify the type of PPE required for admitting new patients (e.g. wear gloves during any examination of the patient)
  - Wear protective face masks, gloves, clothes, and shoes when handling a rabies suspect or cleaning area where rabies suspect was confined

- Develop protocol for follow-up of rabies exposure and train staff and students on the procedure
Conclusion – Lessons Learned

- Continue to use this case study to educate new staff and students about lessons learned

- Ensure all new individuals working in the VTH are familiar with the rabies suspect procedure and post-rabies exposure procedure
Conclusion – Lessons Learned

- Review and update the rabies procedure in the VTH Infection Control Manual on a yearly basis

- Implementation of universal precautions as a VTH policy
QUESTIONS

"Relax. I just had a cappuccino."

© Original Artist
Reproduction rights obtainable from
www.CartoonStock.com